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Dundee Student Law Review

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Volume 12 – 2026

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Preface

Dear reader,

Having previously served as a copy editor for the Dundee Student Law Review (DSLR) from 2023-2025 with the previous Editor-in-Chief, Tom Edwards, I knew I wanted to run a special edition to echo the stellar works of his previous publications. Tom's intention was always to bolster and rejuvenate the Journal, which meant I needed to select a meaningful topic for our readers for Volume 12.

Given that the UK has been taking steps towards achieving net-zero by 2050, I decided that an environmental theme would be both engaging and practical. The theme inevitably spurred on a personal motivation to get more involved in other environment-related activities in the Dundee community.

Through my endeavours I was lucky enough to meet Dundee City Councillor, Kate Treharn, who lent me a book[1] when she discovered I was running a climate change theme for this year's Review. She happened to mention that though the book was now more than 10-years old, it's contents could be assumed to have been written today. The following is an excerpt of Klein's work:

> "We don't know exactly what a 4 degrees Celsius world would look like, but even the best-case scenario is likely to be calamitous. Four degrees of warming could raise global sea levels by 1 or possibly even 2 metres by 2100 (and would lock in at least a few additional meters over future centuries). This would drown some island nations such as the Maldives and Tuvalu and inundate many coastal areas from Ecuador to Brazil to the Netherlands to much of California and the northeastern United States, as well as huge swaths of South and Southeast Asia. Major cities likely in jeopardy include Boston, New York, greater Los Angeles,

[1] Naomi Klein, *This Changes Everything: Capitalism vs the Climate* (Penguin Books, 2014).

> Vancouver, London, Mumbai, Hong Kong, and Shanghai.[2] Meanwhile, brutal heat waves that kill tens of thousands of people even in wealthy countries, would become entirely unremarkable summer events on every continent but Antarctica. The heat would also cause staple crops to suffer dramatic yield losses across the globe…this a time when demand will be surging due to population growth and a growing demand for meat. And since crops will be facing not just heat stress but also extreme events such as wide-ranging droughts, flooding, or pest outbreaks, the losses could easily turn out to be more severe than the models have predicted. When you add ruinous hurricanes, raging wildfires, fisheries collapses, widespread disruptions to water supplies, extinctions, and globe-trotting diseases to the mix, it indeed becomes difficult to imagine that a peaceful, ordered society could be sustained…"[3]

Without a doubt, we are now all, to some degree or another, experiencing the effects of climate change. This past summer, Toronto (a Canadian city close to my hometown) was subjected to the worst air quality among major cities globally, because of wildfires.[4] As ominously forecasted by Klein, UK farmers have noted that this past summer has been the driest farming season and crop yields are diminishing due to crop stress.[5] England has, in the past five years, seen successive droughts, which now makes it difficult to deny that patterns are emerging.[6] Even Nepal's foreign minister was recently forthright in

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[2] The World Bank, 'Turn Down the Heat: Why a 4 degrees Celsius Warmer World Must Be Avoided' (*A Report for the World Bank by the Potsdam Institute for Climate Impact Research and Climate Analytics*, November 2012) xviii <https://unfccc.int/sites/default/files/resource/World%20Bank_Turn%20Down%20the%20Heat.pd> accessed 14 September 2026.

[3] Klein (n1) 13-14.

[4] Chris Fox, 'Smoke Does Not Check Passports: New Report Takes Closer Look at International Impact of Ontario Fires' (*CP24*, 14 August 2026) <Ontario wildfire smoke: How many were exposed to hazardous air?> accessed 10 September 2026.

[5] Verity Stevenson, 'Britain's 'Exceptionally Serious Drought Tests a Country Famous for its Rain' (CBC, 6 August 2026) <https://www.cbc.ca/news/world/united-kingdom-drought-9.7296651> accessed 10 September 2026.

[6] UK Government, 'Dry Weather and Drought in England: 28 August to 3 September 2026' (2026) <https://www.gov.uk/government/publications/dry-weather-and-drought-in-england-2026-summary-reports/dry-weather-and-drought-in-england-28-august-to-3-september-2026> accessed 10 September 2026.

statements relating to climate justice.[7] With regard to the recent flood disasters in Nepal, Shisir Khanal candidly stated that developing countries, like Nepal, contribute less greenhouse gas emissions, while developed states are some of the world's biggest emitters and are slow to support the recovery of other nations…[8]

Amidst this madness I am proud of this year's Review, because such topics are discussed with immense passion and urgency by our own authors. From issues like statehood continuity and climate induced territorial loss to space debris mitigation and regulation (a wholly relevant discussion, especially since SpaceX recently launched a pair of lunar landers which eventually crashed into the moon), the authors cover significant issues, raise important questions and discuss a variety of very relevant topics.

From everyone at the DSLR, we sincerely hope you enjoy this special issue and become inspired to get involved in the fight against climate change.

Sincerely,

Katia Sher – *Senior Managing Editor & Chair*

[7] Hannah Ellis-Petersen, "Nepal Says Big Polluters Must 'Wake Up' Calls for Climate Compensation Over Flood Disaster" (The Guardian, 8 September 2026) <https://www.theguardian.com/world/2026/sep/08/nepal-floods-climate-compensation> accessed 10 September 2026.

[8] ibid: Notably, Nepal contributes less than 0.1% of global greenhouse gas emissions, while its neighbours India and China are among the world's biggest emitters. The mountains of the Himalayas – which span across India, China, Nepal and Bhutan – have been warming at a rate nearly 50% faster than the global average.

Acknowledgements

In no particular order:

Volume 12 could not have been accomplished without the support of the 2025-2026 editorial board: Aminah Ali, Haroon Anwar, Peter Fairhurst, Nirmi Parekh, and Emma Kolbuc. I am immensely grateful for their encouragement and assistance in this endeavour.

In addition to the students who make up the DSLR editorial board, I would like to extend my deepest gratitude to some of the staff of the Law School as well. Research librarian, Kirsty Knowles, is a force of nature who has been remarkable in establishing the new website for the Review and helping Volume 12 come to fruition. I would also like to acknowledge the time and devotion offered by our academic liaisons, Dr Lorna Gillies, Dr Alexander Simmonds and Lecturer in Law Hannah Mimiec, without their support, the Journal could simply not run. An additional recognition is in order for Dr Alexander Simmonds and Lecturer in Law, Hannah Mimiec, for helping with the review and editing process of this particular issue. Many thanks to Libby Findlay, Lucie Johnston and Tracey Reid for their continued support in the promotion and facilitation of the Journal. Professor Peter McLeavy, thank you for assisting with the call for papers and helping me find my feet in the transition from copy editor to senior managing editor, your guidance is truly appreciated. I also wish to acknowledge Emeritus Professor Colin Reid and our former Head of Law, Professor Sarah Hendry, who very kindly agreed to be involved with this issue early on and provide the opening remarks and comments. They share a common passion for the environment, and we are very honoured to have had their support with this project.

Appreciation to our talented cover artist, Wen Xi Kong, is also in order. Your proficiency will be admired by our readers for years to come!

Thorntons LLP has been very involved in this year's Review and everyone at the DSLR is thankful for the time and expertise offered by their generous staff. Daisy Johnston kindly agreed to provide information on how young leaders can get involved in the Climate

Action Leadership Programme. Iain Buchan (a well-known solicitor and litigator amongst Dundee University staff and students) thoughtfully introduced me to Nina Robertson and Paul Adams who subsequently agreed to assist the copy editors in the editing process. In short, the result of this publication could not have been done without all their contributions.

Stronachs LLP was also involved in this issue and thanks to Michelle Dargie, the copy editors were also assisted by senior solicitor in the Corporate and Energy sector, Euan Munro. We are very grateful to them for their time and involvement.

Thank you, Andrew Iwanoczko, from the Wayfarer Programme for introducing us to one of our brilliant authors. Finally, I want to offer my appreciation to all of the committed and assiduous authors that form the joint effort of this important issue: Zain Bhatti, Joshua Goodland, Dr Akhilesh Kumar, Rohan Seenarine, Ellie Twist, and Arman Vaziri. Without you, there simply would be nothing to publish.

With all my gratitude,

Katia Sher – *Senior Managing Editor & Chair*

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Opening Remarks

Emeritus Professor Colin Reid

I was honoured to be invited to introduce this latest issue of the *Dundee Student Law Review*. The continuing health of this enterprise is something that all involved can be proud of. Congratulations are due to everyone concerned, whatever their role, from the earliest stages of planning and encouraging contributions, through the writing, reviewing and editing to the final stages of production.

The emergence of the *Dundee Student Law Review* was one of the many developments during the more than 30 years I spent on the staff at Dundee Law School and is sign of the continuous efforts by everyone there, staff and students, to ensure that Dundee offers a stimulating and productive experience that equips students for their future lives. Items in this issue, with their international dimension and environmental focus, also reflect two further big changes over that period.

Firstly, the academic legal world in Scotland has taken on a much more international flavour, in its students, staff and its level of engagement with ideas, issues and scholars beyond our own shores. Legal writing from Scotland is definitely not just confined to ideas from and impacts in Scotland.

Secondly, environmental law has grown to be recognised as a significant field of study, multi-faceted and with a key role in tackling the most pressing problems faced by the world. It is hard to remember the days when I had space on my bookshelf (and capacity in my budget!) to gather all of the books on environmental law in the UK.

Such evolution in how and what we study must continue and it is a pleasure to see in this issue the work of a new generation at the early stage of their contributions to our future.

Prof Colin T Reid,
Emeritus Professor of Environmental Law,
University of Dundee

Comment from Former Head of Law

Professor Sarah Hendry

It is always lovely to see the work coming through in the Dundee Student Law Review, and especially for me to see an issue focusing on climate and related topics. I very much look forward to reading the articles and many thanks to the editorial team and all the contributors.

A Litigator's Appeal

Daisy Johnston[1]

The impact on the legal profession on the climate can no longer be ignored. With the routine adoption of computer usage for everyday tasks and the ever-increasing use of artificial intelligence, we as a profession contribute increasingly to carbon emissions in turn causing potentially irreversible damage to the planet. Business travel also remains a substantial contributor to our carbon footprint, with solicitors, clients, counsel, and witnesses travelling sometimes hundreds of miles for meetings and hearings.

In January 2026 the Law Society of Scotland provided practical guidance to the profession in terms of the net zero target.[2] This warned against 'dabbling' in environmental law but encouraged the provision of appropriate environmental advice to clients and sustainable drafting. But in practical terms, what can and should legal professionals do to mitigate their own impact on the climate?

As a litigator myself, the primary adjustment I have observed is the introduction of virtual meetings, hearings, and mediations. First popularised during the COVID-19 pandemic, virtual appointments have reduced the need for both national and international travel on a large scale. In the longer term the lack of a requirement to attend in person has led to an increase in home working, reducing not only travel but also the need for larger office spaces and therefore energy used. Another unintended consequence of the COVID-19

[1] Solicitor at Thorntons LLP; LLB & DPLP at University of Dundee.
[2] https://www.lawscot.org.uk/members/journal-hub/articles/net-zero-and-the-next-steps-for-the-legal-profession-practical-guidance/

pandemic is the increased use of electronic filing and bundling, which has significantly reduced the substantial volume of paper required under the previous system. The wider adoption of electronic signatures, in particular Qualified Electronic Signatures, which are now accepted by the Books of Council and Session, allows for a significant reduction in both paper and postage of wet ink signed pages.

At a more strategic level we may see climate factors becoming part of competent professional practice and risk management, perhaps forming part of ethical considerations when accepting new clients or instruction. As with any successful change commitment from senior practitioners and thought leaders will be essential. Whilst the Scottish legal profession has made positive changes, it is clear to see that we are not out of the woods yet, and it is important to commit to real action. The profession must continue to make sustainable choices, whether that is using ethical suppliers and sustainable procurement, digital notebooks rather than paper or simply bringing coffee in a flask from home rather than picking up a takeaway cup!

If you are interested in climate activism and would like to learn more, 2050 Climate Group is proud to host the award-winning, completely free Climate Action Leadership Programme (CALP),[3] which is a unique opportunity for young people (18 - 35 years old) to connect with others in the climate community. The programme is designed to be accessible for different levels of climate knowledge; no formal qualifications are required. The programme is designed to be as flexible and accommodating as possible in relation to participants' schedules. While participants are encouraged to attend in-person event days, it is understood that this isn't always possible, so all core content is recorded. In addition, as part of their commitment to removing barriers 2050 Climate Group can cover travel costs through their Participation Fund. The Climate Action Leadership Programme also includes optional online modules and field trips, such as trips to the Scottish Parliament and sessions focusing on career development. One main element of the module is that over the 6-month period participants are supported in creating and delivering a climate action based on their interests. If you would like more information about the programme, please do not hesitate to get in touch.

[3] https://www.2050.scot/calp

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Climate Change, Carbon Trading, and Energy Finance: Emerging Legal and Regulatory Challenges

A comparative analysis on India and Scotland's climate governance

Dr Akhilesh Kumar[1]

Abstract

Climate change presents an urgent and systemic challenge for both developed and developing economies, necessitating legally robust, institutionally credible, and financially viable mechanisms to achieve net-zero targets. India and Scotland offer contrasting, yet complementary approaches to climate governance, particularly in the regulation of carbon trading and energy finance. These jurisdictions have been selected because they represent two distinct models of climate regulation: India is a rapidly developing federal democracy with an emerging domestic carbon market and development-oriented climate policies, whereas Scotland is a devolved jurisdiction within the United Kingdom (UK) that operates under mature statutory climate legislation and participates in UK-wide emissions trading arrangements. This comparison enables an evaluation of how differing constitutional structures, levels of economic development, and regulatory maturity influence the design and implementation of climate governance. This paper undertakes a comparative legal analysis of the climate change frameworks of India and Scotland, examining how regulatory design, market-based mechanisms, and financial instruments are deployed to address climate mitigation goals.

Keywords: Carbon Trading; Climate Change Law; Comparative Climate Governance; Energy Finance; India; Net-Zero Transition; Scotland; United Kingdom

[1] PhD, The University of Burdwan.

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1. Introduction

This paper analyses India's evolving carbon market architecture, including the statutory basis introduced by the Energy Conservation (Amendment) Act 2022 and the Carbon Credit Trading Scheme 2023, alongside sustainable finance initiatives aimed at mobilising capital for low-carbon development. In parallel, it examines Scotland's climate strategy under the UK framework, characterised by legally binding emissions reduction targets, participation in emissions trading regimes, and the use of advanced green finance mechanisms supported by mature regulatory institutions. Scotland, as previously mentioned, is a developed devolved jurisdiction within the constitutional framework of the UK. While it exercises substantial devolved legislative powers over climate change and environmental policy, important areas—including emissions trading, financial regulation, and certain aspects of energy market governance—remain governed through UK-wide legal and regulatory frameworks. Nevertheless, Scotland has adopted ambitious statutory climate targets and benefits from relatively mature regulatory and financial institutions that support its transition to net-zero emissions. The paper therefore evaluates the effectiveness of these regimes in translating climate commitments into enforceable legal obligations.

Particular attention is given to regulatory challenges such as measurement, reporting and verification (MRV) standards, institutional capacity, market transparency, and enforcement mechanisms that influences both the integrity and credibility of carbon markets in both jurisdictions. The study also explores the role of energy finance in supporting climate transitions, which includes green bonds, public–private partnerships, sovereign and sub-sovereign climate funds, and development finance institutions. It highlights how differences in economic capacity, regulatory maturity, and policy priorities shape climate finance outcomes in both India and Scotland. The comparative analysis demonstrates that the effectiveness of climate finance depends not merely on the availability of financial resources, but on the coherence of the legal and institutional framework governing their mobilisation, allocation, and oversight. While Scotland's more mature statutory framework provides greater regulatory certainty and institutional accountability, India's flexible and development-oriented approach reflects the practical necessity of balancing climate commitments with economic growth and energy security. The study therefore argues that effective climate finance requires a context-specific legal framework that combines regulatory certainty

with sufficient flexibility to accommodate differing developmental and constitutional realities.

Drawing on international climate instruments, especially Article 6 of the Paris Agreement and comparative regulatory practices, the paper identifies best practices and areas for reform. By situating carbon trading and energy finance within the broader context of climate change law, this paper contributes to comparative climate governance scholarship and proposes both legal and policy reforms aimed at strengthening regulatory coherence, ensuring environmental integrity, and supporting equitable and effective net-zero transitions in both jurisdictions.

Climate change has evolved from a predominantly scientific and environmental concern into one of the most complex legal and governance challenges of the twenty-first century. Rising global temperatures, increasing frequency of extreme weather events, sea-level rise, and long-term ecological degradation pose serious risks to economies and societies alike. Climate change has evolved from a predominantly scientific and environmental concern into one of the most complex legal and governance challenges of the twenty-first century. Rising global temperatures, increasing frequency and intensity of extreme weather events, accelerating sea-level rise, and long-term ecological degradation pose serious risks to human societies, ecosystems, and national economies. According to the Intergovernmental Panel on Climate Change (IPCC), human influence has unequivocally warmed the atmosphere, ocean and land, resulting in widespread and rapid changes across the climate system. These developments have compelled states to adopt increasingly sophisticated legal frameworks aimed at mitigation, adaptation, and climate resilience. Central to contemporary climate regulation are market-based mechanisms, particularly carbon trading, and the mobilisation of large-scale energy finance to facilitate the transition towards low-carbon and climate-resilient economies.[2] These risks have compelled states to adopt increasingly sophisticated legal frameworks, such as emissions trading schemes, carbon pricing mechanisms, renewable energy regulations, climate adaptation policies, and statutory net-zero emission targets, aimed at mitigating climate change, enhancing adaptation, and strengthening climate resilience. Central

[2] Intergovernmental Panel on Climate Change, Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC 2023), Summary for Policymakers 4–9 <https://www.ipcc.ch/report/ar6/syr/> accessed 15 July 2026.

to contemporary climate regulation are market-based mechanisms, particularly carbon trading, and the mobilisation of large-scale energy finance to enable transitions toward low-carbon and climate-resilient economies.

International climate law has undergone significant evolution over the past three decades. From the foundational principles articulated in the United Nations Framework Convention on Climate Change (UNFCCC)[3] to the flexible architecture of the Paris Agreement,[4] the global climate regime has progressively emphasised nationally determined commitments, cooperative mechanisms, and the alignment of financial flows with climate objectives. However, the effectiveness of these international commitments depends critically on their domestic legal implementation. Regulatory design, institutional capacity, and enforcement mechanisms at the national and sub-national levels ultimately determine whether climate goals translate into measurable emissions reductions.

In this context, comparative legal analysis provides a valuable methodological lens. By examining how different jurisdictions respond to shared global challenges, comparative analysis highlights regulatory strengths, exposes structural weaknesses, and facilitates the transfer of best practices.[5] India and Scotland present an especially instructive comparison. India is a major developing economy with rapidly growing energy demand, persistent developmental challenges, and increasing international expectations regarding climate mitigation. Scotland, by contrast, is a developed sub-national jurisdiction, which operates within the constitutional framework of the UK with ambitious statutory climate targets[6] as well as relatively mature regulatory and financial institutions.[7] The comparison is particularly valuable because it contrasts a state-led system with emerging carbon markets and evolving climate finance regulation against a jurisdiction with established statutory climate targets and participation in a mature emissions trading regime. This enables an assessment of how differing constitutional structures, regulatory maturity, and institutional capacities

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[3] United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107.
[4] Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) 3156 UNTS.
[5] Konrad Zweigert and Hein Kötz, *An Introduction to Comparative Law* (3rd edn, Tony Weir tr, OUP 1998) 15–18.
[6] Climate Change (Scotland) Act 2009 asp 12; Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 asp 15; Climate Change Committee, *Progress in Reducing Emissions in Scotland: 2023 Report to Parliament* (2023).
[7] CC(ERT)(S)A 2019 (n5).

influence the design and effectiveness of carbon markets and climate finance mechanisms.

Despite these differences, both jurisdictions rely on carbon trading mechanisms and energy finance instruments as central tools of climate policy. India is in the process of constructing a domestic carbon market, while simultaneously expanding sustainable finance initiatives. Scotland participates in emissions trading through UK-wide mechanisms and has developed innovative public finance institutions to support its net-zero transition.[8] Both jurisdictions recognise finance as a central enabler of the transition to a low-carbon economy and have adopted a combination of public and private financing instruments to support climate mitigation and adaptation. In India, climate finance is driven through public investment, sovereign green bonds, multilateral funding, and policy initiatives designed to mobilise private capital for renewable energy and sustainable infrastructure. Scotland, by contrast, complements public funding with an institutional framework that promotes sustainable investment through statutory climate targets, green finance initiatives, and collaboration with private financial markets. Although both jurisdictions acknowledge that mobilising finance is indispensable for achieving climate objectives, they differ significantly in the legal architecture, regulatory obligations, and institutional mechanisms governing sustainable finance. These similarities and differences provide a valuable basis for examining how legal frameworks influence the effectiveness of energy finance in supporting climate transition. This paper explores the legal and regulatory challenges that arise in these contexts, focusing on the integrity of carbon markets and the effectiveness of energy finance frameworks.

The paper proceeds in eight parts. Part 2 outlines the international legal framework governing climate change, with particular emphasis on market mechanisms and climate finance under the Paris Agreement. Part 3 examines climate change law and carbon market development in India. Part 4 analyses Scotland's statutory climate framework and emissions trading participation. Part 5 explores the role of energy finance in both jurisdictions. Part 6 offers a comparative doctrinal analysis, supported by a structured comparison table. Part 7 identifies key regulatory challenges and

[8] Ministry of Power, Government of India, *Carbon Credit Trading Scheme*, 2023 (Notification No SO 2824(E), 28 June 2023); Energy Conservation Act 2001 (as amended by the Energy Conservation (Amendment) Act 2022); International Energy Agency, India Energy Policy Review 2023 (IEA 2023).

proposes reforms. This Part does not seek to restate the conclusions reached in the preceding analysis. Instead, it advances specific legal and regulatory reforms that may strengthen the effectiveness, transparency, and accountability of carbon trading and energy finance frameworks in India and Scotland. Building upon the comparative assessment undertaken in the previous Parts, the following recommendations are intended to enhance market integrity, improve institutional coordination, and promote compliance with international climate obligations while accommodating the differing constitutional and regulatory contexts of the two jurisdictions. Part 8 concludes by reflecting on broader implications for comparative climate governance.

2. International Legal Framework on Climate Change

The contemporary architecture of climate governance is firmly rooted in international environmental law, which has progressively evolved from aspirational norm-setting to more structured regulatory and quasi-market mechanisms. For instance, the United Nations Framework Convention on Climate Change (UNFCCC), adopted in 1992, constitutes the foundational instrument of this regime. It establishes core principles such as equity, precaution, sustainable development, the principle of common but differentiated responsibilities and respective capabilities (CBDR–RC), which recognises the historical responsibility of developed states for greenhouse gas emissions, while simultaneously acknowledging the developmental priorities of developing countries.[9] Although the UNFCCC imposed largely procedural obligations—such as reporting, information sharing, and institutional participation—it has also created a durable legal and institutional framework, which has enabled subsequent normative expansion through protocols, decisions, and soft-law instruments.[10]

A defining feature of the UNFCCC regime is its reliance on conference-driven lawmaking. Decisions adopted by the Conference of the Parties (COP), while formally non-binding, have played a crucial role in shaping state practice and regulatory expectations. Scholars have described this process as an example of "dynamic treaty

[9] UNFCCC (n3).
[10] Organisation for Economic Co-operation and Development, *OECD Companion to the Inventory of Support Measures for Fossil Fuels* 2023 (OECD Publishing 2023) <https://doi.org/10.1787/bac6f2d2-en> accessed 17 July 2026.

interpretation," whereby evolving scientific knowledge and political consensus progressively inform legal obligations. This flexible architecture has allowed the climate regime to adapt to changing economic and technological circumstances, but it has also generated concerns regarding legal certainty and enforceability. Despite these differences, both jurisdictions rely on carbon trading mechanisms and energy finance instruments as central tools of climate policy. India is in the process of constructing a domestic carbon market, while simultaneously expanding sustainable finance initiatives.[11] Scotland participates in emissions trading through UK-wide mechanisms and has developed innovative public finance institutions to support its net-zero transition.[12] The Kyoto Protocol 1997 marked a decisive shift toward operationalising climate obligations through legally binding emissions reduction targets for developed countries listed in Annexure I.[13] Of particular legal significance was the introduction of flexible market-based mechanisms, namely international emissions trading, Joint Implementation, and the Clean Development Mechanism (CDM). These mechanisms were premised on the economic efficiency of emissions reductions and sought to internalise the cost of carbon through tradable units. Emissions trading under Article 17 of the Protocol laid the conceptual foundation for contemporary cap-and-trade systems by recognising emissions allowances as transferable compliance instruments.[14]

The CDM, established under Article 12 of the Kyoto Protocol, enabled developed countries to meet part of their emissions reduction commitments by investing in mitigation projects in developing countries. While the mechanism generated substantial investment flows—India being one of the largest beneficiaries—it was also subject to sustained criticism. Empirical studies highlighted deficiencies relating to additionality, inflated baselines, and inconsistent verification standards.[15] From a legal perspective, these critiques exposed the tension between market efficiency and environmental integrity, a tension that continues to shape debates on carbon trading. The limitations of the Kyoto regime, combined with changing geopolitical realities, prompted a reconfiguration of international climate law culminating in the Paris Agreement 2015. The Agreement represents a paradigm shift from a top-down,

[11] Ministry of Power (n8); ECA 2001 (n8).
[12] OECD (n10); International Energy Agency, World Energy Investment 2024 (IEA 2024).
[13] Paris Agreement (n4) art 6.
[14] ibid art 2(1)(c).
[15] Constitution of India 1950 arts 48A, 51A(g).

bifurcated system to a universal, bottom-up architecture based on nationally determined contributions (NDCs). Rather than imposing uniform obligations, the Agreement requires each Party to prepare, communicate, and maintain successive NDCs reflecting its highest possible ambition.[16] Although NDCs are not legally binding with respect to the achievement of their substantive emissions reduction targets, the procedural obligations concerning their preparation, communication, maintenance, and periodic reporting are binding under international law under the Paris Agreement. In practice, most Parties have complied with these procedural obligations by submitting and updating their NDCs and transparency reports, although the timeliness, completeness, and ambition of such submissions vary significantly across jurisdictions.[17]

Article 6 of the Paris Agreement occupies a central position in the emerging law of carbon markets. It provides a legal framework for voluntary cooperation among Parties, including the use of internationally transferred mitigation outcomes (ITMOs) under Article 6(2) and the establishment of a new mechanism under Article 6(4) to contribute to mitigation and sustainable development.[18] Unlike the CDM, Article 6 explicitly incorporates safeguards aimed at ensuring environmental integrity, including robust accounting rules, corresponding adjustments, and the avoidance of double counting. These requirements reflect lessons learned from the Kyoto era and signal a maturation of international carbon market regulation. The legal significance of Article 6 goes beyond emissions trading. It embodies a hybrid regulatory model that combines decentralised cooperation with centralised oversight through UNFCCC institutions. Decisions adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA), particularly at COP26 in Glasgow,[19] have elaborated detailed rules governing authorisation, reporting, registries, and supervisory bodies.[20] These developments underscore the increasing complexity and legalisation of international climate governance, blurring the distinction between hard and soft law. These developments underscore the increasing complexity and legalisation of international climate governance, blurring the distinction between hard

[16] *Subhash Kumar v State of Bihar* (1991) 1 SCC 598.
[17] United Nations Framework Convention on Climate Change, *Nationally Determined Contributions under the Paris Agreement – Synthesis Report* (UNFCCC 2024).
[18] *MC Mehta v Union of India* (1987) 1 SCC 395.
[19] UNFCCC, 'Rules, Modalities and Procedures for the Mechanism Established by art 6(4) of the Paris Agreement' (2021).
[20] Axel Michaelowa, 'India's Role in the Global Carbon Market' (2010) 10 Climate Policy 207.

and soft law. Although many international climate instruments continue to rely on non-binding commitments, reporting mechanisms, and voluntary cooperation, they increasingly generate normative and legal effects through mandatory procedural obligations, domestic implementation measures, transparency frameworks, and compliance mechanisms. As a result, soft law instruments frequently influence the interpretation, development, and practical operation of binding legal obligations, producing a more integrated and hybrid system of climate governance.[21]

Equally transformative is the Paris Agreement's explicit integration of climate finance into the core objectives of the regime. Article 2(1)(c) commits Parties to making financial flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.[22] This provision has been widely interpreted as extending the reach of climate obligations beyond environmental ministries to encompass financial regulators, central banks, and development finance institutions. It provides a normative foundation for aligning domestic financial regulation, energy finance policies, and investment frameworks with climate objectives.[23]

In addition, Articles 9, 10, and 11 of the Paris Agreement reinforce the importance of finance, technology transfer, and capacity building to achieve climate goals. Developed countries are required to provide financial resources to assist developing countries and all Parties are encouraged to mobilise climate finance from a wide variety of sources.[24] These provisions reflect a recognition that mitigation and adaptation cannot be achieved without substantial financial mobilisation, particularly in developing economies. From a comparative perspective, the international legal framework exerts differentiated influences on domestic legal systems. For developing countries such as India, principles of CBDR–RC and financial support shape the design of carbon markets and energy finance mechanisms in ways that prioritise developmental needs.[25] For developed jurisdictions such as Scotland, operating within the UK framework, international obligations reinforce existing regulatory structures and encourage higher levels of ambition. In both cases, international climate law operates

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[21] Dinah Shelton, *Commitment and Compliance: The Role of Non-Binding Norms in the International Legal System* (OUP 2000) 1–20; Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani, *International Climate Change Law* (OUP 2017) 54-63.
[22] Energy Conservation (Amendment) Act 2022.
[23] Government of India, Carbon Credit Trading Scheme 2023.
[24] CC(S)A 2009 (n6).
[25] UNFCC (n3) arts 3(1), 4(3) and 4(7); Paris Agreement (n3) arts 2(2), 4(3) and 9; Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani, *International Climate Change Law* (OUP 2017) 213–241.

less as a prescriptive code and more as an enabling framework that shapes domestic regulatory choices.

Ultimately, the effectiveness of the international climate regime depends on its domestic reception and implementation. While the Paris Agreement provides legal and normative guidance on carbon trading and climate finance, it leaves significant discretion to states in designing regulatory mechanisms. The following sections examine how India and Scotland have responded to this discretion, highlighting the challenges of translating evolving international norms into coherent, enforceable domestic regimes.

3. Climate Change Law and Governance in India

3.1 Constitutional Foundations and Judicial Climate Jurisprudence

India's climate change governance framework is not anchored in a single, comprehensive climate statute. Instead, it is dispersed across constitutional provisions, sector-specific legislation, executive policies, and judicial interpretation. The constitutional foundation for environmental and climate protection is primarily derived from Part IV (Directive Principles of State Policy) and Part IVA (Fundamental Duties) of the Constitution of India. Article 48A directs the State to protect and improve the environment and to safeguard forests and wildlife, while Article 51A(g) imposes a duty upon citizens to protect the natural environment.[26] Although these provisions are non-justiciable, they have played a significant interpretive role in environmental adjudication. The Supreme Court of India has progressively constitutionalised environmental protection by reading it into the right to life under Article 21. Beginning with *Subhash Kumar v State of Bihar*, the Court recognised the right to pollution-free water and air as integral to the right to life.[27] This jurisprudence was further expanded in *M.C. Mehta v Union of India*, where the Court articulated principles such as absolute liability, sustainable development, and the precautionary principle.[28] While these decisions predate the contemporary climate change discourse,

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[26] (n15) art 48A; art 51A(g). See also Shyam Divan and Armin Rosencranz, *Environmental Law and Policy in India* (2nd edn, OUP 2001) 45–47.
[27] (n16) [7]-[8].
[28] (n18); *MC Mehta v Union of India (Ganga Pollution Case)* (1988) 1 SCC 471. See also *Vellore Citizens Welfare Forum v Union of India* (1996) 5 SCC 647 [11] – [13].

they have provided a doctrinal foundation upon which climate-related claims may be constructed.

In recent years, Indian courts have begun to explicitly engage with climate change. In *Ridhima Pandey v Union of India*, the National Green Tribunal (NGT) acknowledged the seriousness of climate change, but declined to issue specific directions, citing the absence of a dedicated statutory framework.[29] The Tribunal observed that the formulation and implementation of climate policy primarily fell within the domain of the executive and that judicial intervention was unwarranted in the absence of any demonstrated failure to discharge statutory obligations. This judicial restraint highlights a structural limitation of India's climate governance: the absence of clear legislative mandates constrains adjudicatory intervention. Consequently, while constitutional jurisprudence provides normative support, it does not substitute for detailed regulatory design.

3.2 Policy Architecture and National Climate Strategy

India's primary policy instrument for climate governance is the National Action Plan on Climate Change (NAPCC), launched in 2008.[30] The NAPCC adopts a mission-based approach, originally comprising eight National Missions, including the National Solar Mission, National Mission for Enhanced Energy Efficiency, and National Mission on Sustainable Habitat. These missions seek to integrate climate objectives with developmental priorities, reflecting India's interpretation of the principle of common but differentiated responsibilities and respective capabilities (CBDR–RC). The NAPCC has since been supplemented by State Action Plans on Climate Change (SAPCCs), which aim to decentralise climate governance. However, empirical studies indicate significant variation in the quality, ambition, and implementation capacity of SAPCCs across states.[31] This fragmentation poses challenges for the uniform

[29] *Ridhima Pandey v Union of India* (2017) Original Application No 187 of 2017 (National Green Tribunal, Principal Bench). See Lavanya Rajamani, 'India's Climate Change Litigation' (2018) 30 Journal of Environmental Law 1, 7–9.
[30] Government of India, *National Action Plan on Climate Change* (Prime Minister's Council on Climate Change, 2008).
[31] Navroz K Dubash and others, 'Indian Climate Change Policy: Exploring a Co-Benefits Based Approach' (2013) 43 *Economic and Political Weekly* 47; D M Sathe and S Bansal, 'Assessing State Action Plans on Climate Change in India' (2016) 51 *Economic and Political Weekly* 52.

application of climate policy and complicates the establishment of nationwide market-based mechanisms such as carbon trading.

India's international climate commitments are articulated through its Nationally Determined Contributions (NDCs) under the Paris Agreement. In its updated NDC, India committed itself to reducing the emissions intensity of its GDP and increasing the share of non-fossil fuel-based energy capacity approximately 50% by 2030.[32] While these commitments are framed in relative rather than absolute terms, they have significant implications for domestic regulatory design, particularly in the energy and industrial sectors.

3.3 Statutory Basis for Carbon Markets: Energy Conservation Framework

A critical development in India's climate governance landscape is the statutory recognition of carbon markets through the Energy Conservation (Amendment) Act 2022. The amendment expanded the scope of the Energy Conservation Act 2001 by empowering the central government to establish a carbon credit trading scheme.[33] This legislative intervention represents the first explicit statutory basis for carbon trading in India, marking a shift from earlier policy-driven mechanisms to formal legal regulation. Prior to the enactment of the Energy Conservation (Amendment) Act 2022, market-based emissions reduction initiatives, such as the Perform, Achieve and Trade (PAT) Scheme introduced under the National Mission for Enhanced Energy Efficiency, operated primarily through executive policies and subordinate regulations without providing a comprehensive statutory framework for carbon trading. The 2022 amendment therefore establishes the first express legislative foundation for the creation and regulation of a national carbon credit trading market in India.[34] The amended Act authorises the central government to specify sectors, designate authorities, and prescribe the manner of issuance and trading of carbon credits. Importantly, it integrates carbon trading within the existing energy efficiency regulatory framework, particularly the Perform, Achieve and Trade (PAT) scheme.

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[32] UNFCCC, India's Updated First Nationally Determined Contribution (2022) <https://unfccc.int> accessed 10 January 2026.
[33] (n22) s 14A (India); See also Ministry of Power, Government of India, *Carbon Market in India* (2023).
[34] Government of India, Bureau of Energy Efficiency, *Perform, Achieve and Trade (PAT) Scheme* <https://beeindia.gov.in/en/programmes/perform-achieve-and-trade-pat> accessed 18 July 2026.

This integration reflects a pragmatic approach that builds upon institutional familiarity while gradually expanding the scope of market-based climate regulation.

3.4 Carbon Credit Trading Scheme 2023: Design and Scope

Pursuant to the 2022 amendment, the Government of India notified the Carbon Credit Trading Scheme (CCTS) 2023.[35] The Scheme establishes a regulatory architecture for the creation and trading of carbon credits. The Bureau of Energy Efficiency (BEE) is designated as the administrator responsible for accreditation, issuance, and compliance oversight, while the Central Electricity Regulatory Commission (CERC) regulates the trading of carbon credits on recognised exchanges. The CCTS adopts a phased approach. In its initial phase, the Scheme focuses on compliance mechanisms linked to energy efficiency and renewable energy obligations. Over time, it envisages expansion into voluntary and potentially mandatory emissions trading across additional sectors. This incremental design seeks to mitigate regulatory risk and allow institutional capacity to develop alongside market growth. However, several legal and regulatory ambiguities persist. The Scheme does not clearly define the legal nature of carbon credits, leaving open questions regarding their classification as commodities, financial instruments, or *sui generis* regulatory assets. This ambiguity has implications for taxation, insolvency treatment, and investor protection.[36] This uncertainty has significant implications for the legal operation and commercial viability of India's emerging carbon market. First, the absence of a clear legal classification creates uncertainty in the field of taxation. If carbon credits are treated as goods or commodities, their transfer may attract the Goods and Services Tax (GST), whereas their characterisation as financial instruments or statutory permits may lead to a different tax treatment. Similarly, uncertainty remains regarding the applicability of income tax provisions to the generation, transfer, and trading of carbon credits, particularly in distinguishing between business income and capital gains. Such ambiguity increases compliance costs and exposes market participants to potential tax disputes.

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[35] Ministry of Power, Government of India, Carbon Credit Trading Scheme, 2023 (Notification dated 28 June 2023).
[36] Ajay Mathur, 'Designing India's Carbon Market: Legal and Institutional Challenges' (2023) 58 *Economic and Political Weekly* 19, 22–24.

Secondly, the absence of statutory recognition of carbon credits as a distinct form of property raises important issues under insolvency law. The Insolvency and Bankruptcy Code 2016 recognises various forms of assets that may be included within the insolvency estate of a corporate debtor. However, in the absence of legislative clarification, it remains uncertain whether carbon credits constitute transferable assets capable of being realised by insolvency professionals for the benefit of creditors. Similar questions arise regarding the creation of security interests over carbon credits, their attachment during execution proceedings, and their treatment during corporate restructuring or liquidation. The lack of certainty may reduce the willingness of financial institutions to recognise carbon credits as commercially valuable assets or collateral for financing.

Thirdly, the uncertain legal character of carbon credits creates challenges for investor protection and market regulation. If carbon credits are ultimately characterised as financial instruments or securities, trading activities may fall within the jurisdiction of the Securities and Exchange Board of India (SEBI), thereby attracting regulatory requirements relating to disclosure, market conduct, investor protection, and enforcement against fraud and market manipulation. Conversely, if they are regarded merely as regulatory permits or environmental compliance instruments, the existing securities law framework may not apply, leaving gaps in regulatory oversight and reducing legal protection for market participants. This uncertainty may discourage institutional investors, increase transaction risks, and undermine confidence in the integrity and transparency of the carbon market.

Finally, these unresolved questions have broader implications for contractual certainty and cross-border carbon trading. Parties engaged in domestic or international carbon credit transactions require legal certainty regarding ownership rights, transferability, enforcement of contractual obligations, dispute resolution, and the recognition of carbon credits across jurisdictions. Without a comprehensive statutory framework clarifying the legal status of carbon credits, India's carbon market may face increased transaction costs, regulatory fragmentation, and reduced investor confidence, thereby limiting its effectiveness in supporting the country's climate commitments under the Paris Agreement. Legislative clarification, either through amendments to the Energy Conservation Act 2001 or detailed subordinate regulations

issued under the Carbon Credit Trading Scheme, would significantly enhance legal certainty and promote the efficient functioning of India's carbon market.

3.5 Institutional Capacity, MRV, and Enforcement Challenges

Effective carbon markets depend upon robust systems for measurement, reporting, and verification (MRV). In India, MRV frameworks are still evolving and vary significantly across sectors. While the PAT scheme has generated experience with energy efficiency certificates, scaling MRV systems to economy-wide emissions trading presents substantial technical and administrative challenges.[37] Institutional fragmentation further complicates enforcement. Multiple ministries and agencies—including the Ministry of Power, Ministry of Environment, Forest and Climate Change, BEE, and sectoral regulators—exercise overlapping responsibilities. The absence of a dedicated climate regulator raises concerns regarding coordination, accountability, and regulatory capture. Scholars have argued that without independent oversight, carbon markets risk undermining environmental integrity and public confidence.[38] Enforcement mechanisms under the CCTS rely primarily on penalties prescribed by delegated legislation. Compared to jurisdictions with statutory emissions caps and judicially enforceable targets, India's enforcement framework remains relatively weak. This reflects a broader preference for facilitative rather than coercive regulation, consistent with India's developmental priorities. This reflects a broader preference for facilitative rather than coercive regulation, consistent with India's developmental priorities and the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR–RC).[39] In contrast, Scotland has adopted a more prescriptive statutory approach, imposing legally binding emissions reduction targets under the Climate Change (Scotland) Act 2009, as amended by the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, supported by regular monitoring, independent oversight, and statutory accountability mechanisms. The differing approaches illustrate the influence of each jurisdiction's constitutional framework,

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[37] Bureau of Energy Efficiency, *Perform, Achieve and Trade* (PAT) Scheme – Evaluation Report (BEE 2021). See also Michael Mehling and Harro van Asselt, 'Designing MRV Systems for Carbon Markets' (2018) 27 Review of European, *Comparative & International Environmental Law* 3.
[38] Lavanya Rajamani, 'The Making and Unmaking of India's Climate Policy' (2021) 33 *Journal of Environmental Law* 1, 18–21.
[39] UNFCC (n3) art 3(1); Paris Agreement (n4) art 2(2).

level of economic development, and climate governance priorities: whereas India's regulatory framework emphasises flexibility to balance climate objectives with economic development, Scotland's framework places greater emphasis on legally enforceable obligations and institutional accountability.

3.6 Assessment and Implications for Comparative Analysis

India's climate governance framework illustrates a model of regulatory gradualism and experimentalism. Constitutional principles and judicial jurisprudence provide normative legitimacy, while sectoral legislation and executive schemes supply operational mechanisms. The emergence of a statutory carbon market represents a significant step forward, yet its effectiveness will depend on regulatory clarity, institutional capacity, and alignment with international standards under Article 6 of the Paris Agreement. From a comparative perspective, India's approach contrasts sharply with the statutory certainty and enforceability characteristic of Scotland's climate regime. At the same time, India's emphasis on flexibility and development-sensitive regulation offers important lessons for designing carbon markets in emerging economies. These contrasts form the basis for the comparative doctrinal analysis undertaken in subsequent sections.

4. Climate Change Law and Governance in Scotland

4.1 Statutory Framework

Scotland has emerged as a leading jurisdiction in Europe for climate governance, underpinned by one of the most ambitious statutory frameworks on climate change.[40] The Climate Change (Scotland) Act 2009 introduced legally binding greenhouse gas reduction targets, a statutory system of carbon budgeting and requirements for annual reporting and monitoring by the Scottish Ministers.[41] It requires the Scottish Ministers to set annual emissions reduction targets and report regularly to the Scottish Parliament on progress towards meeting those targets and imposed statutory climate change duties on Scottish public bodies, supported by monitoring and reporting

[40] Climate Change Committee, *Progress in Reducing Emissions in Scotland: 2024 Report to Parliament* (Climate Change Committee 2024); CC(S)A 2009 (n6); CC(ERT)(S)A 2019 (n6).
[41] CC(S)A 2009 (n6).

mechanisms.[42] These institutional mechanisms are intended to enhance transparency, accountability, and the implementation of Scotland's climate change objectives.[43] The Act codified climate governance as a core function of government decision-making, ensuring that emissions reductions are systematically integrated across sectors including energy, transport, and industry. Its provisions include sectoral targets, detailed duties for public bodies, and the authority to issue guidance on adaptation and mitigation measures.[44]

The framework was strengthened by the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, which established a legally binding net-zero target for 2045, five years ahead of the UK-wide target of 2050.[45] This legislation reflects Scotland's commitment to embedding climate governance within a comprehensive statutory framework, strengthening legal accountability and long-term climate policy implementation.[46] It also requires the Scottish Ministers to set annual targets, update emission inventories, and prepare reports for the Scottish Parliament. The 2019 amendment introduced new compliance mechanisms, including enhanced scrutiny by the UK Climate Change Committee (CCC), which evaluates policy progress, advises on carbon budgets, and reports publicly on achievements and shortfalls.[47] The 2019 amendment strengthened accountability by enhancing scrutiny by the UK Climate Change Committee (CCC), which independently evaluates policy progress, advises on emissions reduction pathways, and reports publicly on achievements and implementation gaps.[48] Although these mechanisms have improved transparency and institutional accountability, their effectiveness has been mixed. The CCC has recognised Scotland's substantial long-term reductions in greenhouse gas emissions but has also concluded that progress towards several interim targets has been insufficient, leading the Scottish Government in 2024 to acknowledge that the

[42] CC(S)A 2009 (n6) ss 33–37.
[43] Scottish Government, Climate change: legislation (11 July 2017); Climate Change Committee, Progress in Reducing Emissions in Scotland (latest annual report).
[44] ibid, s 3-5.
[45] CC(ERT)(S)A 2019 (n6).
[46] CC(S)A 2009 (n6); CC(ERT)(S)A 2019 (n6); Aileen McHarg, 'Climate Change Constitutionalism? Lessons from the United Kingdom' (2011) 2(4) *Climate Law* 469–484.
[47] UK Climate Change Committee, *Progress in Reducing Emissions*: *2023 Report to Parliament* (CCC 2023) 12–18.
[48] CCC Report to Parliament (n40).

statutory 2030 emissions reduction target was no longer achievable.[49] These developments suggest that Scotland's principal challenge lies not in the absence of a robust legal framework but in the effective implementation of climate policies necessary to meet its statutory ambitions.

The statutory framework provides a level of legal certainty that is largely unparalleled internationally. The statutory framework provides a high degree of legal certainty by establishing legally binding emissions reduction targets, clearly defined institutional responsibilities, statutory planning obligations, and regular monitoring and reporting requirements. Unlike jurisdictions that rely predominantly on executive policies or non-binding climate strategies, Scotland's framework places key climate commitments on a statutory footing, thereby enhancing regulatory predictability, institutional accountability, and long-term policy continuity. This legal certainty provides greater confidence for public authorities, private investors, and other stakeholders by reducing regulatory uncertainty and facilitating long-term investment in low-carbon infrastructure and renewable energy projects. Nevertheless, the effectiveness of this framework ultimately depends upon consistent policy implementation and the achievement of statutory targets in practice. Targets are enforceable through judicial review, allowing civil society actors, NGOs, and other stakeholders to hold the government accountable for policy inaction. For example, courts have considered the justiciability of climate targets in light of statutory obligations, reinforcing the principle that climate commitments carry concrete legal weight.[50] The statutory climate targets are supported by the possibility of judicial review, enabling the courts to scrutinise whether the Scottish Ministers have complied with their statutory duties and procedural obligations under the Climate Change (Scotland) Act 2009. However, judicial review is primarily concerned with the legality, rationality, and procedural propriety of governmental decision-making, rather than the substantive merits of climate policy. Accordingly, while the courts may require compliance with statutory obligations or set aside unlawful decisions, they are generally cautious about substituting their own views for those of the executive in matters involving complex policy choices and the allocation of public resources. The

[49] Scottish Government, *Statement to Parliament on Scotland's Climate Change Targets* (18 April 2024); Climate Change Committee, *Progress in Reducing Emissions in Scotland: 2024 Report to Parliament* (Climate Change Committee 2024).
[50] *Friends of the Earth Scotland v Scottish Ministers* [2021] CSOH 32.

combination of statutory targets, carbon budgeting, and independent oversight constitutes a system of climate accountability that contrasts sharply with jurisdictions that rely primarily on executive policy instruments or voluntary commitments.

In addition to emissions targets, the Act obliges Scottish public bodies to exercise their functions in a way consistent with climate objectives. This "public body duty" has significant implications for planning, procurement, and infrastructure investment. By embedding climate obligations across government agencies, Scotland seeks to ensure that climate policy is coherent and institutionally anchored.[51] It also creates a legal expectation that governmental decision-making will explicitly consider carbon reduction and adaptation priorities, thereby internalising climate concerns within routine governance processes.

The Scottish framework is complemented by secondary legislation and guidance, including the Climate Change (Duties of Public Bodies: Reporting Requirements) Regulations 2015 and sector-specific statutory guidance. These instruments operationalise high-level statutory duties, detailing how agencies should monitor emissions, report progress, and integrate climate considerations into operational decision-making.[52] The clarity of these statutory instruments has supported the implementation of Scotland's climate policies by providing a stable legal framework for emissions reduction, renewable energy development, and low-carbon innovation. Although the effectiveness of these measures ultimately depends on implementation and broader economic conditions, the statutory framework has enhanced regulatory certainty and facilitated long-term investment in the low-carbon transition.

4.2 Emissions Trading and Carbon Markets

A central pillar of Scotland's climate governance is its participation in the UK Emissions Trading Scheme (UK ETS), which replaced the EU ETS following Brexit.[53] The UK ETS covers the power sector, energy-intensive industries, and aviation, applying a cap on total emissions while allowing the trading of carbon allowances. By creating a price signal for emissions, the scheme incentivises investment in low-carbon

[51] CC(S)A 2009 (n6) s 44.
[52] Climate Change (Duties of Public Bodies: Reporting Requirements) Regulations 2015.
[53] Greenhouse Gas Emissions Trading Scheme Order 2020 (UK).

technologies and operational efficiency. The UK ETS regulations specify allocation procedures, monitoring, reporting, verification, and enforcement mechanisms, with significant penalties for non-compliance.[54]

Scotland's participation in the UK ETS provides access to a mature carbon market characterised by transparent institutional arrangements. The scheme is administered at the UK level, with devolved governments participating in consultation processes and policy design where relevant. However, as a devolved administration, Scotland has limited direct control over the scheme's overall architecture, including allowance caps, allocation methodology, and auction design.[55] This limited autonomy presents challenges for tailoring carbon pricing policies to devolved climate objectives, such as sectoral decarbonisation strategies or regional industrial transition plans.

Nevertheless, the UK ETS offers substantial benefits. By operating within a consolidated market, Scottish firms gain exposure to a larger pool of trading participants, enhancing liquidity and price discovery. It also allows alignment with international standards, facilitating potential linkage with other carbon markets under Article 6 of the Paris Agreement.[56] It also allows alignment with international standards, thereby creating the potential for future linkage with international carbon markets under Article 6 of the Paris Agreement. However, such linkage is neither automatic nor solely dependent on domestic regulatory alignment. It would require robust accounting and monitoring frameworks, the application of corresponding adjustments[57] to prevent double counting of emissions reductions, compliance with internationally agreed transparency requirements, and the conclusion of appropriate bilateral or multilateral legal and political agreements[58] between participating jurisdictions. Accordingly, while alignment with international standards enhances the prospects for future market integration, the practical implementation of Article 6 remains contingent upon both domestic regulatory readiness and international cooperation. For policymakers, the UK ETS complements domestic carbon budgeting

[54] ibid, regs 4-15.
[55] Maria Lee, 'The UK Emissions Trading Scheme and Devolution' (2022) 34 *Journal of Environmental Law* 451, 462–465.
[56] Paris Agreement (n4) art 6.
[57] Decision 2 CMA 3, *Guidance on Cooperative Approaches Referred to in Article 6, Paragraph 2, of the Paris* Agreement (13 November 2021) paras 1–7, annex.
[58] ibid; Lavanya Rajamani and Jacqueline Peel, *Principles of International Environmental Law* (5th edn, CUP 2021) 395–403.

by translating statutory emissions caps into market signals that influence investment and operational decisions in energy-intensive sectors.

Scotland also leverages complementary instruments to support carbon markets and climate finance. The Scottish National Investment Bank (SNIB), established under the Scottish National Investment Bank Act 2020, functions as a public finance institution with an explicit climate mandate.[59] By providing patient capital for renewable energy, green infrastructure, and innovation, the SNIB helps regulated entities respond to carbon pricing incentives, thereby reinforcing the efficacy of the UK ETS. This alignment between statutory targets, market mechanisms, and financial support exemplifies an integrated approach to climate governance, combining regulatory, economic, and financial levers.

4.3 Strengths and Limitations

Scotland's climate governance benefits from several key strengths. First, statutory certainty ensures that targets and obligations are legally enforceable, providing a credible framework for government policy and private investment.[60] Second, institutional maturity, including the CCC and SNIB, facilitates coherent policy implementation, monitoring, and oversight. Third, integrated enforcement mechanisms, including judicial review and financial penalties, reinforce compliance and accountability. Collectively, these features enhance environmental integrity and market confidence, enabling Scotland to pursue ambitious decarbonisation strategies with credible legal backing.

However, challenges remain. The interaction between devolved and reserved powers can complicate regulatory coherence. Certain sectors, including energy market regulation and carbon pricing, remain reserved to the UK government, limiting the scope for independent Scottish policy innovation.[61] This constraint may affect the ability of devolved authorities to set sector-specific carbon prices or adjust auctioning mechanisms to meet local industrial or social objectives.

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[59] Scottish National Investment Bank Act 2020 s 1–3.
[60] CC(ERT)(S)A 2019 (n6) s 1.
[61] Lee (n11) 463-465.

Price volatility in the carbon market is another concern. While trading provides economic efficiency, short-term fluctuations in allowance prices can create uncertainty for firms making long-term investment decisions.[62] To mitigate excessive price volatility, the UK Emissions Trading Scheme (UK ETS) incorporates market stability mechanisms, including an Auction Reserve Price (ARP),[63] which establishes a minimum auction price for allowances, and a Cost Containment Mechanism (CCM),[64] which permits regulatory intervention where allowance prices remain exceptionally high for a sustained period. However, these mechanisms are intended to address extreme market conditions rather than eliminate ordinary price fluctuations. Consequently, while they contribute to market stability and investor confidence, they do not fully remove pricing uncertainty, particularly during periods of economic disruption, changing regulatory expectations, or fluctuations in energy demand. Coupled with potential misalignment between UK ETS caps and Scotland's ambitious statutory targets, these factors may slow progress toward net-zero emissions unless carefully managed through complementary policy instruments, such as targeted subsidies, green finance mechanisms, or long-term regulatory signals.

Finally, despite strong institutional structures, Scotland's climate governance is not immune to implementation gaps. Sectoral differences in emissions intensity, regional disparities in industrial structure, and the integration of renewable energy into the grid pose ongoing challenges for policy delivery.[65] The interaction between UK-wide carbon market mechanisms and devolved statutory obligations requires careful coordination to ensure that statutory climate targets translate into measurable emissions reductions on the ground.

In conclusion, Scotland's climate governance represents a model of statutory climate constitutionalism, combining legally binding targets, carbon budgeting, institutional oversight, and market-based incentives. While participation in the UK ETS introduces constraints on devolved autonomy and exposes the system to price volatility, the overall framework demonstrates how integrated legal, institutional, and market instruments can drive ambitious climate policy. The Scottish experience offers

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[62] UK Climate Change Committee, *UK Carbon Prices and Market Stability* (2022) 21.
[63] Department for Energy Security and Net Zero, *UK Emissions Trading Scheme: A Policy Overview* (2026).
[64] UK ETS Authority, *UK Emissions Trading Scheme: Main Authority Response to the Future Markets Policy Consultation* (Department for Energy Security and Net Zero 2025).
[65] Scottish Government, *Energy and Climate Change: Sectoral Progress Report* (2023) 34–39.

valuable lessons for jurisdictions seeking to embed climate obligations within legally enforceable structures while leveraging carbon markets and finance as complementary tools for transition.

5. Energy Finance and Climate Transition

5.1 Conceptual Foundations of Energy Finance in Climate Law

Energy finance has emerged as a central pillar of contemporary climate governance, reflecting the recognition that legal commitments to decarbonisation cannot be realised without large-scale mobilisation of capital. International climate law increasingly frames finance not merely as a supporting tool but as a constitutive element of climate action. This shift is evident in Article 2(1)(c) of the Paris Agreement, which commits Parties to making financial flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.[66] This provision represents a significant normative expansion of climate obligations, extending their reach beyond environmental regulation into the domains of financial governance, investment policy, and economic planning. From a legal perspective, energy finance encompasses a diverse set of instruments and institutional arrangements, including public expenditure, development finance, private investment, blended finance, and market-based instruments (such as green bonds and sustainability-linked loans).[67] The regulatory challenge lies in aligning these financial flows with climate objectives while ensuring transparency, accountability, and environmental integrity. Jurisdictions differ markedly in their capacity to operationalise this alignment, shaped by levels of economic development, regulatory maturity, and institutional design.

5.2 Energy Finance and Climate Transition in India

India's energy transition presents one of the most complex climate finance challenges globally. Rapid economic growth, rising energy demand, and persistent developmental needs necessitate continued expansion of energy infrastructure, even as India seeks to

[66] Paris Agreement (n4) art 2(1)(c).
[67] World Bank, *State and Trends of Carbon Pricing 2024* (World Bank 2024); Asian Development Bank, *Energy Policy 2021*.

decarbonise its economy.[68] Estimates by international institutions suggest that achieving India's net-zero target by 2070 will require cumulative investment running into several trillion dollars across power generation, transmission, transport, and industrial sectors.[69] Mobilising such capital within a developing economy context places significant strain on existing financial and regulatory frameworks. Public finance plays a foundational role in India's energy transition. Budgetary allocations, viability gap funding, and public sector lending institutions provide essential risk mitigation and project development support, particularly in renewable energy. The Indian Renewable Energy Development Agency (IREDA) and the Power Finance Corporation act as specialised financial intermediaries, offering concessional loans and refinancing facilities for clean energy projects.[70] These institutions operate within a hybrid legal framework, combining statutory mandates with commercial lending practices.

Private finance has expanded rapidly in India's renewable energy sector, particularly in solar and wind power. Public–private partnerships (PPPs) have been instrumental in scaling deployment, supported by standardised power purchase agreements and competitive bidding mechanisms. However, regulatory uncertainty, grid integration challenges, and counterparty risk associated with state-owned distribution companies continue to deter investment, especially in emerging technologies such as green hydrogen and energy storage.[71] Green bonds have emerged as a prominent instrument for mobilising climate finance in India. Both corporate and sovereign issuances have been used to finance renewable energy, clean transport, and climate-resilient infrastructure. The Reserve Bank of India and the Securities and Exchange Board of India have taken steps to develop regulatory guidelines for green debt securities, enhancing disclosure and use-of-proceeds requirements.[72] Nevertheless, the absence

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[68] International Energy Agency, *India Energy Outlook 2021* (IEA 2021) 19–32; Government of India, *India's Updated First Nationally Determined Contribution under the Paris Agreement* (2022) 2–6; International Energy Agency, *World Energy Investment 2024* (IEA 2024) 191–201.
[69] International Energy Agency, *India Energy Outlook 2021* (IEA 2021) 112–120.
[70] Indian Renewable Energy Development Agency Act 1987; Power Finance Corporation Ltd, *Annual Report 2021–22* (PFC 2022) 34–38.
[71] Navroz K Dubash, 'India's Energy Transition: Institutional and Regulatory Challenges' (2022) 57 *Economic and Political Weekly* 43, 46–49.
[72] Securities and Exchange Board of India, *Disclosure Requirements for Issuance and Listing of Green Debt Securities* (SEBI 2021) paras 4–6; Reserve Bank of India, Report on Currency and Finance 2022 (RBI 2022) ch 7.

of a comprehensive national green taxonomy has raised concerns regarding greenwashing and inconsistent classification standards.

International climate finance remains critical to India's transition. Multilateral development banks and bilateral climate funds provide concessional finance, guarantees, and technical assistance. However, scholars have noted that access to international finance is often constrained by complex conditionalities and limited absorptive capacity at sub-national levels.[73] This underscores the need for stronger institutional coordination and capacity-building to translate financial commitments into effective emissions reductions.

5.3 Energy Finance and Climate Transition in Scotland

Scotland's energy finance landscape reflects the advantages of operating within a developed economy with access to mature financial markets and robust regulatory institutions. Climate objectives are integrated into public finance decision-making through statutory mandates and policy frameworks, ensuring alignment between fiscal policy and emissions reduction targets. The Climate Change (Scotland) Act 2009 requires Scottish Ministers to report on the use of resources to meet climate targets, reinforcing fiscal accountability.[74] A distinctive feature of Scotland's approach is the establishment of the Scottish National Investment Bank (SNIB) under the Scottish National Investment Bank Act 2020. The SNIB has a statutory mission to support the transition to net-zero emissions, promote inclusive growth, and foster innovation.[75] Unlike traditional development banks, the SNIB operates with an explicit climate mandate, allowing it to deploy patient capital in sectors that may be underserved by private finance. Green bonds and sustainable finance instruments form another pillar of Scotland's energy finance strategy. Although sovereign green gilt issuance occurs at the UK level, Scotland benefits indirectly through access to UK-wide capital markets and targeted funding streams.[76] Mandatory climate-related financial disclosures, initially aligned with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), further enhance transparency and risk management

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[73] Lavanya Rajamani and Shibani Ghosh, 'Developing Countries and Climate Finance' (2019) 29 *Journal of Environmental Law* 23, 35–38.
[74] CC(S)A 2009 (n6) s 33.
[75] Scottish National Investment Bank Act 2020, ss 1–3.
[76] HM Treasury, *UK Green Financing Framework* (HMT 2021) 5–9.

within the financial system.[77] At present increasingly informed by the International Sustainability Standards Board (ISSB) Standards, particularly IFRS S1 (General Requirements for Disclosure of Sustainability-related Financial Information) and IFRS S2 (Climate-related Disclosures), further enhance transparency, comparability, and climate risk management within the financial system.

Public investment in energy infrastructure is complemented by private sector participation, particularly in offshore wind and renewable technologies. Scotland's regulatory framework provides long-term policy certainty, reducing investment risk and lowering the cost of capital. However, reliance on UK-level financial regulation and market mechanisms also constrains Scotland's ability to independently tailor finance instruments to devolved policy priorities.[78]

5.4 Comparative Assessment: Legal and Regulatory Dimensions of Energy Finance

A comparative assessment of energy finance in India and Scotland reveals both convergence and divergence in regulatory approaches. The assessment of energy finance in India and Scotland is particularly valuable because the two jurisdictions represent contrasting legal and institutional approaches to climate governance. India, as a rapidly developing economy, seeks to reconcile climate objectives with economic growth and energy security, whereas Scotland, as a developed devolved jurisdiction within the United Kingdom, has adopted a more mature statutory framework for climate governance and sustainable finance. Comparing these jurisdictions provides valuable insights into how differing constitutional structures, levels of economic development, and regulatory philosophies influence the design and effectiveness of energy finance mechanisms, thereby identifying best practices and lessons that may inform future legal and policy reforms. Both jurisdictions recognise finance as a central enabler of climate transition and employ a mix of public and private instruments. However, differences in economic capacity, institutional maturity, and legal design shape divergent outcomes. India's approach is characterised by regulatory

[77] Financial Conduct Authority, *Enhancing Climate-Related Disclosures by Listed Issuers* (PS21/24, 2021) paras 2.12–2.18.
[78] Scotland Act 1998 c 46 sch 5; Aileen McHarg, *The Scottish Parliament* (2nd edn, Edinburgh University Press 2021) 88–95.

experimentation and incrementalism. Energy finance mechanisms are often introduced through executive policy and sectoral regulation, with limited statutory integration. While this flexibility facilitates rapid deployment, it also generates regulatory uncertainty and uneven enforcement. Scotland's model, by contrast, embeds climate finance within a statutory framework that emphasises accountability, transparency, and long-term alignment with emissions targets. From an environmental integrity perspective, Scotland's stronger disclosure requirements and institutional oversight reduce the risk of misaligned financial flows. India's challenge lies in developing comparable standards while maintaining accessibility to finance and supporting developmental objectives. These contrasts underscore the importance of legal design in shaping the effectiveness of energy finance as a climate governance tool.

5.5 Implications for Carbon Markets and Net-Zero Transitions

Energy finance and carbon markets are mutually reinforcing components of climate governance. Well-functioning carbon markets generate price signals that guide investment decisions, while effective energy finance mechanisms enable regulated entities to respond to these signals. In jurisdictions where finance frameworks are weak or fragmented, carbon markets risk exacerbating inequities or failing to deliver emissions reductions. For India, strengthening the legal coherence between carbon trading and energy finance will be essential to ensuring that emerging carbon markets contribute meaningfully to the net-zero transition. This may require statutory recognition of sustainable finance principles, development of a national taxonomy, and enhanced coordination between financial regulators and climate authorities. Scotland's experience demonstrates the benefits of integrating finance into climate legislation, but also highlights the constraints imposed by multi-level governance. Overall, energy finance occupies a pivotal position in the legal architecture of climate governance. Comparative insights from India and Scotland illustrate that while financial innovation is indispensable, its effectiveness ultimately depends on robust legal frameworks, institutional capacity, and alignment with international climate obligations.

6. Comparative Analysis: Doctrinal and Regulatory Perspectives

Dimension	India	Scotland
Legal Basis	Sectoral statutes and executive schemes	Comprehensive statutory framework
Carbon Market	Emerging domestic carbon market	Participation in UK ETS
Enforcement	Limited, evolving	Strong, penalty-based
Energy Finance	Rapid growth, higher risk	Mature, institutionally supported
Equity Focus	Development-oriented	Just transition emphasis

A deeper comparative doctrinal evaluation of India and Scotland's climate governance frameworks reveals that the effectiveness of climate regulation depends not merely on ambition, but on the legal architecture through which that ambition is operationalised. Scotland's model demonstrates the advantages of embedding climate objectives within binding statutory instruments, supported by institutional oversight and justiciability. The integration of emissions targets, fiscal accountability, and financial mobilisation within a single legislative framework creates regulatory coherence and enhances compliance incentives. This alignment reduces fragmentation between environmental law and financial regulation, allowing climate objectives to permeate decision-making across sectors.

India's framework, by contrast, reflects a pluralistic and evolving regulatory approach shaped by developmental imperatives. While this flexibility enables rapid policy innovation and accommodates diverse socio-economic conditions, it also generates doctrinal uncertainty. The reliance on executive policy and sector-specific regulation limits enforceability and weakens the normative force of climate commitments, particularly in relation to financial alignment under Article 2(1)(c) of the Paris Agreement. The reliance on executive policy and sector-specific regulation limits enforceability and weakens the normative force of climate commitments, particularly in relation to financial alignment under Article 2(1)(c) of the Paris Agreement, which requires Parties to make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development. Although India has introduced several sustainable finance initiatives, including the Sovereign Green Bond

Framework, the Reserve Bank of India's guidance on climate-related financial risks, and the Securities and Exchange Board of India's Business Responsibility and Sustainability Reporting (BRSR) framework, these measures are largely regulatory or policy-based rather than grounded in a comprehensive statutory framework. Consequently, financial institutions are encouraged—but generally not legally required—to align investment decisions, lending practices, or disclosure obligations with national climate objectives. This fragmented approach limits regulatory certainty, weakens accountability, and falls short of fully operationalising the finance alignment objective embodied in Article 2(1)(c) of the Paris Agreement. The absence of comprehensive statutory integration risks misalignment between climate goals and investment practices. Comparatively, these models illustrate that robust legal design is central to translating climate ambition into durable emissions reductions. The lessons emerging from Scotland and India underscore the need for climate law to function not only as environmental regulation, but as a framework governing economic and financial transformation.

7. Regulatory Challenges and Reform Proposals

Despite significant legislative and policy developments in both India and Scotland, important legal and regulatory challenges continue to impede the effective operation of carbon markets and climate finance mechanisms. This section examines the principal regulatory gaps and institutional constraints in the two jurisdictions and proposes reforms to strengthen the legal framework for achieving climate objectives. While both jurisdictions operate within the broader framework of international climate law, particularly the Paris Agreement, their regulatory choices reflect divergent constitutional structures, economic contexts, and governance philosophies. As previously mentioned, Scotland represents a model of statutory climate constitutionalism, where emissions reduction targets, carbon budgeting, and financial accountability are embedded within binding legislation. The Climate Change (Scotland) Act 2009 and its 2019 amendment exemplify how climate ambition can be translated into legally enforceable duties, supported by independent oversight and judicial review.[79] This approach enhances regulatory certainty, strengthens investor

[79] CC(S)A 2009 (n6); CC(ERT)(S)A 2019 (n6); UK Climate Change Committee, *Progress in Reducing Emissions: 2023 Report to Parliament* (CCC 2023) 12–18.

confidence, and ensures alignment between climate policy and financial decision-making. Carbon markets under the UK ETS benefit from this legal clarity, operating within a mature institutional ecosystem characterised by robust monitoring, reporting, and enforcement mechanisms.

India's climate governance framework, by contrast, reflects a model of regulatory gradualism shaped by developmental priorities and institutional diversity. Constitutional principles and judicial jurisprudence provide a strong normative foundation for environmental protection, yet climate governance remains fragmented across sectoral legislation, executive policies, and delegated regulation. The introduction of a statutory carbon market through the Energy Conservation (Amendment) Act 2022 marks a significant legal milestone, signalling a shift towards market-based climate regulation.[80] However, the absence of an overarching climate statute limits coherence and weakens the enforceability of long-term climate commitments.

From a doctrinal perspective, this comparison underscores the importance of statutory integration. Climate governance is most effective where emissions targets, carbon markets, and energy finance are embedded within a unified legal framework that clearly defines institutional responsibilities and accountability mechanisms. Scotland's experience illustrates how statutory clarity can mitigate regulatory fragmentation and enhance the environmental integrity of carbon markets. India's experience, meanwhile, highlights the risks associated with over-reliance on executive policy instruments, particularly in relation to investor protection, MRV systems, and enforcement credibility. At the same time, this analysis cautions against uncritical transplantation of regulatory models. Scotland's framework operates within a developed economy with access to mature capital markets and relatively stable institutional capacity. India's regulatory choices must account for socio-economic constraints, energy poverty, and the need for continued infrastructure expansion. Flexibility and experimentation are therefore not merely transitional features, but structural necessities within India's climate governance architecture.[81] The challenge

[80] Energy Conservation (Amendment) Act 2022 s 14A.
[81] Lavanya Rajamani, *Innovation and Experimentation in the Paris Agreement* (2016) 6 Climate Law 1, 12–15.

lies in ensuring that flexibility does not undermine legal certainty or environmental outcomes.

Normatively, this study suggests several recommendations. First, India would benefit from the adoption of a framework climate statute that consolidates emissions targets, carbon market governance, and climate finance principles. Such legislation need not impose rigid absolute caps but could provide statutory recognition to relative targets, sectoral pathways, and market-based mechanisms, thereby enhancing coherence without sacrificing developmental sensitivity. Comparative experience demonstrates that even framework legislation can significantly strengthen accountability and coordination.[82] Secondly, both jurisdictions must strengthen the legal integration between carbon markets and energy finance. Carbon pricing mechanisms are only effective when regulated entities have access to affordable finance to undertake decarbonisation investments. Statutory recognition of sustainable finance principles, including clear taxonomies and disclosure obligations, is essential to prevent greenwashing and align private capital with climate objectives. Scotland's statutory reporting duties and India's emerging green finance regulations provide useful starting points, but further harmonisation with international standards is required.[83]

Thirdly, institutional capacity and independence are critical. Effective MRV systems, independent regulators, and transparent enforcement mechanisms are indispensable to maintaining market credibility. In India, greater coordination between climate, energy, and financial regulators is necessary to avoid jurisdictional overlap and regulatory arbitrage. Scotland, while benefiting from strong institutions, must navigate the constraints of devolved governance and ensure that UK-wide mechanisms such as the UK ETS remain aligned with devolved climate ambition.[84] Finally, this comparative analysis reinforces the evolving role of climate law as a form of economic governance. Climate regulation increasingly shapes investment flows, industrial policy, and financial risk management. Legal frameworks that fail to recognise this expanded role risk rendering climate commitments aspirational rather than transformative. By contrast, jurisdictions that integrate climate objectives into the

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[82] Jacqueline Peel and Hari Osofsky, *Climate Change Litigation: Regulatory Pathways to Cleaner Energy* (CUP 2015) 87–90.
[83] Organisation for Economic Co-operation and Development, *Aligning Finance with Climate Goals* (OECD 2020) 41–45.
[84] Maria Lee, 'The UK Emissions Trading Scheme and Devolution' (2022) 34 *Journal of Environmental Law* 451, 462–465.

core of legal and financial systems are better positioned to deliver durable emissions reductions consistent with global climate goals.

In conclusion, the experiences of India and Scotland illustrate that climate governance is not a question of ambition alone, but of legal structure. Carbon markets and energy finance can serve as powerful instruments of climate transition, but only when supported by coherent, enforceable, and context-sensitive legal frameworks. As climate law continues to evolve, comparative insights of this nature are essential to informing regulatory design that is both effective and equitable.

Conclusion

This comparative analysis of climate change law and governance in India and Scotland demonstrates that the effectiveness of carbon markets and energy finance mechanisms depends less on the ambition of climate commitments and more on the legal structures through which those commitments are implemented. While both jurisdictions operate within the international framework of the Paris Agreement, their domestic approaches reflect fundamentally different constitutional arrangements, economic capacities, and regulatory philosophies.

Scotland's climate regime exemplifies the advantages of statutory clarity and enforceability. Legally binding emissions targets, institutional oversight, and integrated climate finance obligations create regulatory coherence and enhance accountability. This legal certainty strengthens investor confidence and supports the effective operation of carbon markets within a mature governance framework. India's approach, by contrast, reflects regulatory gradualism shaped by developmental priorities and institutional diversity. Although constitutional jurisprudence provides a strong normative foundation, the absence of a comprehensive climate statute results in fragmented governance and weaker enforceability, particularly in relation to carbon markets and sustainable finance.

The comparison underscores that climate governance is most effective when emissions regulation, market mechanisms, and financial mobilisation are integrated within a coherent legal framework. At the same time, regulatory models must remain sensitive to national circumstances. Ultimately, carbon trading and energy finance can serve as

transformative tools for climate mitigation only when supported by context-appropriate, legally robust, and institutionally credible frameworks.

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A Certain Flexibility: A Comparative Analysis of UK and EU Space Debris Mitigation Regulation

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Abstract

With the rapid development of large-scale commercial space activity in what is being called the New Space era, regulators are having to grapple with an escalating threat to the orbital environment: the accumulation of space debris. Debris-related risks are self-reinforcing as collisions between debris and other objects themselves generate more debris. The result is a non-linear risk profile with projected tipping points known as Kessler events.[2] In such an event, cascading collisions result in clouds of debris that have the potential to render entire areas of orbital space unusable. This paper analyses how regulatory tools are used to determine, structure, and assess debris mitigation and its broader operational and environmental trade-offs, as well as how these choices affect the certainty of sustainability outcomes and the flexibility to develop and incorporate new understandings in space.

Keywords: civil aviation authority, debris mitigation, European Union, orbital environment, space debris, space regulation, space sustainability, United Kingdom

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[2] Kessler DJ and Cour-Palais BG, *Collision Frequency of Artificial Satellites: The Creation of a Debris Belt* (1978) 83(A6) Journal of Geophysical Research 2637 https://doi.org/10.1029/ja083ia06p02637.

Introduction

Orbital space is a global common, the governance of which was developed to negotiate between state actors, rather than private operators.[3] As a result, there is an absence of private liability mechanisms that limits the potential for market-driven solutions to debris mitigation regulation. In the short term, the economic benefit of satellite proliferation outweighs the diffuse cost of debris hazards. The result is that debris mitigation becomes a matter of regulation, with international standards developed for interagency agreements being applied as 'soft law' guidelines to private operators.[4]

Approaches to the regulation of emerging technologies must strike a balance between regulatory certainty and flexibility. Regulation must provide certainty to operators in what compliance requires, certainty in the risk mitigation it produces, and certainty in the future direction of regulation. At the same time, it must provide the flexibility to accommodate technological developments, flexibility to ensure proportionality, and flexibility to adapt to new understandings of risk. This article builds on the comparative analysis of two regimes trying to resolve this central certainty-flexibility tension, undertaken in *Debris Mitigation Regulation for the EU and the UK*,[5] a report completed as part of the Wayfarer Programme for Sustainability of Space.[6] The UK regulatory regime uses a principles-based approach, and requires operators to show that they have reduced risk 'As Low As Reasonably Practicable' (ALARP).[7] Enforced and regulated by the UK's Civil Aviation Authority ("CAA"), the UK's licensing requirements are non-prescriptive, and compliance is determined through case-by-case assessment (as opposed to being defined in advance). The proposed EU Space Act[8] takes a prescriptive approach to space regulation. The Act details technically specific thresholds and methodologies as compliance requirements, all of which fall under the EU Commission's ownership.

The compromises that each regulatory regime makes regarding this balance reveal gaps where neither fully provides the certainty or flexibility required for the challenge of space debris. In attempting to cover these gaps within the UK regime, the report makes four recommendations for reform. Taken as a package, the recommendations

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[3] P Jankowitsch, *The Background and History of Space Law*, Handbook of Space Law (2015), Edward Elgar Publishing https://www.elgaronline.com/edcollchap/edcoll/9781781000359/9781781000359.00010.xml.

[4] ibid

[5] Joshua Goodland and Andrew Iwanoczko, Debris Mitigation Regulation for the EU and the UK (Sustainability of Space 2026) https://www.sustainabilityof.space/post/debris-mitigation-regulation-for-the-eu-and-the-uk accessed 14 September 2026.

[6] Sustainability Of Space, Wayfarer Programme, https://www.sustainabilityof.space/post/wayfarer-programme-professional-development-for-early-career-graduates.

[7] Civil Aviation Authority, 'Guidance for Orbital Operator licence applicants and licensees' CAP2210 3rd edn (2026), <https://www.caa.co.uk/publication/download/18909> accessed 27 May 2026.

[8] European Commission, 'Proposal for a Regulation of The European Parliament and of The Council on the Safety, Resilience and Sustainability of Space Activities in The Union', COM 335 final (2025) <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52025PC0335> accessed 27 May 2026.

represent a furthering of the UK's outcomes-based proportional approach to space regulation that reveals a broader question: what are the appropriate legal and regulatory tools for enacting agile and adaptive regulatory frameworks at the scale of national licensing? Importantly, the recommendations of the report emerge from the comparative analysis itself, rather than from an application of a pre-existing framework. This article aims to surface the questions the report raises in its attempt to address the gaps identified in the UK regime's existing approach.

The second tension explored in the report involves the integration or isolation of debris mitigation within licensing/approval submissions and assessments. While secondary in this article, it has its own implications for the certainty and flexibility of each regime.

The Two Regimes

The proposed EU Space Act and the current UK regulatory regime offer a productive comparison for identifying how different approaches to resolving the tension of certainty and flexibility impact a specific environmental risk. The proposed Act aims to incorporate prescriptive requirements, defined timelines and ex-post data collection to ensure regulatory certainty. The current UK regime uses a principles-based approach, enacted through case-by-case assessments of ALARP risk reduction, to ensure regulatory flexibility. Comparing the two reveals what each loses in choosing to prioritise either certainty or flexibility at the expense of the other, as well as the gaps that both regimes leave open in their approach to debris mitigation.

The European Union

Proposed in June 2025, the draft EU Space Act intends to harmonise space regulation at the bloc level, unifying fragmented national regimes. Its compliance requirements are prescriptive, in some cases going as far as committing to detailed technical specifications and assessment methodologies. To adapt these requirements as the industry and its technologies develop, the Act empowers the EU Commission to produce implementing acts that amend the regulation without reopening primary legislation. [9] Prescriptive requirements of this kind provide certainty to operators about what constitutes compliance. The compromise is that in such a nascent industry, prescriptive requirements could prematurely restrict innovative technologies and novel operations. The implementing acts have the potential to mitigate this, though they depend on the Commission keeping pace with industry and as of writing, are applied on an ad hoc basis. The result is that the proposed Act risks inflexibility, which could prematurely restrict an emerging industry or even leave novel activity to operate outside of regulation.

[9] ibid, Article 104.

Debris mitigation consists of three standalone submissions, which include: a Debris Control Plan, an End-of-Life Disposal Plan and a Failure Response Plan, each with formal baseline requirements.[10] Structured this way, the three plans frame debris mitigation as a regulatory priority and ensure a consistent application of compliance standards. These submissions are likely to create more certainty in compliance and outcomes of the risk mitigation produced. Adding to this is the requirement for launch operator applicants to produce an Environmental Footprint Declaration ("EFD"), which assesses the environmental footprint of the activities being approved.[11] Datasets produced as part of this submission will be collated in a central database used to inform future policy and regulatory reform. However, the EFD gives no input into approval decisions. In fact, as of writing (May 2026) compliance only requires applicants to carry out the assessment with the Commission's chosen methodology rather than meeting specific environmental impact metrics. This risks blinding application assessments to the systems-level trade-offs that debris mitigation involves, as where the EFD data may identify them, its status as a reporting requirement means that it has no input on approval decisions. Such trade-offs could include the atmospheric effects of an end-of-life disposal mechanism or light pollution created by a tracking enabling instrument, among others. The structure of debris considerations within the Act positions the EU regime to respond to these trade-offs and the risks they may produce reactively, after approval has been granted, undermining the certainty of its risk mitigation.

Finally, the Act's compliance requirements are projected by the EU Commission's impact assessment reporting to raise upstream compliance costs to operators by three to ten percent, with the higher end of the estimate falling on small and medium sized enterprises.[12] The justification for these costs is that they are outweighed by the benefits to operators from debris mitigation, which under an illustrative scenario of 50% reduction in total space debris, the Commission projects at ~€675 million annually.[13] These benefits largely come from conserved fuel as a result of undertaking fewer avoidance manoeuvres and cybersecurity resilience leading to reduced attacks. Both benefits come during the operational phase, while the increased costs are largely imposed on manufacturing. The result is that in compromising on flexibility through proportionality, the Act risks imposing disproportionate barriers to entry on upstream SMEs.

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[10] (n8) Articles 61(2A) & Article 70(2)
[11] (n8) Article 96.
[12] The EU Commission "Impact Assessment Report Accompanying the Document Proposal for a Regulation of the European Parliament and of the Council on the Safety, Resilience and Sustainability of Space Activities in the Union", SWD 335 final (2025), Section 6.1.8, Manufacturing cost to operators. <https://defence-industry-space.ec.europa.eu/document/download/18cb5e4d-c060-4ca8-b15c-00a45cd5f61a_en?filename=SWD-Impact-assessment-report-part1.pdf> accessed 27 May 2026.
[13] ibid Table 19, Projected benefits to operators under 50% total debris reduction illustrative scenario.

The United Kingdom

The UK regulatory regime takes a principles-based ALARP approach to determining compliance, with licensing and regulation carried out by the Civil Aviation Authority (CAA).[14] Applications are assessed on a case-by-case basis, with the methodology for submissions remaining open-ended. This approach prioritises flexibility, ensuring proportionality through ALARP. It also accommodates emerging technologies and novel mission operators through case-by-case assessment. However, industry feedback shows that this flexibility comes at the cost of certainty. In 2024, the Space Regulatory Review found that operators considered the definition of 'acceptable' under ALARP 'unclear and subjective', leading to 'costs, time and delay for applicants'.[15] In 2025, the Regulatory Sandbox for Rendezvous and Proximity Operations found that novel mission operators experienced limited clarity around approvable standards, which made it difficult to navigate the licensing process.[16] Concern reached the House of Lords, who in the same year released a report calling for greater clarity and stronger strategic direction,[17] to which a 2026 government response acknowledges the need to deliver 'clarity, certainty and confidence' for space regulation.[18]

The UK regime is actively attempting to address this uncertainty. In fact, the British Standards Institution is in the process of developing two BSI Flex Standards, with more planned for the future. One sets out principles for space sustainability[19] and the other provides guidance on the environmental impacts of launch activities.[20] Unfortunately, these remain voluntary standards and are likely to be deferred to in the same way as the international standards currently suggested to operators, as outlined below. Published in December 2025, a response from the Chief Executive (CE) of the

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[14] (n7) CAA, CAP2210, Annex 1, Outlines ALARP and case-by-case assessment.
[15] Department for Science, Innovation, and Technology, 'Space Regulatory Review 2024', Annex 4.1.1, May 2024, <https://assets.publishing.service.gov.uk/media/6644d26fb7249a4c6e9d3597/space_regulatory_review_2024.pdf> accessed 27 May 2026.
[16] RPO Operators Consortium (Astroscale, ClearSpace, and D-Orbit), "Regulatory Sandbox for Rendezvous and Proximity Operation: Stage 1 Independent Report", August 2025, <https://www.gov.uk/government/publications/regulatory-sandbox-for-rendezvous-and-proximity-operations-stage-1/regulatory-sandbox-for-rendezvous-and-proximity-operations-stage-1-report>, accessed 27 May 2026.
[17] House of Lords UK Engagement with Space Committee, "The Space Economy: Act now or Lose Out", (HL 2024-2026,190), <https://publications.parliament.uk/pa/ld5901/ldselect/ldukspace/190/190.pdf> accessed 27 May 2026.
[18] Department for Science, Innovation, and Technology, 'Government Response to the House of Lords UK Engagement with Space Committee Report: The Space Economy: Act Now or Lose Out' (CP 1478, 2026), <https://www.gov.uk/government/publications/government-response-to-the-house-of-lords-uk-engagement-with-space-committee-report-the-space-economy-act-now-or-lose-out/government-response-to-the-house-of-lords-uk-engagement-with-space-committee-report-the-space-economy-act-now-or-lose-out> accessed 27 May 2026.
[19] British Standards Institution, "Space Sustainability: Overarching Principles and Framework" (BSI Flex 1969 v2.0, March 2026), <https://standardsdevelopment.bsigroup.com/projects/9026-13265> accessed 27 May 2026.
[20] British Standards Institution, Space Sustainability: Launch (BSI Flex 1971 v2.0, March 2026), <https://standardsdevelopment.bsigroup.com/projects/9026-13264> accessed 27 May 2026.

CAA to the Chair of the Regulatory Innovation Office agreed to provide commitments for the regulatory regime of the UK in 6 areas,[21] to be carried out in 2026. One of the commitments directly targets uncertainty in order to consider where clarity and transparency may aid operator compliance with licence conditions. This is to be achieved through:

- Reviewing and improving orbital licence terms, conditions and reporting requirements, and publishing licence templates for orbital activities.
- Publishing its regulatory objectives.
- Working with His Majesty's Government to embed mechanisms to get timely HMG policy clarity on issues which can cause regulatory delays.

Of the above, the public record shows that only one has come to fruition as of May 2026. The CAA released its spaceflight regulatory objectives in March 2026, which clarify how licensing applications are assessed (rather than what constitutes acceptable practice).[22] The objectives make clear that they are not to be used as a checklist for compliance and do not undermine the case-by-case assessment of licensing applications. This maintains a compromise of flexibility over certainty, with the CAA taking no ownership of standards in order to uphold a case-by-case approach as the default.

On a more fundamental level, the guidance offered by the CAA itself occupies a legal middle-ground. For instance, in The Space Legislation of the UK, Simmonds outlines cases from previous litigation in the UK involving guidance in other industry contexts.[23] These cases characterise the legal status of guidance as, in his words, "whilst not legally binding, guidance should be adhered to unless there is some objectively justifiable reason which legitimises departure".[24] This is effectively an ALARP approach at the level of legal instrumentation, that compounds the uncertain character of the UK regime's compliance requirements. Within the UK's licensing framework, the structure of debris mitigation submissions subordinates the "Debris Mitigation Plan" to a broader "Technical Question Set"[25] that operators are required to produce. For their contents and structure, operators are referred to non-binding

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[21] Civil Aviation Authority, "Letter from the Chief Executive of the Civil Aviation Authority to Chair of the RIO", October 2025, <https://www.gov.uk/government/publications/exchange-of-letters-between-chair-of-the-regulatory-innovation-office-and-the-chief-executive-of-the-civil-aviation-authority-21-and-22-october-2025/letter-from-the-chief-executive-of-the-civil-aviation-authority-to-chair-of-the-rio> accessed 27 May 2026.
[22] Civil Aviation Authority, 'Spaceflight Regulatory Objectives "CAP 3227, March 2026, <https://www.caa.co.uk/data-and-publications/publications/documents/content/cap3227/> accessed 27 May 2026.
[23] Alexander Simmonds, *The Space Legislation of the UK*, Studies in Space Law Vol.28, Brill, <https://discovery.dundee.ac.uk/en/publications/the-space-legislation-of-the-united-kingdom/> accessed 28 May 2026.
[24] ibid, 34.
[25] Civil Aviation Authority, "Technical Question Set (TQS): Guidance and Checklist", CAA19252, Version 2.1, 16 February 2024, <https://www.caa.co.uk/publication/download/19252> accessed 27 May 2026.

international standards, specifically the ISO 24113[26] and IADC "Debris Mitigation Guidelines".[27] Beyond this, the "Spaceflight Regulatory Objectives" are heavily weighted in their contents towards reducing the harm of launch activities. Within the objectives,[28] environmental considerations for space operators constitute one bullet point under "safety", whereas for launchers, they have a separate section. Satellite operators, therefore, do not appear to be required to deliver the same depth of operational detail needed to evidence the high bar of environmental compliance that launch operators are. The result is that debris mitigation is under-signalled as a regulatory priority and debris considerations are isolated from the trade-offs they involve. As explained above, debris mitigation practices often involve their own environmental or operational impacts. These trade-offs depend on still developing understandings and assessing them within a broader environmental assessment of licensing applications would allow the CAA to ensure that compliance aligns with genuine sustainability before licence approval. Additionally, the reliance on case-by-case assessments of non-binding international standards, while reflective of the early-stage national industry, means that the CAA risks upholding an inconsistent standard of practice and obscuring aggregate assessments of its sustainability outcomes. The result of this is a regulatory approach that creates uncertainty for operators, uncertainty in its direction and uncertainty of its outcomes.

What the Comparison Revealed

The Gaps

The comparative analysis of the report revealed gaps not only in the regulatory approach to debris mitigation of the UK regime as compared to the proposed EU Space Act but also gaps that neither regime covers. The UK's deference to international standards, assessed on a case-by-case basis in legally uncertain guidance, leaves debris mitigation regulation in a place where its direction, expectations, enforcement and assessment remain uncertain. The proposed EU Space Act provides certainty in debris mitigation through a clear regulatory direction and binding prescriptive requirements. However, its adaptive measures, the implementing acts and the EFD database, provide only a reactive mechanism for flexibility.

The impact is that, despite different compromises the two regimes create a similar disproportionality for SMEs and operators of novel missions, both are often credited with making valuable contributions to space sector innovation. Providing SMEs and

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[26] International Organization for Standardization, "Space Systems - Space Debris Mitigation Requirements", ISO 24113:2023, 4th edition. (2023), <https://www.iso.org/standard/83494.html> accessed 27 May 2026.
[27] Inter-Agency Space Debris Committee, IADC, 'Space Debris Mitigation Guidelines', (IADC-02-01 Rev 4, January 2025); CAA Technical Question Set Guidance (n25), Pg4, Section Guidance 6) Sustainability.
[28] (n22).

operators of novel missions with proportional and efficient compliance pathways has the potential to enable them to grow into established market actors that drive the development of critical debris mitigation technologies forward.

The Recommendations

In attempting to resolve the identified gaps, four recommendations emerge from the comparative analysis that aim to balance the flexibility of the UK regime with the certainty required for meeting both the challenge of space debris and the needs of operators.

1. Adopt a presumed baseline standard with CAA oversight

To provide certainty around compliance requirements and ensure consistent application, the CAA should adopt presumed baseline standards into its licensing framework. While these could be adopted from the third-party standards currently deferred to, they would fall under CAA ownership. This would make the standards nationally-binding and allow them to be changed independent of international practice. To maintain flexibility, case-by-case assessment would be retained for novel missions where the presumed standards may be inapplicable. For example, thresholds for maintaining distance between satellites may not be appropriate for satellites designed for in-orbit repairs.

2. Articulate a formal regulatory trajectory and responsive reform structure

The second recommendation argues for the development of a formal regulatory trajectory, one that remains flexible and responsive to the developing industry. This may be achieved through a structured cycle of feedback and reform such as an annual forum. Doing so would enable the CAA to monitor international best practice, communicate changes in compliance requirements to the industry in advance, and respond to emerging technologies without losing strategic direction. Creating a planned and regular cycle of reform means that operators can build patterns of feedback with regulators that grow the CAA's tacit industry understanding. Combined with Recommendation 1, this approach uncouples the UK's compliance standards from the pace of international development, providing flexibility that has the potential to position the UK as a leader of international best practice, while maintaining the certainty necessary for operators to undertake long-term planning.

3. Introduce a standalone debris mitigation submission to the licensing requirements

The UK regime's debris requirements are currently too fragmented and subordinated within licensing submissions to frame debris mitigation appropriately as a regulatory priority. This recommendation proposes elevating the current "Debris Mitigation Plan" into a standalone submission that covers the full mission lifecycle, complete with presumed baseline requirements outlined in Recommendation 1. Flexibility is

maintained by leaving the technologies and methodologies for achieving its requirements open and keeping standards up to date through Recommendation 2. The certainty of a baseline standard enables the aggregate assessment of sector-scale mitigation outcomes and allows the UK to demonstrate the efficacy of its principles-based approach. This is further enabled by integrating the standalone plans output into an assessment of the broader environmental trade-offs that mitigation involves, as outlined in Recommendation 4. In practice, this approach ensures that where current understanding considers one mitigation practice preferable (such as atmospheric burnup for disposal), its impacts are identified and best practice can change as understandings develop (if burnup is discovered to have unacceptable atmospheric effects).

4. Develop a systems-level environmental impact assessment within licensing decisions

Assessing debris mitigation in isolation risks obscuring existing systemic challenges that emerge from its broader environmental and operational impacts. This recommendation proposes integrating debris considerations within a system-level environmental assessment that weighs them holistically against the operational and environmental trade-offs they involve. Unlike the proposed EU Space Act, which limits such an assessment to reporting, this approach enables the CAA to act pre-emptively against system-level risks, as the assessment informs licensing decisions. Through ALARP methodology, the acceptability of trade-offs can be adapted for various mission architectures, with the CAA releasing guidance on how trade-offs are weighed against one another. This preserves principles-led flexibility, while ensuring that debris mitigation neither overrides nor becomes subordinated to other operational and environmental considerations, ultimately ensuring certainty in the regime's sustainability outcomes.

Discussion

The UK regime developed against a backdrop of an explicitly principles-led and outcomes-based regulatory ideology. The term "agile", used by both the Government[29] and Regulator,[30] defines the ambition for flexibility at the core of the CAA's approach to space regulation. This approach is an exemplar of "Agile regulation" as outlined by the WEF,[31] a framework that shares characteristics with "adaptive regulation"[32] and

[29] (n15), DSIT 2024 Space Regulatory Review.
[30] (n21), Letter from the Chief Executive of the CAA to ROI.
[31] World Economic Forum. 'Agile Regulation for the Fourth Industrial Revolution A Toolkit for Regulators' (2020), <https://www.weforum.org/about/agile-regulation-for-the-fourth-industrial-revolution-a-toolkit-for-regulators/> accessed 27 May 2026.
[32] T Schrepel, 'Adaptive Regulation' (March 2026) European Journal of Risk Regulation, First View, Pg.1-27, <https://www.cambridge.org/core/journals/european-journal-of-risk-regulation/article/adaptive-regulation/10984D9EE8FE563187E0F28AB31FA6EA> accessed 27 May 2026.

"adaptive governance"[33], similar frameworks with origins in policy, law and technology studies literature across a number of contexts.[34] Particularly environmental governance[35] and emerging technologies.[36] Taken as a package, the reforms recommended in the report could be placed within the literature as a Planned Adaptive Regulation framework.[37] One that aims to structurally incorporate mechanisms of feedback and reform into formal requirements that provide both the certainty and flexibility necessary to support adaptive processes. Importantly, the recommendations emerged as a result of the analysis, rather than through application of an existing framework. Adaptive regulation has been posited for space debris governance at the international level,[38] with research projects for polycentric governance of space debris currently underway.[39] What the comparative analysis of this report touches on, however, is a broader question of what the necessary regulatory and legal tools are to achieve successful governance of space debris at the national scale. In 2020, Oltrogge and Christensen[40] outlined a broad holistic view of the international space governance system, including a discussion of the US national regime, that comes close to the question. This overview explores the role of non-

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[33] S Hatfield-Dodds, R Nelson and DC Cook 'Adaptive Governance: An Introduction and Implications for Public Policy' (paper presented at the 51st Annual conference of the Australian Agricultural and Resource Economics Society, Queenstown, New Zealand, 13-16 February 2007) <https://www.researchgate.net/profile/Steve-Hatfield-Dodds/publication/23507987_Adaptive_Governance_An_Introduction_and_Implications_for_Public_Policy/links/0f31753c70b6571a3c000000/Adaptive-Governance-An-Introduction-and-Implications-for-Public-Policy.pdf> accessed 27 May 2026.

[34] BC Chaffin, H Gosnell, and BA Cosens, 'A Decade of Adaptive Governance Scholarship: Synthesis and Future Directions', (2014) Ecology & Society 19(3) Art. 56, <https://www.ecologyandsociety.org/vol19/iss3/art56/> accessed 27 May 2026.

[35] LE McCray, KA Oye, and AC Petersen, 'Planned Adaptation in Risk Regulation: An Initial Survey of US Environmental, Health, and Safety Regulation', (2010) 77(6) Technological Forecasting and Social Change, Pg.951-959, <https://www.sciencedirect.com/science/article/pii/S0040162509001942?via%3Dihub> accessed 27 May 2026.

[36] L I Brass, JH Sowell, 'Adaptive Governance for the Internet of Things: Coping with Emerging Security Risks' (2020) Regulation and Governance 15(4) Pg.1092-1110, <https://onlinelibrary.wiley.com/doi/10.1111/rego.12343> accessed: 27/05/2026; GN Mandel, "Regulating Emerging Technologies", (2015) Law, Innovation and Technology 1(1) Pg.75-92, <https://www.tandfonline.com/doi/abs/10.1080/17579961.2009.11428365> Accessed: 27/05/2026.

[37] International Risk Governance Council, 'A Short Introduction to Planned Adaptive Regulation', (IRGC, November 2015), <https://irgc.org/wp-content/uploads/2018/09/A_short_introdution_to_Planned_Adaptive_Risk_Regulation-19Nov15.pdf> accessed: 27 May 2026.

[38] OF Keles, 'Telecommunications and Space Debris: Adaptive Regulation Beyond Earth', (2023) Telecommunications Policy 47(3), <https://www.sciencedirect.com/science/article/abs/pii/S0308596123000289?via%3Dihub> accessed 27 May 2026.

[39] JF Morin, C Couette, 'The Missing Ingredient for a Polycentric Governance System of Orbital Debris', (2025) Global Environmental Politics 25(2), <https://direct.mit.edu/glep/article/25/2/1/128618/The-Missing-Ingredients-for-a-Polycentric> accessed: 27/05/2026; Université Laval, Ongoing Projects, <https://www.chaire-epi.ulaval.ca/en/ongoing-projects> accessed 27 May 2026.

[40] DL Oltrogge, IA Christensen, 'Space Governance in the New space Era', (2020) Journal of Space Safety Engineering 7(3) Pg.432-438, <https://www.sciencedirect.com/science/article/pii/S2468896720300550?via%3Dihub> accessed 27 May 2026.

binding international standards and national regulatory regimes, which they characterise as 'play[ing] a pivotal pre-flight role in ensur[ing] sustainable satellite designs and space operations within the international orbital debris mitigation framework'.[41] Previous work by Migaud[42] identifies policy tools for addressing debris mitigation within the US, showing a parallel example of national-scale regulatory analysis for debris mitigation, but follows it with an international application of an adaptive governance framework.[43] What appears to be absent from the literature is an assessment and analysis of the UK's regulatory regime for space (and within that, debris mitigation specifically) through the lens of agile or adaptive governance frameworks. Such a study may provide valuable insight into how these frameworks can be translated into national-scale regulatory tools and mechanisms that could help to ensure the UK's success in its approach to space debris mitigation.

Conclusion

The UK regulatory regime is currently having a reform moment. Industry, government and regulator publications make it clear that uncertainty has spurred change. What this reform should look like is the question that the comparative report provokes and that this article poses. The Chief Executive of the CAA has committed to reducing uncertainty through licensing templates, regulatory objectives and clearer licensing terms.[44] As seen with the regulatory objectives, these do not necessarily address the structural uncertainty embedded in the CAA's regulatory framework. If reforms continue to be centred around the efficiency of regulation over its certainty, then the risks to debris mitigation, operator and investor confidence, and the success of emerging technologies will remain. In more mature industries such risks may be less acute, and regulators could have time to catch up. For the space industry, emerging markets, technologies and risks are moving at a speed that demands a flexible approach to regulation that refuses to compromise on certainty.

The analysis presented in the *Debris Mitigation Regulation* for the EU and the UK, and its resulting recommendations, act as a case study in how the regulatory tools chosen to implement an agile or adaptive regulatory approach translate to specific outcomes for national-scale space debris mitigation. As it stands, the report shows that the UK's application of an agile regulatory approach has failed to deliver the certainty that both operators and the challenge of space debris require, and the four recommendations put forward identify specific regulatory and legal tools that could

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[41] ibid, Section 5.5.
[42] MR Migaud, 'Protecting Earth's Orbital Environment: Policy Tools for Combating Space Debris', (2020) Space Policy 52, <https://www.sciencedirect.com/science/article/abs/pii/S0265964619300566?via%3Dihub> accessed: 27 May 2026.
[43] MR Migaud, RA Greer, JB Bullock, 'Developing an Adaptive Space Governance Framework', (2021) Space Policy 55, <https://www.sciencedirect.com/science/article/abs/pii/S0265964620300424?via%3Dihub> accessed 27 May 2026.
[44] (n21), Letter from the Chief Executive of the CAA to ROI.

close this gap. Further study should attempt to place the UK regime's approach to space regulation within the adaptive regulation literature; drawing on established models and previous case studies to identify what policy solutions, regulatory mechanisms and legal instruments are available to effectively balance certainty and flexibility in the UK's regulatory approach. Combined, non-linear debris risk and rapid commercial expansion without clear and enforced protocols and minimum standards mean that the choices made by regulators now will shape the future of the UK space industry and the orbital environment. What the analysis outlined in this article suggests is that flexibility without certainty is not agile or adaptive, it is aimless.

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Trees Can't Sue (Yet): Impediments to Rights of Nature in Anglo-American Juridical Systems

Ellie Twist[1]

Abstract

This paper examines how Lockean concepts of private property fundamentally impede the integration of Rights of Nature (RoN) within Anglo-American legal systems. Despite mounting ecological crises and the inadequacy of conventional environmental governance frameworks, attempts to grant legal personhood to natural entities remain constrained by Lockean anthropocentric legal traditions that conceptualise nature primarily as property.

Through critical analysis of legal pluralism and evolving personhood conceptualisations, the research highlights structural barriers to meaningful ecological protection. Case studies — including New Zealand's Whanganui River and India's Ganges and Yamuna Rivers — reveal a paradoxical pattern: initiatives celebrated as ecocentric innovations often reproduce the very anthropocentric hierarchies they aim to challenge. Through critical analysis of legal personhood, this paper identifies some key impediments: the subject/object dichotomy that is embedded in Anglo-American jurisprudence, jurisdictional fragmentation that fails to accommodate the transboundary nature of ecological systems as well as fundamental rights clashes between newly recognised natural entities and entrenched property interests. These barriers are, in part, the result of Lockean frameworks requiring human-like cognitive capacities for legal recognition.

While RoN movements have achieved limited recognition through legal pluralism and personhood mechanisms, they operate within epistemic constraints that systematically marginalise non-anthropocentric understandings. The research concludes that without addressing foundational Lockean principles underpinning Anglo-American juridical systems, RoN initiatives risk reinforcing the anthropocentric paradigm they seek to challenge, rendering them symbolic rather than substantively transformative.

Key words: John Locke, jurisprudence, personhood, property rights, rights of nature

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'If Justice Douglas has his
way-O Come not that
dreadful day-we'll be sued
by lakes and hills Seeking a
redress of ills

Great Mountain peaks of name
prestigious will suddenly become
litigious

Our brooks will babble in the courts,
Seeking damages for torts

How can I rest beneath a
tree If it may soon be
suing me? Or enjoy the
playful porpoise

While it's seeking habeas corpus?

Every beast within his paws
will clutch an order to show
cause the courts besieged on
every hand, will crowd with
suits by chunks of land.

Ah! But vengeance will be sweet
since this must be a two-way
street. I'll promptly sue my
neighbour's tree for shedding all
its leaves on me.'

- John M. Naff, Jr.

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Introduction

The global ecological crisis presents an unprecedented challenge to contemporary legal systems. Ecological integrity perches upon an unstable precipice, destabilised by anthropogenic perturbations. Fragments of environmental uncertainty cascade like lithic debris, incrementally eroding the structural integrity of interconnected ecological networks. Institutional environmental governance — increasingly characterised by regulatory entropy — accelerates the progressive marginalisation of ecological resilience, systematically undermining the mechanisms that sustain planetary biodiversity.

This is the modern story of ecological decline, denoted by managerial legal systems that place human interests above all else. This story succeeds centuries — millennia — of previous ecological decline, distinguished by human abilities to fundamentally alter their immediate environments to their needs and desires. Ecological manipulation and subsequent decline are universal throughout human history — whether observing Indigenous communities on the early modern North American Great Plains, Casarabe communities in the mediaeval Amazon or the pre-Holocene megafauna-hunting communities across the world.[2]

This trajectory of decline faced a marked acceleration in the late early modern and modern historical periods (from roughly 1700 to the present day).[3] This acceleration has been interrogated by legal scholars, historians, economists and philosophers alike, concluding that its sources are multifarious and hard to pin down — shifting economic incentives are often the primary point of blame.[4] Shifting legal traditions, though, are often pinpointed too — in particular, how shifting traditions, particularly human and non-human relations, were embedded in legal systems and subsequently enforced.[5] It is in this context that contemporary environmental law enters the fray, seeking to arrest a seemingly unstoppable trajectory that fundamentally prioritises the needs of

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[2] Pekka Hämäläinen, Indigenous Continent: The Epic Contest for North America (Liveright 2022); Heiko Prümers et al, 'Lidar reveals pre-Hispanic low-density urbanism in the Bolivian Amazon' (2022) Nature 606 325; Jens-Christian Svenning et al, 'The Late-Quaternary megafauna extinctions: Patterns, causes, ecological consequences and implications for ecosystem management in the Anthropocene' (2024) Cambridge Prisms: Extinction 2 1.

[3] Dipesh Chakrabarty, 'The Climate of History: Four Theses' [2009] Critical Inquiry 35(2) 197.

[4] Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming (Verso 2016); Andreas Malm, The Progress of This Storm: Nature and Society in a Warming World* (Verso 2018).

[5] Kirsten Anker et al, *From Environmental to Ecological Law* (Routledge 2022).

humankind over other species and ecosystems. Today, the limited efficacy of environmental law has long been recognised.[6] These limitations are particularly evident in Anglo-American legal systems, where environmental governance remains embedded within private property norms, which entrench an economic-first model in environmental governance structures.[7] Concomitantly, mounting research evidences that humankind is exceeding 'planetary boundaries', which at present maintain stable, 'Holocene-like' conditions that provide for basic planetary wellbeing.[8]

Rights of Nature

Legal scholars have sought and continue to seek innovative corresponding solutions. One such broad-based and multifarious solution is Rights of Nature (RoN) — the idea of granting ecosystems or species rights, and often legal personhood, to give them greater standing in and thereby protection under law. Expressed by initiatives like the River Ouse in the UK today, traced back to its roots, the RoN movement can be seen in both Indigenous cosmologies and ecological thinking.[9] It has been suggested that it may be viewed as a "form of legal hybrid; the result of transnational interactions between Indigenous cosmologies and Western rights-based ecocentric philosophy on non-human subjectivity."[10]

Christopher Stone's renowned article, '*Should Trees Have Standing?*'[11] — which suggested granting rights to natural entities, can be regarded as the Western philosophical launchpad on which literature on the subject amassed.[12] Writings were underpinned by a normative foundation that human law must serve the Earth's entire system, both humans and natural entities.[13] For the purposes of this paper, RoN is

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[6] Vito De Lucia, 'Beyond Anthropocentrism and Ecocentrism: A Biopolitical Reading of Environmental Law' [2017] 8 Journal of human rights and the environment 181, 182.
[7] Bonnie Holligan, Helen Dancer and Helena Howe, UK Earth Law Judgments: Reimagining Law for People and Planet (Bloomsbury Academic 2024) 10; Anu Lähteenmäki-Uutela et al, 'Legal rights of private property owners vs. sustainability transitions?' (2021) 323 Journal of Cleaner Production 1.
[8] Will Steffen et al. 'Trajectories of the Earth System in the Anthropocene' [2018] 115 PNAS 8252, 8252.
[9] Thomas Berry, The Great Work: Our Way into the Future (Three Rivers Press, 1999).
[10] Bonnie Holligan (n7).
[11] Christopher D. Stone, *Should Trees Have Standing? Law, Morality, and the Environment* (3rd ed., Oxford University Press 2010).
[12] Thomas Berry (n9); Cormac Cullinan, *Wild Law a Manifesto for Earth Justice* (2nd ed. Green Books 2011).
[13] Thomas Berry (n9); By 'natural entities' I am referring broadly to physical environmental entities and their accompanying ecosystems. Example: a river.

conceptualised broadly as the positioning of ecocentric values at the core of environmental adjudication. This framework derives substantially from the scholarly work of Godofredo Stutzin, a jurist based in Chile — published contemporaneously to Stone's seminal work. Stutzin, who maintained a personal commitment to environmental preservation, posited that RoN represent an ecocentric evolution in legal history.[14] He characterised them as a response to what he termed an 'ecological imperative'.[15] Stutzin contended that conferring rights upon nature necessarily 'implies overcoming the anthropocentric bias of law'.[16] This ostensibly straightforward formulation has yielded significant implications for the conceptualisation of nature's rights, and consequently, for the drafting of their legal provisions. The central thesis of Stutzin's argument — advocating a fundamental paradigmatic shift towards ecocentrism — suggests that the conferral of legal rights upon nature constitutes a requisite mechanism for solving environmental challenges.[17] This has been echoed in more recent literature like Jasper Mühre's '*Rights of Nature in Liberal Legal Systems and International Law'*, where Mühre encourages lawyers to shift towards using rights and personhood to reverse ecological decline.[18]

In 1972, RoN appeared in practice in the United States and can be seen in the dissenting judgment of Justice William O. Douglas in *Sierra Club v. Morton* 1972. In this judgment, O. Douglas made an attempt to confer judicial rights upon "environmental objects".[19] The movement continued gaining traction until 2008, when a substantial move from theoretical concept to legal reality was made through incorporation in Ecuador's revised Constitution. Its Articles outline the rights of ecosystems and their constituent species to protection against harm, but also the rights these ecosystems and their constituent species have to restoration following historical harm.[20] More recent examples which followed off the back of Ecuador's approach include New Zealand's Whanganui River, Spain's Mar Menor Lagoon, and India's

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[14] Mihnea Tănăsescu, *Understanding the Rights of Nature: A Critical Introduction* (Bielefeld: Transcript Verlag 2022) 24.
[15] ibid 25.
[16] Mihnea Tănăsescu (n14) 25.
[17] Mihnea Tănăsescu (n14) 25.
[18] Jasper Mührel, *Rights of Nature in Liberal Legal Systems and International Law Beyond Legal Anthropocentrism* (1st ed. Springer Nature Switzerland 2024) 11.
[19] *Sierra Club v Morton* 405 US 727 [1972] [741]-[743].
[20] Constitution of the Republic of Ecuador 2008 arts 71-74 recognise the inalienable rights of ecosystems to exist and flourish, give people the authority to petition on the behalf of nature, and require the government to remedy violations of these rights.

Ganges and Yamuna Rivers respectively. Against these diverse legal, political, and cultural backgrounds, RoN litigation demonstrates a consistent underlying objective: to leverage legal mechanisms as instruments to enhance environmental protection and foster symbiotic and ecologically sustainable human-non-human coexistence.[21] These legal mechanisms are mostly encapsulated in two threads: legal pluralism — the idea that competing legal ontologies and authorities can and should exist concurrently — and legal personhood, the idea of granting non-human actors — whether animate or inanimate — the privileges personhood affords.

The RoN movement, while gaining traction globally, faces resistance within systems historically anchored in anthropocentric property rights — Anglo-American legal systems in particular. This resistance manifests in questions of standing — whereby traditional requirements for legal personhood conflict with novel attempts to represent natural entities in court — and in the incorporation of multiple legal traditions. These intersecting challenges are especially evident in jurisdictions attempting to bridge Indigenous perspectives with common law frameworks, highlighting both the possibilities and limitations of integrating RoN within existing legal structures. The lack of uptake amongst Anglo-American countries in the Global North is notable.[22]

In 2024, at a UN conference in Nairobi, a UK delegate expressed the country's firm opposition to the application of RoN, asserting that rights could only be held by humans and that this was "a fundamental principle for the UK and one from which we cannot deviate".[23]

John Locke and Property Rights

This principle, and the school of thought it stems from, is partly derived from Lockean principles of property rights. Within early modern Anglo-American ontological systems, property was conceptualised as an inalienable right embedded within the

[21] Jasper Mührel (n18).
[22] Jasper Mührel (n18).
[23] Jonathan Watts, 'UK government can never accept idea nature has rights, delegate tells UN' (The Guardian 22 February 2024) <https://amp.theguardian.com/environment/2024/feb/22/uk-government-can-never-accept-idea-nature-has-rights-delegate-t ells-un> accessed 2 February 2025; Please note that what is meant by 'nature having rights' varies between contexts — this will be explored throughout the paper.

metaphysical architecture of the Christian God, wherein human possession functioned as a mediating force between terrestrial and celestial spheres, fostering a symbiotic relationship between human agency and natural processes.[24] It wasn't until the eighteenth century that property started being conceived of as individual dominion over discrete objects. This shift associated property with individuals' rights to a greater degree, culminating in a legal concept that artificially demarcated between private and collective interests, independent of environmental values.[25] Thus, the view of the natural environment shifted from external to property rights, to "an object of [economically productive] ownership itself".[26]

Established on the core assumption that each human has ownership over their own body and exists originally in an environment free of ownership, Locke's claim legitimises the need for labour.[27] This is characterised by the altering of an entity from its original undifferentiated form in nature, and in doing so constructs a basis for the acquisition of property. There is no requirement for the consent of others, not least non-human beings.[28]

This relationship with the environment has been linked with our current and previous trajectories of ecological decline; a contested, but nevertheless valuable understanding of the way in which our earth systems have been, and continue to be, shaped.[29] To put it differently, Lockean labour and property-centric human relations with their environments turned the human collective into an 'anthropocenic' planetary force — dualistically external to the natural world.[30] This wholesale change in relationship drastically altered the scale of ecological manipulation and subsequent decline. During the Holocene, environmental problems could typically be characterised as isolated happenings, like the deforestation of a woodland in a particular region. The effects of this were mostly local: erosion, increased flood risk and losses of habitat. Through the lens of the Anthropocene, these local issues became global: disrupted water cycles and

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[24] Sean Coyle and Karen Morrow, *The Philosophical Foundations of Environmental Law: Property, Rights and Nature* (Hart 2004) 213 103.
[25] ibid 104.
[26] Sean Coyle (n24).
[27] John Locke, Peter Laslett (ed), *Two Treatises of Government* (Cambridge University Press 1988) 287, §27.
[28] Scott Veitch et al, *Jurisprudence: Themes and Concepts* (3rd ed, Routledge 2018) 25.
[29] Jasper Mühre l (n18) 3; Clive Hamilton, Jacques Grinevald, 'Was the Anthropocene anticipated?' (2015) 2(1) Anthropocene Rev 59.
[30] Julia Adeney Thomas, Mark Williams, Jan Zalasiewicz, The Anthropocene: a multidisciplinary approach (Polity Press, Cambridge 2020) 133.

higher greenhouse gas emissions from land-use conversion; disrupted silt flows in watercourses. This emphasis on interconnection and scale allows us to view the isolated results of human activity as symptoms of a greater, systemic problem.[31] It is in this vein that law (and Lockean-derived property rights) can be viewed as cultural and political institutions that have part-morphed the relationship between humanity and the natural world.[32] Law itself has not cut down ancient trees or eroded hillsides, but as a social practice, Lockean-derived property rights have shaped human relationships with natural entities to be reductive and exploitative.[33] As Garver suggests:

> "Law (...) encodes many of the most hard-wired aspects of the ecologically destructive behaviors in the world's dominant societies and the global networks of power, governance, trade and information exchange that they have assembled and largely control. Law converts moral leanings and suggestions into enforceable requirements, prohibitions, freedoms and rights, and so laws have particular force ecologically."[34]

Anglo-American legal systems, adding to Garver's characterisation are, in turn, encoded by Lockean notions of property and exploitation:

> "Whatsoever then he removes out of the State that Nature hath provided, and left it in, he hath mixed his Labour with, and joined to it something that is his own, and thereby makes it his property."[35]

This process, according to Locke, is natural. It is the process of "altering a thing from its original indistinct condition in nature", creating the basis for property acquisition under the social contract with the state — which justified this exploitation through its enforced legal systems in the first place.[36] Locke did, though, mitigate this absolute right, claiming that "where there is enough" —

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[31] Jasper Mührel (n18) 2.
[32] Jasper Mührel (n18) 8 and 9.
[33] Jasper Mührel (n18) 8 and 9.
[34] Geoffrey Garver, *Ecological law and the planetary crisis: a legal guide for harmony on Earth* (Routledge 2021) 1.
[35] Scott Veitch (n28) 287, 288, §27.
[36] Scott Veitch (n28) 27.

an abundance of resources to exploit — it should be "left in common for other[s]".[37] This mitigation, in practice, was and is limited. First, those others are presumed to be human. The use or non-use of the natural world is a prescribed human activity. Second, and more importantly, the framework and logic the Lockean property rights paradigm creates makes preservation for the (human) commons difficult by default. By setting out a "contractualist device … to make property more fruitful and labour more productive", Locke formed a set of incentives that pushed human behaviours in one — very exploitative — direction.

The dualist distinction between subject and object, which emerged during the early modern period, was substantially shaped by Lockean thought too. This distinction is fastidiously maintained in Anglo-American juridical systems today, which divide concepts of legal appearance into binary classifications, of persons and things, subjects and objects, or owners and property.[38] These classifications delineate legal relationships and entities into distinct and mutually exclusive categories, thereby facilitating the systematic organisation of legal principles and frameworks. If nature becomes property through its transformation, then in its raw, unfettered state, it is extralegal. Regarding the natural world as extralegal, then, removes us from having to consider the impacts we will experience by its continued destabilisation. Furthermore, our collective decision-making becomes a balancing act of human and non-human interests; whereby environmental considerations are shelved for the enablement of property creation. In essence, Anglo-American legal systems are designed with a legal wall, artificially separating human interests from those of nature.[39] And it is this wall that RoN are trying to get through, over, or past today.

Scope & Structure

This paper, then, examines how Lockean concepts of private property create specific impediments to the integration of RoN within Anglo-American

[37] Scott Veitch (n28); John Locke (n27) 291.
[38] Jasper Mühren (n18) 105.
[39] Jasper Mühren (n18) 82.

juridical systems. It argues that despite increasing global recognition of natural entities as legal subjects, Anglo-American legal frameworks remain structurally predisposed toward part-Lockean-derived anthropocentric property regimes that fundamentally constrain meaningful ecological protection. The central thesis contends that while RoN movements represent potentially transformative approaches to environmental governance, their effectiveness within Anglo-American systems is systematically limited by deeply embedded Lockean principles that position nature primarily as a resource, rather than rights-bearer.

This paper takes a two-pronged approach to examine the juridical paradigms of RoN. Firstly, it interrogates the theoretical foundations of legal pluralism within RoN contexts and case studies, elucidating the complex intersectionality of multiple normative orders when natural entities are granted legal personhood. Secondly, it critically evaluates the ontological evolution of personhood conceptualisations and their jurisprudential implications for non-human natural entities within Anglo-American legal traditions. Through these lenses, this paper identifies socio-legal impediments to RoN integration, with emphasis on constraints emanating from entrenched Lockean property paradigms. Ultimately, this analysis contends that Anglo-American juridical systems are structurally predisposed towards the prioritisation of anthropocentric property regimes and control mechanisms. Whilst incremental juridical innovations — such as the incorporation of legal pluralism and the expansion of personhood conceptualisations — present potentially transformative pathways, it must be acknowledged that such modifications function within epistemic constraints. RoN cannot fundamentally transcend these constraints of hierarchical ordering, sovereign authority and capital accumulation — commitments which systematically marginalise non-anthropocentric and relational understandings of ecological entities. Consequently, RoN movements, though nominally progressive, ultimately operate as palliative rather than transformative interventions within a system whose theoretical underpinnings and institutional logic remain resolutely anthropocentric.

It is, however, necessary to acknowledge the limitations inherent in this paper's scope. While it is readily acknowledged that Locke's philosophical legacy transcends the Anglo-American context,[40] this paper's focus on Anglo-American jurisdictions stems from their recent case studies and the extensive body of related theoretical discourse examining the philosophical and practical implementation of RoN doctrines.

Introduction to Legal Pluralism and RoN

This section examines the complex relationship between legal pluralism and RoN movements within Anglo-American juridical frameworks. It will do so by investigating how RoN initiatives often necessitate meaningful legal pluralism to function effectively, through the examples of the Whanganui River in New Zealand and the landmark *Mabo* decision in Australia. Central to this analysis is the recognition that Anglo-American legal frameworks, grounded in Lockean concepts of property and state sovereignty, systematically resist genuine legal pluralism. Instead, they offer symbolic accommodations that preserve unitary state authority.

It is acknowledged that there are competing visions of legal pluralism, but frequently the concept has emerged through the incorporation of Indigenous ontologies and worldviews that are typically inconsistent with the juridical frameworks of the ruling (often colonising) state.[41] Theoretically, this inherent inconsistency creates a complex legal environment where multiple legal traditions coexist. Contentiously, the recognition of this plurality is not found in many Anglo-American systems, as it is viewed as having the potential to undermine state-centric authority.[42] It is also important to acknowledge that the existence or positing of legal pluralism, particularly in the form of Indigenous legal systems, does not automatically equate to the existence or

[40] John Locke (n27).
[41] This claim will be explored in greater depth in the following section.
[42] Jasper Mührel (n18) 328.

integration of RoN. It is simply that RoN are often expressed through Indigenous knowledge systems.[43]

The Importance and Limitations of Legal Pluralism for RoN

The growing acceptance and discourse around legal pluralism have strengthened RoN movements. This development has empowered Indigenous groups by recognising their "rights to distinct nationalities, self-government, and self-determination".[44] As a result, this recognition has paved the way for extending legal rights to natural entities, often under frameworks of stewardship.[45] A pluralistic legal system has been recognised as part and parcel of major, and supposedly successful, RoN examples, whether it be Ecuador's Constitution, New Zealand's Whanganui or Bolivia's *Ley de Derechos de la Madre Tierra*.[46] The term has been applied to these examples liberally, with the related claim of RoN's supposed success being linked therewith.[47] They have allegedly challenged the political economy of legal knowledge because they are culturally hybrid, as the models used combine the grammar and vocabulary of modern law with the epistemologies of Indigenous Andean and Mãori Peoples.[48] 'They are modern law and they are Indigenous law; they simultaneously "are" and "are not"'.[49]

The empirical reality of legal pluralism, if not truly meaningfully incorporated into RoN paradigms, portends a troubling outcome: processes that merely envelop or vernacularise non-state legal orders and epistemologies regarding human-Earth relationships ultimately risk perpetrating a profound dual colonisation — simultaneously subjugating both Indigenous Peoples and natural entities.[50] It should be recognised that authentic jurisprudential transformation demands not simply

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[43] Erin O'Donnell et al, 'Stop Burying the Lede: The Essential Role of Indigenous Law(s) in Creating Rights of Nature' (2020) Transnational Environmental Law 9(3) 403.
[44] J Michael Angstadt, 'Securing Access to Justice Through Environmental Courts and Tribunals: A Case in Diversity' [2016] 17 Vermont journal of environmental law 345, 349.
[45] Please see earlier discussion on Whanganui.
[46] Daniel Bonilla Maldonado, 'Global Legal Pluralism and the Rights of Nature' Research Paper No. 21/15 Max Planck Institute for Comparative and International Private Law [2023] 7, 8.
[47] ibid 7, 16.
[48] Daniel Bonilla Maldonado (n46) 14.
[49] Daniel Bonilla Maldonado (n46) 35.
[50] Helen Dancer, 'Harmony with Nature: Towards a New Deep Legal Pluralism' (2021) 53 Journal of legal pluralism and unofficial law 21, 32.

accommodation of plural legal traditions, but their substantive recognition as equal participants in ecological governance.[51]

It is also necessary to observe that meaningful legal pluralism is far from the panacea desired when establishing effective RoN. The presumption that legal pluralism inherently promotes environmental protection overlooks the heterogeneity of ecological ethics across different communities and governance systems, failing to account for the diversity of values, priorities and economic pressures that influence environmental decision-making across Indigenous communities.[52] While RoN frameworks often draw from Indigenous worldviews that emphasise human-nature interconnection, the relationship between legal pluralism and environmental outcomes is considerably more complex.[53]

The Lockean Relationship with Legal Pluralism

The Lockean conception of state sovereignty fundamentally relies on maintaining an exclusive monopoly over legitimate legal interpretation and enforcement.[54] This monopolistic claim to juridical authority, rooted in Locke's social contract theory (whereby individuals consent to transfer some of their natural rights to a single sovereign authority), becomes threatened when multiple competing sources of legal knowledge and authority emerge.[55] Indigenous legal traditions present fundamentally different ontological approaches to rights, ownership, and social organisation — destabilising the state's unitary legal standing through fostering concurrent parallel systems that contest the state's claim to unitary legal authority.[56] Under this state-based paradigm, too, Indigenous legal traditions and alternative normative orders are rendered invisible or subordinate to state legal systems, given their (often unmet) need for legitimisation thereby.

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[51] ibid 35.
[52] Adrian Albano, Els van Dongen, and Shinya Takeda, 'Legal Pluralism, Forest Conservation, and Indigenous Capitalists: The Case of the Kalanguya in Tinoc, the Philippines' [2015] 10(1) Nature and Culture 103.
[53] ibid
[54] Scott Veitch (n28) 27.
[55] Scott Veitch (n28) 67.
[56] Saskia Vermeylen, Jérémie Gilbert 'Corporations and the Duty of Care for Nature?' in Holligan et al (eds), *UK Earth Law Judgments: Reimagining Law for People and Planet* (Bloomsbury Academic 2024).

Anglo-American legal monism becomes particularly acute in environmental law, where property-centric governance dominates ecological imperatives and Indigenous legal traditions that conceptualise nature-human relations through inherently different ontological lenses.[57] Equally, legal pluralism fundamentally challenges the Lockean paradigm of private property that historically privileges individual property rights and anthropocentric resource exploitation over ecological preservation.[58]

Anglo-American juridical systems have varying degrees of legal pluralism integrated into their governance: take the United Kingdom in comparison with New Zealand and you will find greater legal expressions of Indigeneity in the latter. The RoN movement often claims that this influences state-based control and its political responsiveness to integrating RoN by enabling more legitimate and accessible routes for the rights of natural entities to be recognised.[59] In other words, the ability of pre-existing Indigenous laws to recognise natural entities as inherently respected beings and more readily legitimise the integration of such recognition into state law is relied upon for the movement.[60]

Case Study:

The Whanganui River, Indigenous Rights and RoN in New Zealand

Across the Te Ika-a-Māui (North Island) of New Zealand flows a 290 km river, the Whanganui. In 2017, the Whanganui was granted personhood, recognising the river's capability to act as a person in a court of law and thereby treating it as a legal entity.[61] The Te Awa Act designates representatives of the river to act on its behalf: a committee composed of Peoples from the Indigenous community that fought for its rights, as well as representatives of the Crown.[62] Indigenous laws — the kawa — are central to the Act, devolving power to local communities and hapū (a political unit within Māori

[57] Cormac Cullinan (n12) 68.
[58] Brent M. Haddad, 'Property rights, ecosystem management, and John Locke's labor theory of ownership' 46 Ecological Economics [2003] 19. Please note this article does not explicitly discuss pluralism.
[59] Jasper Mührel (n18) 366.
[60] Daniel Bonilla Maldonado (n46).
[61] Te Awa Tupua (Whanganui River Claims Settlement) Act 2017.
[62] ibid s 18.

society).[63] Through this combined recognition, a working relationship between the kawa and state law was created. It has been suggested that New Zealand's RoN model represents the most advanced example to date of how conventional legal hierarchies may evolve towards meaningful legal pluralism within established Anglo-American constitutional orders.[64] It is important, though, to keep in mind that this evolution emerged principally through Indigenous rights advocacy rather than from a pluralistic ecocentric jurisprudential position.[65]

Treaty of Waitangi and the Origins of the Te Awa Tupua

As previously discussed, inherent to the anthropocentric foundation of Anglo-American juridical systems is their fundamental disconnection from Earth systems.[66] This severance is particularly pronounced in colonial contexts, where Anglo-American juridical frameworks have systematically displaced Indigenous legal traditions and their inherent environmental relationships.[67] The Treaty of Waitangi (in the Māori language, te Tiriti o Waitangi) in Aotearoa-New Zealand exemplifies this phenomenon — following its implementation in 1840, Māori Peoples were systematically excluded from interpreting its legal significance, despite their recognised cultural and spiritual connections to the natural world.[68]

Prior to the Treaty of Waitangi, the British Crown designated the islands of New Zealand as terra nullius, a position affirmed in subsequent legal proceedings of *R v Symonds* and *Wi Parata v Bishop of Wellington*.[69] During the 1830s, increasing European immigration precipitated escalating tensions between settlers and the Indigenous Māori population, particularly regarding land ownership and labour

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[63] Miriama Cribb, Elizabeth Macpherson, Axel Borchgrevink 'Beyond legal personhood for the Whanganui River: collaboration and pluralism in implementing the Te Awa Tupua Act' [2024] The International Journal of Human Rights 1, 1.
[64] Helen Dancer (n50) 35.
[65] Helen Dancer (n50) 35.
[66] Andreas Philippopoulos-Mihalopoulos, *Spatial Justice. Body, Lawscape, Atmosphere* (Routledge 2015) 52.
[67] Lee Godden, '"Recognising" Culture and Religion in State Transition: Confluence in the Indo-Pacific World' Roshan de Silva-Wijeyeratne (ed) *Sovereignty Contested: The Politics of Religion and State Legal Forms in the Borderlands of the Indo-Pacific* (In Press 2025).
[68] Mariëlle Matthee, *'Law, Poetry, and the Voice of Nature' in Crawley, Giddens and Peters (eds), The Routledge Handbook of Cultural Legal Studies* (Routledge 2024).
[69] Lee Godden (n67) 131.

utilisation.[70] These conflicts resulted in British efforts to establish and legitimise Crown sovereignty over the territory.[71] The Treaty of Waitangi, signed in 1840, constituted a formal agreement between representatives of the British Crown and more than 500 Māori chiefs.[72] The document was initially drafted in English and subsequently translated into Māori by missionaries.[73] Significantly, Māori chieftain signatories were provided assurances that the Treaty would reinforce rather than diminish their traditional authority to govern. By September 1840, the Treaty had garnered over 500 Māori signatures, with the majority of chiefs endorsing the Māori-language version.[74] The British, emphasising the English-language draft, subsequently declared sovereignty over New Zealand — rejected by the Māori and leading to an outbreak of violent conflict until 1847.[75]

Within modern day New Zealand, the authoritative interpretation of the Treaty of Waitangi is vested exclusively in the Waitangi Tribunal, a standing commission of inquiry established by the Treaty of Waitangi Act 1975 to investigate alleged Crown breaches of Treaty obligations.[76] Notably, though, the Treaty of Waitangi itself does not constitute a component of New Zealand's domestic legal system, except in instances where statutory provisions explicitly reference the Treaty.[77] As the Ministry of Justice acknowledges:

> "While the Treaty is widely seen as a constitutional document, its status in New Zealand law is less than settled."[78]

The interpretative dimensions of the Treaty remain subject to substantial academic and political contestation, as does its efficacy for facilitating meaningful legal pluralism.[79]

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[70] Lee Godden (n67) 131.
[71] Lee Godden (n67) 131.
[72] Lee Godden (n67) 132.
[73] Lee Godden (n67) 131.
[74] Lee Godden (n67) 131.
[75] Lee Godden (n67) 132.
[76] Lee Godden (n67) 131.
[77] Lee Godden (n67) 132.
[78] New Zealand Government, 'Te Tiriti o Waitangi - Treaty of Waitangi' (24 January 2025) <https://www.justice.govt.nz/about/learn-about-the-justice-system/how-the-justice-system-works/the-basis-for-all-law/treaty-of-waitangi/#:~:text=Treaty%20rights,than%20settled>accessed 14 March 2025.
[79] Waitangi Tribunal, 'Te Rōpū Whakamana i te Tiriti o Waitangi/Waitangi Tribunal Report 2014' (Waitangi Tribunal 2014) 1

Whilst the initial colonial period of the 1840s may have witnessed certain endeavours to advance genuine legal pluralism through Treaty negotiations, these efforts failed to prevent subsequent violent territorial conflicts.[80] This historical marginalisation of Indigenous legal perspectives has established the context that contemporary legal pluralism now seeks to address, particularly in matters of environmental governance. These tensions reflect the influence of Locke, which justified colonial acquisition through notions of property rights acquired by supposedly improving uncultivated lands. Locke's conceptualisation of state sovereignty, emerging from social contract among property owners, effectively privileged European legal frameworks while delegitimising Indigenous governance systems that emphasised collective stewardship rather than individual ownership.

Relational Legal Pluralism and Constraints Still Faced by the Whanganui Model

The Whanganui presents one of the emergent paradigms of legal pluralism: 'relational legal pluralism'.[81] This operates from the premise that multiple legal orders coexist simultaneously within any given context.[82] They focus on the procedural mechanisms and institutional structures necessary to facilitate and sustain inter-order relationships — relational legal pluralism moves away from static rights-based declarations or entitlement frameworks, instead underlining the dynamic relationships between entities as enacted through procedural frameworks, established protocols and ritual practices.[83]

Relational approaches have afforded jurisprudential scholars a conceptual framework through which to analyse the recognition of kawa within the Whanganui model.[84] The relational focus serves two key analytical purposes. Firstly, it clarifies the

<https://forms.justice.govt.nz/search/Documents/WT/wt_DOC_85648980/Te%20Raki%20W.pdf> accessed 12 March 2025.
[80] Lee Godden (n67) 133.
[81] Miriama Cribb (n63) 1.
[82] Edward Taihākurei Durie, 'Indigenous Law and Responsible Water Governance', in *Responsibility: Law and Governance for Living Well with the Earth* (Abingdon-on-Thames: Routledge, 2018), 135-42.
[83] Miriama Cribb (n63).
[84] Elizabeth Macpherson, 'Can Western Water Law Become More "Relational"? A Survey of Comparative Laws Affecting Water across Australasia and the Americas' (2023) 53 Journal of the Royal Society of New Zealand 395.

interrelationship between Indigenous and state legal systems and authority within this framework, characterised by some scholars as a 'relational sphere of influence' 'nestled between both systems'.[85] Secondly, it facilitates comprehension of the kinship connections between people and the river within Whanganui *Iwi* jurisprudence, wherein the river is conceptualised as a relation. This relational conceptualisation corresponds with documented understandings of Mãori relationships with the natural environment, which are structured around 'place-based'[86] relatedness or kinship connections between Peoples and 'living waters',[87] communicated through genealogical frameworks known as whakapapa.[88]

In spite of this relational understanding, the Whanganui's rights remain constrained by lingering Lockean concepts in its Anglo-American juridical system. The governance framework wherein human representatives (Te Pou Tupua) act as 'the human face' of the river effectively positions humans as stewards, rather than recognising the river's genuine, independent, legal personhood.[89] This subtly reinforces the Lockean notion that natural entities require human management and representation to have value within legal systems — it just so happens that in this case, that management is geared towards care rather than exploitation. Furthermore, this perpetuates the Lockean separation between human and nature by merely modifying who may speak for nature rather than reconceptualising nature's legal standing.

The Te Awa Tupu, then, is a strong model for Indigenous-led community collaboration that claims to put 'the people back in the river'.[90] Considering Lockean restraints on relational pluralism, the Whanganui model may be more appropriately interpreted as

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[85] The Independent Working Group on Constitutional Transformation, 'He Whakaaro Here Whakaumu Mō Aotearoa: The Report of Matike Mai Aotearoa' (Treaty Based Multicultural Future 2016) <https://nwo.org.nz/wp-content/uploads/2018/06/MatikeMaiAotearoa25Jan16.pdf> accessed 17 March 2025, The three spheres were one of six possible models proposed; L. Taylor and D. Hikuroa, 'Kawanatanga 'Future Search' Workshop Summary Report' (Sustainable Seas National Science Challenge 2022) <https://www.sustainableseaschallenge.co.nz/tools-and-resources/k%C4%81wanatanga-future-search-workshop-summary-report/> accessed 17 March 2025; Miriama Cribb (n63) 1, 6.

[86] Miriama Cribb (n63) 5, 6 and 7.

[87] Miriama Cribb (n63) 19.

[88] Liz Charpleix, 'The Whanganui River as Te Awa Tupua: Place-based Law in a Legally Pluralistic Society' (2018) 184 The Geographical Journal 19.

[89] Te Awa Tupua (n61) s.14, ss. 18-20. Declares that the purpose of Te Pou Tupua is to be the human face of Te Awa Tupua, represented by one person nominated by the Crown and the other by Iwi with interests in the Whanganui River.

[90] Miriama Cribb (n63) 1, 15-16.

an exploration of an *Indigenous* legal paradigm, rather than as a meaningful model for *RoN*.[91]

Even then, the framing of Indigenous legal paradigms as challenging unitary Anglo-American legal systems is limited. For legal pluralism to not be illusory, the legitimisation of Indigenous rights under agreements like the Treaty of Waitangi should be considered. Colonial powers' utilisation of agreements with Indigenous peoples has undergone a significant transformation over time.[92] Initially characterised by rhetorical commitments to weak legal pluralism, formal arrangements progressively evolved into instruments for the assertion of imperial sovereignty.[93] The efficacy of informal governance practices in establishing colonial legitimacy directly influenced the varying degrees to which such agreements meaningfully accommodated pluralistic legal frameworks.[94] This correlation illuminates how institutional mechanisms of colonial administration adapted to consolidate imperial authority, whilst maintaining a façade of Indigenous accommodation — this is evident in the integrative dynamics of the Whanganui today. This notion of illusory pluralism, too, is further evidenced by the case *of Mabo*.

Case Study: *Mabo v Queensland*, Illusory Pluralism

Although not categorised as a RoN case, *Mabo v Queensland* (No 2) presents another significant example of Indigenous relations to land and the attempt to achieve a form of legal pluralism within Anglo-American juridical frameworks.[95]

To many, the landmark High Court decision signified the Australian state's departure from Anglo-American property principles, which had previously underpinned colonial land acquisition practices throughout the Commonwealth.[96] This occurred primarily through the rejection of *terra nullius*, thereby affirming Indigenous Australians' distinctive ontological connection to their land whilst acknowledging their pre-

[91] Miriama Cribb (n63) 1, 15-16.
[92] Lee Godden (n67) 123.
[93] Ben Silverstein, 'Submerged Sovereignty Native Title within a History of Incorporation' in Julie Evans et al (eds) *Sovereignty: Frontiers of Possibility* (Honolulu: University of Hawaii Press, 2013) 61.
[94] Lee Godden (n67) 124.
[95] *Mabo v Queensland* (No 2) [1992] HCA 23; (1992) 175 CLR 1.
[96] Peter Fitzpatrick, "No Higher Duty': Mabo and the Failure of Legal Foundation' [2002] Law and Critique Journal Vol 13(3) 233, 234.

existing rights and cultural heritage.[97] The decision's significance extended beyond recognition of native title; it supposedly heralded a fundamental reconfiguration of Australia's legal epistemology, facilitating the legitimisation and institutionalisation of legal pluralism within the nation.[98] The judicial acknowledgement seemingly unlocked juridical space for alternative conceptions of property relations that transcended the Lockean emphasis on improvement. Further scrutiny challenges the validity of these conclusions.

In his seminal article, *'No Higher Duty: Mabo and the Failure of Legal Foundation'*, Peter Fitzpatrick referred to the theoretical construct of 'reified and a reifying law' to describe how common law, applied in the *Mabo* case, systematically transforms the multifaceted, incomplete, and contextually contingent narratives from Indigenous epistemological perspectives into rigid, inflexible legal principles.[99] This process of juridical reification functions as a mechanism through which legal discourse reconstructs social reality according to its predetermined normative boundaries, thereby asserting its epistemological and ontological supremacy over alternative governance systems.[100] The result is that Indigenous laws, although engaged with, were subsumed by Australian law. In other words, the legal system perpetuates structural oppression through processes of strategic integration rather than genuine recognition of legal pluralism.[101]

This approach represents a strategic and selective acknowledgement that operates within pre-established Anglo-American, and in this case colonial, legal paradigms, ultimately prioritising state sovereignty and the socio-economic interests — owned, or rather claimed, land in particular — that Lockean legal structures were historically constructed to safeguard.[102] With Anglo-American systems necessitating self-authorising sovereigns a paradox is created wherein the sovereign simultaneously generates and is generated by the legal framework it inhabits, serving as both the source and product of constitutional order.[103]

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[97] Gerry Simpson, 'Mabo, International Law, Terra Nullius and Stories of Settlement: An Unresolved Jurisprudence' [1993] 19 Melbourne University Law Review 195.
[98] ibid
[99] Peter Fitzpatrick (n96) 233.
[100] Peter Fitzpatrick (n96) 235.
[101] Peter Fitzpatrick (n96) 242.
[102] Peter Fitzpatrick (n96) 238.
[103] Scott Veitch (n28) 122.

As evidenced by the Whanganui, nation-states maintain their sovereign authority by positioning courts as the definitive arbiters of nature's interests, whilst simultaneously avoiding substantive challenges to fundamental property doctrines. This approach is decidedly anthropocentric rather than eco-centric. Natural entities consequently remain in virtually the same positions as in their pre-rights recognition statuses — subordinate to human legal constructs that are inherently ill-equipped to address the temporal and spatial characteristics and needs of ecological entities.[104] Lockean-part-derived concepts of state sovereignty thereby continue to limit the level that RoN can be meaningfully integrated into Anglo-American systems. Hence, the implementation of RoN remains at the discretion of the unitary central state, which by its fundamental constitutional nature contradicts the core principles of RoN.

Like in *Mabo*, these same warped relational interpretations are faced by RoN movements in Anglo-American systems that are reliant upon genuine legal pluralism to meaningfully represent natural entities' rights. The reduction of complex socio-ecological relationships into justiciable rights claims furthers the colonisation of ecocentric legal frameworks because they become selectively incorporated fragments rather than equal participants in pluralistic legal discourse. In many ways, Anglo-American legal systems' treatment of RoN parallels the selective acknowledgement seen in *Mabo*.

The parallel between *Mabo* and RoN examples demonstrates how Anglo-American legal systems systematically subordinate alternative legal ontologies through processes of assimilation rather than authentic legal pluralism, ultimately preserving state authority and property regimes established to protect dominant socio-economic interests. It should also be recognised that for legal pluralism to work effectively in alternative jurisdictions, governments must develop mechanisms to confer legal personhood upon natural entities in ways that decentralise state authority, irrespective of whether Indigenous communities maintain traditional relationships with the territories in question — moving beyond merely symbolic recognition.[105] RoN, then, as the cases of the Whanganui and *Mabo* demonstrate, are unlikely to achieve their intended transformational impacts. Instead, they are likely to become

[104] Nathalie Rühs, Aled Jones, 'The Implementation of Earth Jurisprudence through substantive Constitutional Rights of Nature' [2016] Sustainability 8(2), 174, 175.
[105] Helen Dancer (n50) 35.

assimilated instruments that paradoxically reinforce the Lockean anthropocentric paradigm they seek to challenge.

Reconceptualising Legal Pluralism: A Prerequisite for Rights of Nature

Beyond Accommodation: Davies's Law Unlimited and Rights of Nature

The case studies examined thus far reveal a consistent pattern wherein Anglo-American juridical systems subjugate alternative legal ontologies while preserving fundamental anthropocentric paradigms. This pattern necessitates a critical reassessment of legal pluralism itself before RoN can meaningfully operate within these systems to prevent further ecological decline and promote recovery. Drawing on Margaret Davies's theoretical framework of 'Law Unlimited', this section argues that effective and true RoN require not merely recognition of multiple legal traditions but a fundamental reconceptualisation of legal boundaries themselves. There are also socio-cultural and practical impediments to achieving such a reconceptualisation, but these will not be delved into here.

Davies's concept challenges conventional understandings of legality as centralised, hierarchical, and state-based by recognising law's existence beyond formal institutions — in everyday practices, relationships, and normative understandings.[106] Davies addresses three binary distinctions that structure conventional legal thinking: law/non-law, legal/illegal, and subject/object.[107] This final distinction is particularly relevant for RoN movements, as it underpins the persistent categorisation of natural entities as property rather than as rights-bearing subjects.

The practical implementation of Davies's unlimited legal pluralism would differ significantly from established RoN models. Rather than simply designating human guardians for natural entities, this approach may establish governance frameworks that respond directly to ecological processes and relationships. These frameworks would necessarily challenge Lockean property concepts by recognising normativity as emerging not from human labour or improvement but from inherent interconnections

[106] Margaret Davies *Law Unlimited: Materialism, Pluralism, and Legal Theory* (Routledge 2017).
[107] ibid

within ecological systems.[108] A fully realised unlimited pluralism may look like the recognition of rivers, mountains and ecosystems not as subjects granted rights by human institutions, but as participants in regulated relationships that precede and extend beyond state authority.[109]

Davies's framework suggests a flattening of legal hierarchies and dissolution of rigid legal boundaries.[110] This reconfiguration addresses a fundamental limitation in current approaches: their continued positioning of nature within existing legal categories. The subject/object distinction that positions natural entities as property cannot be overcome simply by granting them rights; it requires acknowledging the inherent normativity in human-nature relationships that exists prior to and independent of state recognition. The Whanganui case demonstrates this limitation clearly. While the river gains legal personhood, this status remains dependent on human representatives operating within conventional legal institutions. The river's agency remains mediated through anthropocentric frameworks rather than recognised as an inherent characteristic of the ecological entity itself. This arrangement preserves rather than challenges the fundamental Lockean separation between human and natural domains. This reconceptualisation of legal pluralism offers important strategic implications for RoN movements within Anglo-American systems. First, it suggests that advocates should focus not merely on securing legal recognition within existing frameworks but on challenging the foundational categories and boundaries of law itself. Second, it indicates that effective implementation requires institutional diversity-creating governance structures that respond directly to ecological processes rather than merely representing them through human intermediaries.

Davies also argues that law is "emergent from relationships, including the relationships between humans and things, between minds and bodies, rather than imposed."[111] This implies that law does not evolve exclusively from institutions and texts. This recognition undermines the subject/object distinction by acknowledging that normativity emerges from the dynamic relationships between humans and the natural world.

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[108] Margaret Davies (n106) Ch 4.
[109] Margaret Davies (n106) 61.
[110] Margaret Davies (n106) 32.
[111] Margaret Davies (n106) 88.

Finally, Davies's framework suggests that meaningful RoN integration requires addressing the temporal mismatch between legal and ecological timeframes.[112] Ecological processes operate on temporal scales ranging from microseconds to millennia, whilst political and legal systems typically function within electoral or budgetary cycles measured in months, years or decades at the most.[113] Intrinsically, too, Anglo-American traditions prioritise certainty and foster absoluteness, whereas many Indigenous traditions and natural entities are characterised by complex, non-linear, and emergent properties. The mismatch between institutional and ecological reality reaffirms that rights-based approaches are largely symbolic rather than transformative, perpetuating the anthropocentric paradigm under the veneer of ecological consideration.

The path toward this unlimited legal pluralism requires moving beyond simple accommodation of alternative traditions towards a fundamental reimagining of law's boundaries, sources and purposes. Without this reconceptualisation, RoN initiatives are yet another example of alternative legal ontologies being selectively incorporated while preserving the anthropocentric foundations of Anglo-American jurisprudence.

Legal Personhood and RoN

This chapter examines the theoretical underpinnings and practical implementation challenges of natural entities' personhood within Anglo-American legal systems. As RoN movements gain momentum globally, the extension of legal personhood to rivers, forests, and ecosystems has emerged as a primary strategic mechanism for their protection.[114] This approach, however, reveals a fundamental paradox: attempts to secure rights for natural entities remain tethered to deeply anthropocentric legal constructs that were never designed to accommodate non-human interests in the first place.[115]

[112] Margaret Davies (n106) 58.
[113] Bonnie Holligan (n7).
[114] Francine Rochford, *Environmental Personhood: New Trajectories in Law* (Routledge 2024) 1.
[115] ibid

The granting of personhood to natural entities — whether New Zealand's Whanganui River, India's Ganges and Yamuna rivers[116] or various other environmental features — represents both a revolutionary legal innovation and a problematic conceptual compromise. While celebrated as evidence of an emerging ecocentric jurisprudence, these developments often reproduce the very anthropocentric hierarchies they purport to challenge. By applying a concept historically defined through human exceptionalism to natural entities, we risk creating hollow protections that cannot overcome the structural biases embedded within Anglo-American legal traditions.

This chapter critically evaluates the ontological evolution of personhood conceptualisations and their jurisprudential implications for natural entities. It first traces the historical development of legal personhood from its Roman origins through Lockean property theory to contemporary applications, revealing how the concept fundamentally separates persons from things in ways that systematically disadvantage natural entities. The analysis then examines how this subject/object dichotomy creates structural impediments that cannot be overcome through mere extension of personhood status in Lockean-derived property paradigms. Finally, it addresses the practical challenges of implementing rights for natural entities within Lockean-influenced systems designed to prioritise human and corporate interests, particularly regarding representation, competing claims and jurisdictional limitations.

Rather than rejecting RoN approaches entirely, this chapter suggests that meaningful ecological governance requires moving beyond personhood paradigms toward frameworks that recognise the fundamental incompatibility between traditional Anglo-American jurisprudence and the relational, non-hierarchical ontologies necessary for genuine environmental protection. The personhood paradox reveals not simply a technical legal challenge, but a deeper philosophical impasse that requires reimagining the conceptual foundations of our legal relationship with the natural world.

Historical Development

[116] The Ganges and Yumana have had their personhood overturned; 'India's Ganges and Yamuna rivers are 'not living entities' (BBC 7 July 2017) <https://www.bbc.co.uk/news/world-asia-india-40537701> accessed 1 February 2025.

Anglo-American legal systems function through rights-based frameworks that only recognise claims from legally defined 'rights holders'.[117] This explains why establishing legal personhood for natural entities is crucial for RoN movements, as without personhood status, nature cannot possess enforceable rights within these systems. Mainstream Anglo-American legal frameworks constructed upon Lockean principles prioritise human interests and property rights and, in turn, create inherent structural impediments to meaningful recognition of natural entities as rights-bearing subjects. Achieving full personhood for natural entities is not typically the result of legislative, constitutional or judicial reform. Instead, recognition models tend to be adaptations of existing protections.[118]

In alignment with this, a Lockean 'person' is defined as "a thinking intelligent being, that has reason and reflection, and can consider itself as itself, the same thinking thing in different times and places" — a status, then, reserved for human individuals.[119] For Locke, it is memory which functions as the mechanism that maintains and demonstrates an individual's continuous self-awareness over time.[120] Like Locke, George Hegel's, Immanuel Kant's, and William Blackstone's commentaries also fostered the division between the status of persons and things. In his 1765 Commentaries, Blackstone argued that the "primary and principal objects of the law are rights and wrongs" continuing to claim that the distinction between the rights of a person and the rights of things lies in the rights that a person may acquire over objects.[121] Legal personhood is, by design, an exclusionary reductive approach to placing subjects within a legal sphere.[122] The Anglo-American world has a long fraught relationship with withholding legal personhood from humans, discriminating by gender, sexuality, race, disability, and religion.[123] In many Anglo-American juridical systems, the root concept of 'person' is often traced back to the Roman

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[117] Noah M Sachs, 'A Wrong Turn with the Rights of Nature Movement' (2023) 36 Georgetown International Environmental Law Review 39, 81.
[118] Francine Rochford (n114) 1.
[119] John Locke, *An Essay Concerning Human Understanding Volume II: Ideas* (1690) ch. XXVII, § 9.
[120] Anna Lännström, 'Locke's Account of Personal Identity: Memory as Fallible Evidence' (2007) 24(1) 39.
[121] Blackstone, *Commentaries on the Law of England* [1765] 118.
[122] Margaret Radin, 'Property and Personhood', Stanford Law Review (1982) 34(5) Stanford Law Review 957, 972.
[123] Jasper Mührel (n18) 190.

jurist Gaius.[124] Gaius established a tripartite classification system in his Institutes: Corpus Juris Civilis (composed of the Codex, Digests and Institutes). This was interpreted to segregate private law into three categories: *in personae, res and actiones* (persons, things and legal actions). England and its colonies imposed this framework through Blackstone's Commentaries (1765) and Edward Coke's Institutes (1628-1644).[125]

Contemporary legal frameworks remain permeated by such understandings, influencing both modern legal taxonomies and substantive content across Anglo-American jurisdictions. This is particularly obvious when we examine how rights-based terminology defines who qualifies as having "personhood". By framing personhood through the lens of rights possession rather than as an inherent status, modern legal discussions have transformed how we conceptualise the very subjects and objects of law.[126]

Structural Impediments

Subject/Object

The subject/object dichotomy, as argued by Davies, is a foundational impediment to granting meaningful legal personhood to natural entities. This dichotomy stems from Locke's conceptualisation of natural entities as exclusively objects of property rights rather than potential juridical subjects. As put by Maldonado, "[n]ature, which for modern law is only a thing over which human beings can have property rights … could never be considered a juridical subject and could never have subjective rights."[127] RoN personhood threatens the key premise of the autonomous and rational subject upon which Anglo-American law is based.[128] They challenge not only procedural aspects of environmental law but the fundamental ontological categories that structure Anglo-American legal thought.[129] This core assumption is reified through

[124] Francine Rochford (n114) 22.
[125] Francine Rochford (n114) 23.
[126] Francine Rochford (n114) 23.
[127] Daniel Bonilla Maldonado, 'The Rights of Nature: Their Conceptual Architecture' [2025] Law and literature 1, 10.
[128] ibid
[129] Francine Rochford (n124).

constitutional governance structures that systematically privilege established property rights over ecological considerations, thus creating not merely an incidental bias, but a structural impediment to meaningful recognition of natural entities as legal persons and/or rights-bearing subjects.

In reviewing environmental protections, courts have been known to weigh property rights against environmental concerns, demonstrating how the subject/object distinction creates an inherently unbalanced contest.[130] This was most evident in *Sierra Club v. Morton* in the United States, where the Supreme Court rejected standing for natural objects, reinforcing their status as property rather than rights-bearing subjects. Justice Douglas's dissenting judgement in that verdict argued, though, that environmental entities should have standing in accordance with particular procedural rights.[131] In this he is aligned with literature today, which argues that while personhood is unlikely to overcome Lockean barriers, the implementation of procedural rights can overcome some of the voicelessness existing legal systems confer upon natural entities.[132]

Lockean Blockages

In Anglo-American systems of law, Locke's influence on the concept of the person has been foundational to rights theory.[133] As established, his connection between personhood and natural rights — rights that individuals possess independently of socio-legal recognition — shaped modern conceptions of human rights. This presents an obvious barrier to the meaningful integration of the RoN movement socially. Often the discussion on personhood refers to the premise that "to achieve proper self-development — to be a person — an individual needs some control over resources in the external environment."[134] This social notion creates challenges because Anglo-American property systems are built on the relationship between human personhood and external objects,

[130] *Sierra Club v Morton* (n19) [741]-[745].
[131] *Sierra Club v Morton* (n19) [741]-[745].
[132] Andrea Schappera, Clemens Hoffmann, Phyllis Leeb, 'Procedural rights for nature - a pathway to sustainable decarbonisation?' (2022) 43(5) TWQ 1197.
[133] Miguel Vatter, Marc de Leeuw, 'Human Rights, Legal Personhood and the Impersonality of Embodied Life' (2019) 19(1) 106, 106-107.
[134] Margaret Radin (n122) 957.

with people becoming "bound up" with their property as "part of the way we constitute ourselves as continuing personal entities in the world."[135] So, intuitively, to acquire property rights, there must be a distinction between the property and the thing.[136]

Locke's conception of personhood requires continuous self-consciousness through memory as the fundamental criterion for legal recognition.[137] This understanding establishes a binary taxonomy: beings possessing psychological continuity (memory) qualify for personhood, while others are relegated to object status.[138] Anglo-American jurisprudence further entrenches this exclusionary paradigm by privileging human-centred normative frameworks while marginalising Indigenous epistemologies that frequently conceptualise human-nature relationships through relational rather than hierarchical ontologies. The social incompatibility between Lockean personhood criteria emphasising individualistic psychological continuity, and relational Indigenous ontologies that recognise agency in natural entities without requiring human-like cognitive capacities, represents an ontological dissonance that necessitates a restructuring of the metaphysical assumptions underlying Anglo-American personhood if meaningful RoN implementation is to be achieved.

Rights Clashes

When traditional legal rights conflicts arise (individuals' rights vs. property rights vs. state interests), legal systems have well-established mechanisms for resolution through common law precedents and statutory provisions. However, when rights claims stem from newly recognised natural entities as legal persons, they create more fundamental challenges. Such rights directly conflict with property rights that form the backbone of Anglo-American legal systems, expressed in those very precedents and statutory provisions. In other words, when rights claims originate from the concept of personhood itself, greater potential exists for infringement upon what contemporary legal frameworks

[135] Margaret Radin (n122) 959.
[136] Margaret Radin (n122) 959.
[137] John Locke (n119) Ch XXVII, § 9.
[138] Anna Lännström (n120) 39.

would classify as fundamental rights.[139] This consideration addresses the 'value proposition' requiring evaluation in the theoretical construct of non-human personhood.[140] As discussed previously, Lockean Anglo-American juridical systems (mirroring political frameworks) characteristically prioritise human existence above other natural entities. Major ethical divides exist already between what can be considered human and what cannot — one only has to refer to debates on abortion rights in the United States to see this. Ultimately, recognition of personhood in law bestows a set of rights that generally reflect contemporary ethics.[141] This consequently necessitates a significant degree of societal acceptance regarding such transformation, wherein public endorsement would need to be sufficiently robust to facilitate meaningful political reform — a process presenting considerable challenges.

Implementational Challenges

Corporate Personhood

Corporate personhood itself has been argued as having set a precedent for the widening of personhood to non-human entities. It has, however, paradoxically cemented the Lockean subject/object dichotomy by creating a new class of artificial persons whose primary purpose is the acquisition, transformation and exploitation of natural resources as property. This evolution of personhood has occurred alongside increasing environmental regulation, creating a fundamental tension between these competing legal frameworks that consistently favours property rights over ecological considerations.

Unlike traditional persons whose interests might occasionally align with environmental protection, corporate entities are structurally designed to treat nature exclusively as a resource to be transformed into property.[142] This systematically amplifies the subject/object dichotomy rather than ameliorating it. Financial fiduciary duties are also relevant as they compel corporate directors

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[139] Francine Rochford (n114) 12.
[140] Francine Rochford (n114) 12.
[141] Francine Rochford (n114) 13.
[142] Clive L Spash, 'Corporations Capitalism and Sustainable Development' (2022) 269 Biological Conservation <https://doi.org/10.1016/j.biocon.2022.109528> accessed July 2026.

to prioritise shareholder value over environmental wellbeing, effectively institutionalising the Lockean notion that nature's value emerges primarily through human transformation. This entrenchment manifested itself in *Citizens United v. Federal Election Commission* in the United States.[143] The Supreme Court ruled in 2010 to dramatically expand corporate political influence, granting them enhanced capacity to shape environmental regulations in ways that preserve their access to natural resources as property — a precedent continuing to trickle down today.[144]

Assumptions of Efficacy and Representation

Consider the example of a water utility company abstracting water from a river to supply a nearby city. With drought frequency increasing across Anglo-American regions due to climate change, such utilities may require increased abstraction volumes — potentially compromising the river's ecological integrity. If the company maintains ownership over the abstraction section, they will likely possess certain legal entitlements regarding water use. Where the river possesses inherent rights, a more complex power equilibrium emerges. Whose rights would receive precedence in adjudication — human communities' or natural entities'? If human rights ultimately predominate, then RoN frameworks arguably fail to deliver enhanced environmental protections beyond those potentially afforded by conventional environmental legislation. This highlights a significant challenge in the practical application of competing property rights regimes and the determination of priority stakeholders.

Many of these questions are deeply political and not restrained to whether the law could accommodate them. With a growing number of climate-related disasters, there is a likelihood that human societies will ensure priority is given to their well-being above all else. The antiquity of legal constructs, though, does not inherently diminish their applicability; it does however necessitate recognition that they emerged from specific cultural (including theological) and economic contexts often incongruous with modern environmental challenges.

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[143] *Citizens United v Federal Election Commission* [2010] 558 U.S. 310.
[144] ibid

Certain institutional limitations may have become obsolete, and jurisprudential evolution may have rendered particular legal elements superfluous.[145]

Transboundary Disputes

An additional jurisdictional impediment emerges from the fundamental transboundary nature of many natural entities. Earth functions as an integrated self-regulating system wherein ecological processes transcend anthropogenic demarcations of territorial sovereignty.

Geographical jurisdictions inherently constrain the adjudicative capacity of legal institutions, as courts can exercise remedial authority only within their competence.[146] This jurisdictional fragmentation presents substantial conceptual and procedural challenges for the implementation of universal or human rights paradigms that purport to transcend national boundaries, creating a fundamental incongruence between the spatial continuity of natural entities and the territorial discontinuity of legal systems.[147] RoN necessitate reconciling spatial organisation — how does one coherently define the legal personhood of a river system traversing multiple sovereign territories, each with distinct ontological understandings of rights, personhood and natural entities? Transboundary rivers are fragmented by competing legal systems, each imposing different levels of recognition and protection. This renders the conceptual basis of rights attribution inherently unstable. The supposedly universal rights-bearing natural entity becomes reduced to a collection of jurisdiction-specific legal constructs that often poorly reflect both each other and the ecological reality they purport to represent.

Purpose of Personhood

Today, the granting of personhood in existing RoN cases is the granting of a procedural right. Similar to the Whanganui, a case involving the Ganga and

[145] Francine Rochford (n114) 23.
[146] Noah M Sachs (n117) 66.
[147] Noah M Sachs (n117) 66.

Yamuna Rivers' statuses of personhood in India discussed the purpose and evolution of the concept of legal personhood in detail. The High Court of Uttarakhand scrutinised the historical development of personhood as a juridical construct necessitated by societal complexity. It observed that as societies advanced, obvious limitations of viewing only individuals as rights-bearing entities became apparent, prompting legal systems to develop the concept of "juristic persons". The Court acknowledged that the concept of legal personhood was devised to support societal development, stating that "[w]ith the development of the society where the interaction of individuals fell short to upsurge the social development, the concept of juristic person was devised and created by human laws for the purposes of society."[148] This innovation emerged when purely interpersonal transactions proved insufficient to facilitate broader social and economic development, resulting in the extension of legal personhood to non-human entities through deliberate legal frameworks designed to advance collective societal interests.

In this vein, it can be argued that given the ecological crises we face, personhood for natural entities may be necessary to better 'support societal development'. Given the previously discussed barriers in the implementation thereof, though, this is unlikely to escape theoretical bounds.

This chapter has explored the fundamental paradox within RoN movements: attempting to protect natural entities through personhood status within legal systems inherently structured around anthropocentric values. While representing innovative legal developments, these initiatives remain constrained by the very Lockean frameworks they seek to transcend.

The subject/object dichotomy in Anglo-American jurisprudence creates structural impediments that mere extension of personhood cannot overcome. Natural entities, historically positioned as objects rather than juridical subjects, face systematic disadvantages within systems designed to prioritise human interests. This dissonance is compounded by challenges of representation,

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[148] *Narayan Dutt Bhatt v Union of India and Others* [2018] Uttarakhand High Court [13]; Anima Mundi Law Initiative, 'Rights of Nature in Practice' (AMLI March 2021) <https://static1.squarespace.com/static/5d659024afafe900010c22d7/t/607d9323225ee965a3e00acf/1618842439987/Anima+M_undi+Law+Initiative+-+Guide+to+Rights+of+Nature+in+Practice> accessed 16 March 2025 1, 9.

competing claims, and jurisdictional boundaries. Corporate personhood, too, has paradoxically reinforced Lockean resource exploitation by creating artificial persons whose purpose is resource transformation. Meanwhile, ecological systems' transboundary nature fundamentally conflicts with territorially constrained legal institutions.

Instead of placing excessive focus on legal personhood as an end in itself, the RoN movement would likely experience greater success when viewing it as a means. Given the difficulty of its implementation for natural entities, resources would be better invested in broad-based efforts, like on existing environmental regulation and enforcement thereof. Personhood as part of a panoply of tools makes more sense — the concept is far from a panacea, and its paradox not merely a legal challenge, but a philosophical impasse requiring fundamental reconsideration of how law conceptualises the natural world.

Conclusion

This paper has examined the foundational tensions between Lockean property rights and the emerging RoN movement within Anglo-American juridical systems. The analysis has revealed that despite the growing global recognition of natural entities as legal subjects, these frameworks remain structurally predisposed towards anthropocentric property regimes that fundamentally constrain meaningful ecological protection.

The Lockean conception of property rights, which has profoundly shaped Anglo-American legal traditions, establishes a rigid dichotomy between human subjects and natural objects. By positioning untransformed nature as extralegal — outside legal consideration — and valorising human labour as the mechanism through which natural entities acquire value, this framework creates an artificial separation between human interests and those of nature. This separation constitutes precisely the barrier that the RoN movement attempts to overcome, yet paradoxically, this movement must operate within the very structures it seeks to transform.

The examination of legal pluralism in Chapter Two demonstrated how Anglo-American juridical systems systematically subjugate alternative legal ontologies

whilst preserving fundamental anthropocentric paradigms. The case of New Zealand's Whanganui River illustrates both the promise and limitations of 'relational legal pluralism'. While the Te Awa Tupua Act 2017 incorporated Indigenous Māori jurisprudence and established governance structures that recognise the river as a legal person, these innovations remain constrained by entrenched Lockean conceptions. The governance framework wherein human representatives act as 'the human face' of the river subtly reinforces the notion that natural entities require human management to have value within legal systems.

Similarly, the *Mabo v Queensland* judgment demonstrates how Indigenous relations to land are selectively acknowledged but ultimately subsumed within pre-established colonial legal paradigms that prioritise state sovereignty. As Peter Fitzpatrick observed, this process of juridical reification reconstructs social reality according to predetermined normative boundaries, asserting epistemological supremacy over alternative governance systems.

Chapter Three revealed the paradox inherent in extending legal personhood to natural entities within systems historically defined through human exceptionalism. The conceptual incompatibility between Lockean personhood — requiring continuous self-consciousness — and the recognition of agency in natural entities creates ontological dissonance that contemporary legal frameworks struggle to reconcile. Corporate personhood has paradoxically cemented this subject/object dichotomy by creating artificial persons whose primary purpose is the acquisition and exploitation of natural resources as property.

Implementation challenges further constrain RoN initiatives. Questions of representation, transboundary jurisdiction, and rights clashes with established property interests create significant operational barriers. Furthermore, ecological processes which transcend arbitrary territorial demarcations create fundamental incongruence between the spatial continuity of natural entities and the territorial discontinuity of legal systems.

The paper finds that without addressing the Lockean foundations of Anglo-American legal systems, RoN initiatives risk becoming assimilated instruments

that reinforce the anthropocentric paradigm they seek to challenge. The path towards meaningful implementation requires moving beyond simple accommodation of alternative traditions toward a fundamental reimagining of law's boundaries, sources and purposes.

Finally, this paper has contended that Anglo-American juridical systems structurally prioritise anthropocentric property regimes in ways that cannot be transcended through mere procedural adjustments. While innovations like legal pluralism and expanded personhood concepts offer potentially transformative pathways, they operate within epistemic constraints that systematically marginalise non-anthropocentric understandings of ecological entities.

Consequently, these movements function more as palliative than transformative interventions within inherently anthropocentric frameworks. Unless these foundational limitations are addressed, Anglo-American legal responses to ecological crises will remain constrained by the very conceptual frameworks that have facilitated environmental degradation throughout human history.

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The Atlantis Problem: Statehood Continuity and Climate-Induced Territorial Loss

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Abstract

The mythic nation of "Atlantis" has long captured humanity's collective imagination – a civilisation reclaimed by the indifferent march of the sea.[2] As observed by Abhimanyu George Jain, several "low-lying, small island states" such as the Maldives, Tuvalu and Nauru face a similar threat, as a consequence of man-made climate change.[3] The adversities faced by such states highlight a considerable injustice, especially when you consider that such states have made relatively minor contributions to the climate crisis.[4] In the next 50-100 years, many such states could become entirely submerged.[5] Drawing from Jain's influential work, this article will refer to the at-risk small island states as 'Atlantis States'.

This article examines the implications of such territorial loss in international law, with reference to the concept of statehood and maritime zones. It will also refer to existing treaty and customary law, including the Montevideo Convention. Furthermore, it argues that international law must, as a moral imperative, continue to recognise the existence of submerged states.

Keywords: Atlantis states, climate crisis, international law, statehood, territorial loss

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[2] Abhimanyu George Jain, 'The 21st Century Atlantis: The International Law of Statehood and Climate Change-Induced Loss of Territory' (2014) 50(1) Stanford Journal of International Law 1, at 3.
[3] ibid
[4] Abhimanyu George Jain (n2).
[5] Abhimanyu George Jain (n2).

Introduction

As Amanda Byers identified, the climate crisis was largely triggered by the industrial activities of 'former European empires'.[6] Furthermore, profits extracted from imperial possessions aided Europe's industrial boom.[7] As stated above, small island states have made negligible contributions to global carbon emissions – yet, such states are among the most vulnerable to the changing climate. For many at-risk states,[8] the loss of statehood in this context would represent a final colonial transfer of power. Thus, it is the basic responsibility of the prevailing international order to safeguard and protect such vulnerable states.

Statehood & Continuity

As noted by Jan Klabbers, "states are the main subjects of international law and are generally considered… sovereign".[9] Thus, for the Atlantis states, a loss of statehood would signify the loss of legal personality and control, as well as territory. When considering statehood, the Montevideo Convention provides a 'starting point'.[10]

Under Article 1 of the Convention, there are four requirements for the existence of a state in international law – (a) 'permanent population', (b) 'defined territory', (c) 'government', and (d) 'capacity to enter legal relations'.[11] In the event of a submergence, the Atlantis states would cease to have a 'defined territory'. As academic commentary has highlighted, the disappearance of land-based territory could have adverse implications for claims to maritime territory.[12] As set out in the United Nations Convention on the Law of the Sea, states are entitled to 'establish a breadth' of their

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[6] Amanda Byer, 'Climate Law from the Interstices: Caribbean SIDS and the Spatial Dimensions of TWAIL' (2023) TWAILR: Reflections 52 < https://twailr.com/climate-law-from-the-interstices-caribbean-sids-and-the-spatial-dimensions-of-twail/> accessed 29, July 2026.
[7] ibid
[8] Amanda Byer (n6).
[9] Jan Klabbers, *International Law* (3rd edn, Cambridge University Press 2024) 73.
[10] ibid
[11] Montevideo Convention on the Rights and Duties of States (adopted 26 December 1933, entered into force 26 December 1934) LNTS 165, art 1.
[12] Ydhan Naidoo, 'The Maintenance of Territorial Sovereignty After Submergence' (2025) OUULJ 14 <https://www.law.ox.ac.uk/sites/default/files/inline-files/7.%20The%20Maintenance%20of%20Territorial%20Sovereignty%20After%20Submergence%20-%20Ydhan%20Naidoo.pdf> accessed 29, July 2026.

territorial sea, 'up to a limit not exceeding 12 nautical miles'.[13] As the convention further provides, the 'normal baseline' is the 'low-water line along the coast'. Thus, as Naidoo identified, the disappearance of these baselines could theoretically impair a State's claim to its maritime territory.

Atlantis States would lose their permanent populations, the displacement of which would flow from the loss of habitable territory. Furthermore, the loss of a permanent population could occur because of 'chronic processes' attributed to the climate-crisis, that diminish or destroy the ability of land to provide essential resources needed for the maintenance of a permanent population.[14] There are therefore two relevant scenarios where climate change related loss can threaten statehood – (1) where a State is completely submerged and (2) where territory remains but has become uninhabitable. The retention of physical baselines in scenario (2) may support the retention of maritime territory it does not, however, remove the wider threat to Statehood. Once a state exists, there is a strong presumption that it continues to exist – the "extinction" of any State is the "exception in international law".[15]

Importantly, the International Court of Justice has intervened on this matter, specifically in relation to its climate change advisory opinion. The Court recognised the possibility that the Atlantis states would benefit from a strong presumption of continuity and considered that "once a state is established, the disappearance of one of its constituent elements would not necessarily entail the loss of… statehood".[16] The court made reference to the argument that a strong presumption of continuity should apply in this context, however, it fell short of explicitly endorsing this position.[17] Judge Tomka criticised the stance as 'oracular' – since the position would likely raise more questions than answers.[18] Notably, however premature the Court's intervention may have been, there is still the possibility that a new rule will "gather momentum in the

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[13] United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3 (UNCLOS) art 3.
[14] Maxine Burkett, 'The Nation Ex-Situ: On climate change, deterritorialized nationhood and the post-climate era' (2011) Climate Law 2, at 347.
[15] Inata Ziemele, 'States, Extinction of' (2007) OPIL <https://opil.ouplaw.com/display/10.1093/law:epil/9780199231690/law-9780199231690-e1111#law-9780199231690-e1111-div1-2>accessed 10 May 2026.
[16] *Obligations of States in Respect of Climate Change (Advisory Opinion)* (ICJ, 23 July 2025) 363.
[17] ibid
[18] *Obligations of States in Respect of Climate Change (Advisory Opinion)* (ICJ, 23 July 2025) (Declaration of Judge Tomka) paras 9-11.

years ahead".[19] As the next section will set out, this momentum could potentially crystallise into a new rule of Customary International Law.

Customary International Law

As provided by Article 38(1)(b) of the ICJ, a customary norm exists where there is an "international custom, as evidence of a general practice accepted as law".[20] There are two constituent elements to consider: State Practice and *Opinio Juris*.[21] This subsection will examine the potential emergence of both elements.

As the ICJ considered in its judgement of the *North Sea Continental Shelf Cases*, a new customary rule may crystallise within a short time. For example, if there has been "widespread and representative participation" that includes states that have been "specifically affected".[22] Small Island Developing States (SIDS) can clearly be regarded as being specifically affected, as the threat of submergence (or loss of habitable territory) represents a unique and severe threat against their continued existence.

(i) State Practice

As Klabbers observed, there is no fixed threshold that must be reached for the existence of a general practice.[23] Indeed, as the ICJ affirmed in the *Asylum* case, there is the possibility of a regional customary norm.[24] This may bear particular relevance where a purported customary norm relates to a precise issue – rules relating to maritime delimitation may not affect landlocked states and allowances can be made accordingly.[25] In this context, as Klabbers notes, custom may understandably be formed "without too many instances of practice".[26] As the International Law Commission identified, "practice" can take various forms, both physical and verbal.[27]

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[19] ibid
[20] Statute of The International Court of Justice (adopted 26 June 1945, entered into force 24 October 1945) 33 UNTS 993, art 38.
[21] *North Sea Continental Shelf Cases* [1969] ILC Reps 3, at para 77.
[22] ibid, para 73.
[23] Klabbers (n9) 28.
[24] *Asylum (Columbia/Peru)* [1950] ICJ Rep 266, at 276-7.
[25] *North Sea Continental Shelf Cases* [1969] ILC Reps 3, at para 73.
[26] Klabbers (n9) 28.
[27] International Law Commission, 'Draft conclusions on identification of customary international law' (2018) UN Doc A/73/10, conclusion 6

This includes “diplomatic acts and correspondence” and conduct related to the resolutions of an international organisation or to a treaty.[28]

The circumstances faced by the Atlantis states are a matter of ‘juridical novelty’, which are unprecedented in the development of international law.[29] With respect to a potential customary norm, such states can undoubtedly be regarded as specifically affected. Furthermore, an increasing degree of alignment can be identified in the conduct of the Atlantis states. This alignment is clearly reflected in the Pacific Islands Forum’s “Declaration on Preserving Maritime Zones…”, which articulates the position of several island nations. As stated in the declaration (which the Forum adopted unanimously, including Australia, Tuvalu and Nauru), “maritime zones… shall continue to apply, without reduction, notwithstanding any physical changes connected to climate-related sea level rise”.[30] This position was endorsed explicitly by The Organisation of African, Caribbean and Pacific States (which has 79 members).[31]

The Australia-Tuvalu Falepili Union treaty provides further evidence of this increasing alignment. For instance, under Article 2 “the statehood and sovereignty of Tuvalu” will persist, regardless of any potential climate-related sea level rise.[32] The significance of this agreement should not be understated – as noted by Douglas Guilfoyle and Alex Green, it is the first bilateral international agreement to reject the notion that ‘inhabitable land is necessary for State continuity’.[33] While initial practice appeared to be regionally concentrated, the endorsement of trans-continental organisations like the OACPS strengthens the notion of an emerging global norm, recognising the continued existence of Atlantis States.[34]

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[28] ibid
[29] Cait Storr, ‘Islands and the South: Framing the Relationship between International Law and Environmental Crisis’ (2016) 27 EJIL 2, 519-540, at 523.
[30] Pacific Islands Forum, ‘Declaration on Preserving Maritime Zones in the Face of Climate Change-Relates Sea-Level Rise’ (Adopted at the 51sr Pacific Islands Forum, 6 August 2021).
[31] Pacific Islands Forum, ‘10th OACPS: Samoa PM Mata’afa says OACPS can be unstoppable’ (17 December 2022) <https://forumsec.org/publications/10th-oacps-samoa-pm-mataafa-says-oacps-can-be-unstoppable>accessed 24 May 2026.
[32] Australia-Tuvalu Falepili Union Treaty (signed 9 November 2023, entered into force 28 August 2024), art 2.
[33] Douglas Guilfoyle and Alex Green, ‘The Australia-Tuvalu Falepili Union Treaty: Security in the face of climate change … and China?’ (EJIL: Talk!, 28 November 2023) <https://www.ejiltalk.org/the-australia-tuvalu-falepili-union-treaty-security-in-the-face-of-climate-change-and-china/>accessed 24 May 2026.
[34] Pacific Islands Forum (n31).

These examples reflect a broad trend in favour of recognising statehood continuity in this context. There is strong evidence of an emerging practice to the effect that (1) climate-related sea level rise will not reduce maritime zones and (2) more broadly, the statehood and sovereignty of Atlantis states will persist, notwithstanding such sea level rise.

(ii) *Opinio Juris*

In the *North Sea Continental Shelf* Cases, the ICJ found that the general practice must be coupled with 'evidence of a belief that this practice is rendered obligatory by…law'.[35] Thus, a customary norm can be distinguished from a practice informed by 'courtesy, convenience or tradition'.[36]

As concluded by the International Law Commission, the resolutions of international organisations do not, in isolation, create customary norms.[37] However, such resolutions 'may provide evidence for… the existence… of a rule of customary international law'.[38] Furthermore, 'conduct in connection with resolutions' can evidence *opinio juris*.[39] The Pacific Islands Forum Declaration falls within this category. The declaration does not simply reflect a desire for existing maritime zones to persist; it claims a legal basis – stating that the position is "supported by… the convention and the legal principles underpinning it".[40] The member states that unanimously adopted the declaration, were making a legal claim. Thus, their conduct in supporting the resolution provides evidence of *opinio juris*.

Furthermore, treaty provisions can provide evidence of *opinio juris*.[41] As discussed above, the Australia-Tuvalu Falepili Union Treaty provides, in clear language, that the statehood and sovereignty of Tuvalu will persist, even in the event of total submergence.[42] It signifies Australia's continued recognition of the state of Tuvalu.

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[35] *North Sea Continental Shelf Cases* (n14), para 77.
[36] ibid
[37] ILC (n21) 12.
[38] ILC (n21) 12.
[39] ILC (n21) 10.
[40] PIF (n30).
[41] ILC (n21) 10.
[42] Australia-Tuvalu Treaty (n32).

The treaty provides clear evidence of Australia's acceptance of this position (as a matter of law).

This developing *opinio juris* was supported by the ICJ, in its advisory opinion.[43] The decisions of the ICJ provide a 'subsidiary means' for determining the "existence and content" of customary norms.[44] The ICJ's position, that territorial loss does not necessitate the loss of statehood carries weight in this context.[45] While Judge Tomka was sceptical of this position, his opinion ultimately accepts the possibility that a new customary norm may crystallise.[46] Thus, as Guilfoyle and Green observed, even sceptics must "concede that the tide is changing".[47] There is increasing evidence to support the 'existential resilience' of the Atlantis states.[48]

Conclusion

There can be little doubt that the Atlantis states face a position of extreme peril – particularly resulting from the prospect of submergence. The treatment of such states, in the development of international law, must recognise the vulnerable nature of their predicament and their limited roles in the creation of the climate crisis.

Under the Montevideo criteria, a prospective state must have a defined territory. However, once a state has been established there is a strong presumption of continuity. As the ICJ has recognised, this presumption could extend to the Atlantis states. There is considerable evidence to support the existence of an emerging rule of customary international law, which would recognise the continued statehood and sovereignty of the Atlantis states.

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[43] ICJ (n16).
[44] ILC (n21), conclusion 13.
[45] ICJ (n16).
[46] ICJ (n16).
[47] Guilfoyle and Green (n33).
[48] ibid

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Policy Brief & Suggested Reform for Ofgem

Arman Vaziri[1]

Abstract

The Office for Gas and Electricity Markets (Ofgem) is the energy regulator for England, Scotland, and Wales, with its primary role being to protect consumers' interests.[2] Its responsibilities include regulation, licensing, and monitoring of the energy supply chain.[3] The energy trilemma of balancing affordability, supply security and sustainability is not unique to Ofgem and has been at the forefront of energy policy discussions.[4] What is unique about Ofgem is its net-zero by 2050 policy, which came into force in June 2019.[5] This requires Ofgem to reduce greenhouse gas emissions to 0% by 2050 while addressing the energy trilemma.[6] On December 19th, 2024, the UK Government sought evidence and views from stakeholders to revisit Ofgem's role as an energy market regulator.[7] The 'Review of Ofgem: call for evidence' concluded on February 28th, 2025.[8] This briefing addresses a hypothetical situation where the views of a theoretical company, PowerSwitch, were requested. Questions posed to ascertain PowerSwitch's views were like those asked of stakeholders in the original call for evidence. The first question posed was 'Should Ofgem's duties be streamlined, and if they should, views on which goals might be prioritised'.[9] The second question posed was "Views on Ofgem having enhanced investigatory powers and if they should be granted enhanced enforcement powers similar to CMA".[10] This briefing outlines: (a) key historical events impacting Ofgem's role; (b) Ofgem's trilemma and order of priority; (c) Ofgem's effectiveness of regulatory and concurrent powers; (d) PowerSwitch's views which may be expressed in the call for evidence.

Keywords: anti-competitive behaviour, effective competition, energy sector, net zero, Ofgem, sustainability, UK energy, UK regulation

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[2] Ofgem, 'About Us' <https://www.ofgem.gov.uk/about-us> accessed 14 September 2026.
[3] ibid
[4] Department for Energy Security and Net Zero, 'Ofgem Review: Final Report' (GOV.UK, 22 April 2026) <https://www.gov.uk/government/publications/ofgem-review-2026/ofgem-review-final-report> accessed 14 September 2026.
[5] The Climate Change Act 2008 (2050 Target Amendment) Order 2019, SI 2019/1056, Explanatory Note <https://www.legislation.gov.uk/uksi/2019/1056/note/made> accessed 14 September 2026.
[6] ibid
[7] Department for Energy Security and Net Zero, 'Review of Ofgem: Call for Evidence' (GOV.UK, 19 December 2024) <https://www.gov.uk/government/calls-for-evidence/review-of-ofgem-call-for-evidence> accessed 14 September 2026.
[8] ibid
[9] Department for Energy Security and Net Zero, 'A Review of Ofgem: Call for Evidence – Summary of Responses' (GOV.UK, 22 April 2026) 11 <https://assets.publishing.service.gov.uk/media/69ea165eed93f72cf81632e3/ofgem-review-cfe-responses.pdf> accessed 14 September 2026.
[10] ibid 19.

Introduction

This briefing outlines key issues affecting Ofgem, analyses the impact of relevant events and delivers recommendations in response to concerns raised by the Board of Directors of PowerSwitch and the Government of the United Kingdom ('UK'). The UK posed inquiries to PowerSwitch regarding their views on Ofgem's role. The first inquiry was 'Should Ofgem's duties be streamlined, and if they should, views on which goals might be prioritised'.[11] The second inquiry was 'Views on Ofgem having enhanced investigatory powers and if they should be granted enhanced enforcement powers similar to CMA'.[12]

This briefing is divided into four parts to address these inquiries. First, the relevant background information will be discussed. Second, an analysis is provided concerning Ofgem's trilemma of affordability, supply security, and sustainability and how these factors impact Ofgem's role. Third, how Ofgem's regulatory framework, regulatory powers, and concurrent powers have been ineffective in promoting consumer interests. Finally, answers will be provided to PowerSwitch's Board of Directors regarding any views they may express in response to the call for evidence. It will be demonstrated that Ofgem's duties should be streamlined with a focus on affordability, supply security and sustainability, in that order. Affordability is argued to align with Ofgem's primary role in protecting consumer interests. Supply security can be promoted by Ofgem and incentivised through legislation to attract capital investment in the industry. Sustainability is best addressed via legislation by incentivising capital investment into the emerging hydrogen solution. Additionally, Ofgem should not be granted enhanced investigatory or enforcement powers, as the CMA is better positioned to apply competition law.

Background: Ofgem's Role

Ofgem is a non-ministerial government department that functions as the energy sector's regulator. Ofgem's independence is provided for by statute, and it is enabled to cover its costs via a levy on licence holders.[13] Ofgem applies ex-ante regulation

[11] Department for Energy Security and Net Zero (n9) 19.
[12] Department for Energy Security and Net Zero (n9) 19.
[13] Utilities Act 2000 (UA 2000), s 8.

through primary legislation and possesses concurrent powers under the Competition Act 1998. Its policy objectives include creating affordability,[14] maintaining supply security,[15] and sustainability.[16]

Ofgem's Powers

Ofgem's regulatory powers enable it to (a) issue licences; (b) set licence conditions; (c) provide guidance; (d) manage changes to industry codes; and (e) enforce rules through its regulatory powers.[17] Ofgem possesses concurrent powers under the Competition Act 1998 to enforce Chapter I and Chapter II prohibitions,[18] and under the Enterprise Act 2002 to conduct market studies.[19]

Ofgem builds relationships with energy companies by providing guidance.[20] Applying competition powers requires significantly more time than regulatory powers, as the former often requires an investigation to determine if there was an abuse of power or anticompetitive agreements. Additionally, the appeal routes for applying competition powers lead to the Competition Appeal Tribunal (CAT), which can decide the case on the merits. In contrast, the appeal routes for applying regulatory powers go to a judicial review, which can send the decision back for reconsideration. Regulatory action for companies is often ex-ante through licensing standards, while competition action is often ex-post through rules applied after a breach. Applying regulatory powers becomes the default choice in most circumstances. This becomes obvious when Ofgem applied concurrent powers in only two cases (the National Grid and Dyball cases, discussed below under the effectiveness of the powers). These are the significant considerations for Ofgem when deciding whether it should apply regulatory or concurrent powers.[21]

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[14] Electricity Act 1989 (EA 1989), s 3.
[15] Gas Act 1986 (GA 1986), s 4AA.
[16] Energy Act 2023 (EA 2023), s 202.
[17] Ofgem, 'What do we regulate' <https://www.ofgem.gov.uk/about-us/what-we-regulate> accessed 14 September 2026.
[18] Competition Act 1998 (Concurrency) Regulations 2014, SI 2014/536.
[19] Enterprise Act 2002, pt 4.
[20] Ofgem (n17).
[21] Competition and Markets Authority, 'Concurrency Review: Call for Inputs' (GOV.UK, 24 August 2023) 2–6 <https://assets.publishing.service.gov.uk/media/64e5e1951ff6f3000d70ae41/Concurrency_review_call_for_inputs__.pdf> accessed 14 September 2026.

Consumers

Consumers are typically either on a 'fixed-price tariff' (FPT) or a 'variable-price tariff' (VPT).[22] FPT provides energy at a fixed price, but terminating a contract early may incur an exit fee. VPT offers energy at varying prices, but there is no exit fee for switching to a different provider. Customers automatically move to a VPT after their FPT contract ends unless they create a new deal with their current energy supplier or move to a new energy supplier.[23] The Competition and Markets Authority estimated that 70% of customers of the six largest energy firms on the VPT were overcharged by £1.4 billion per year compared with what would be charged in a fully competitive market.[24] In response, the Tariff Cap Act 2018 was passed to protect consumers by requiring Ofgem to implement a 'price-cap tariff' (PCT).[25]

Supplier Exits

Between mid-2021 and spring 2022, the wholesale market price increased to unprecedented levels.[26] Wholesale energy prices increased significantly for energy suppliers, but they were constrained in passing these costs on to consumers because customers were either on an FPT or a PCT. Due to rising wholesale costs between July 2021 and May 2022, 29 energy suppliers exited the market, leaving 23.[27] Under the Supplier of Last Resort (SOLR) process, when a supplier fails, Ofgem transfers its customers to an existing supplier at a higher cost to consumers.[28]

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[22] Simon Wood, 'Should I Choose a Fixed or Variable Energy Tariff?' (British Gas, 26 August 2026) <https://www.britishgas.co.uk/energy/guides/fixed-vs-variable-tariffs.html> accessed 14 September 2026.
[23] National Audit Office, *The Energy Supplier Market* (HC 2022–23, 68, 2022) 16 https://www.nao.org.uk/wp-content/uploads/2022/03/The-energy-supplier-market.pdf accessed 14 September 2026.
[24] ibid.
[25] Suzanna Hinson, 'The Domestic Gas and Electricity (Tariff Cap) Act 2018' (House of Commons Library, Briefing Paper CBP-8242, 2018) 4, 51 https://researchbriefings.files.parliament.uk/documents/CBP-8242/CBP-8242.pdf accessed 14 September 2026.
[26] National Audit Office (n23) 6.
[27] National Audit Office (n23) 6.
[28] National Audit Office (n23) 6-7.

Suppliers recover the costs they incur as an SOLR and pass these costs on to customers as part of their standing charge.[29] The standing charge is the portion of a customer's bill regardless of the amount of gas or electricity used.[30] Twenty-two supplier failures in 2021 resulted in a £94 per-customer standing charge increase, representing an 8% increase in average costs for consumers.[31] About ¾ of these costs were due to the increase in the weekly average wholesale gas price.[32] SOLR cost recovery can take 12-15 months from the point of appointment, contributing to the increased energy costs experienced by customers in 2022 and 2023.[33] Costs associated with SOLR likely represent transfer costs, and customers would have paid less if the small supplier had not entered the market.[34]

Ukraine-Russian War 2022

Gas and electricity prices have increased significantly since the war in Ukraine.[35] These increased prices have a significant impact on UK consumers. UK Consumers paid, on average, 51% more for electricity and 98% more for gas in 2022 than the previous year.[36] The available data suggests that prices are unlikely to revert to their pre-2022 levels anytime soon.[37]

Rough Gas Storage Facility

The "Rough gas storage facility" accounted for 70% of Great Britain's gas storage before its closure in 2017.[38] Without "Rough", the UK has enough gas stored for nine days' use, while Germany, France, and the Netherlands have gas stored for 89, 103,

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[29] National Audit Office (n23) 27.
[30] National Audit Office (n23) 27.
[31] National Audit Office (n23) 28.
[32] National Audit Office (n23) 29.
[33] National Audit Office (n23) 27.
[34] National Audit Office (n23) 30.
[35] Iona Stewart and Paul Bolton, 'Domestic Energy Prices' (House of Commons Library, Research Briefing CBP-9491, 30 June 2025) 8 <https://researchbriefings.files.parliament.uk/documents/CBP-9491/CBP-9491.pdf> accessed 14 September 2026.
[36] ibid 60.
[37] Iona Stewart (n35) 60.
[38] Competition and Markets Authority, 'Rough Gas Storage Undertakings Review: Final Decision' (GOV.UK, 13 December 2017) 2, 9–10 <https://assets.publishing.service.gov.uk/media/5a30ff94ed915d2cf25281ac/rough-final-decision.pdf> accessed 14 September 2026.

and 123 days, respectively.[39] Rough reopened in September 2022, becoming the UK's largest gas storage facility and is planned to be repurposed for hydrogen storage.[40]

The Hydrogen Solution

Department for Business, Energy & Industrial Strategy indicated that Hydrogen could account for 20%-35% of energy production by 2050.[41] Hydrogen as a fuel source carries a significantly higher cost than high-carbon fuel options.[42] Hydrogen fuel may require new networks and technological developments to enable its use at great scale.[43] The nascent state of the hydrogen market would require significant government support to attract the investment needed for meaningful development.[44] Overcoming these challenges would require significant investment in new networks, technological advancements, storage capabilities, and regulatory support (especially for first movers setting up the initial high-cost networks).

Fracking & Reliance on Imports

A moratorium on fracking in the UK was placed in 2019.[45] 69% of the UK's gas supply comes from the North Sea continental shelf, 30% from 'Liquefied Natural Gas' (LNG)

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[39] Katie Weston and Lewis Moynihan, 'Fears UK Has "Nine Days" of Gas Left Compared to France's 103' (Daily Record, 28 October 2022) <https://www.dailyrecord.co.uk/news/uk-world-news/british-gas-nine-days-supply-28350173> accessed 14 September 2026.
[40] Chris O'Shea and Martin Scargill, 'The Reopening of Rough Gas Storage' (Centrica Storage Limited, October 2022) 5 <https://www.centrica.com/media/5790/rough-investor-and-analyst-presentation.pdf> accessed 14 September 2026.
[41] Department for Business, Energy & Industrial Strategy, *UK Hydrogen Strategy* (CP 475, 2021) 9 <https://assets.publishing.service.gov.uk/media/64c7e8bad8b1a70011b05e38/UK-Hydrogen-Strategy_web.pdf> accessed 14 September 2026.
[42] ibid 54.
[43] Department for Business (n41) 15.
[44] Department for Business (n41) 71.
[45] Department for Business, Energy & Industrial Strategy, 'Government Ends Support for Fracking' (GOV.UK, 2 November 2019) <https://www.gov.uk/government/news/government-ends-support-for-fracking> accessed 14 September 2026.

and 1% from interconnector imports, as per Figure 1.[46] The UK's primary source of LNG is the USA, a country that strongly supports fracking.[47]

Due to the territorial accounting of greenhouse gas emissions, shifting from fracking to greater reliance on LNG imports offers a direct way to reduce the UK's reported greenhouse gas emissions. The UK reports only the emissions of greenhouse gases occurring within its nation, in accordance with the United Nations Framework Convention on Climate Change,[48] and the provisions of the UK's Climate Change Act 2008.[49] According to a report by the Natural Resources Defence Council (NRDC), US emissions will increase due to LNG exports, while importing countries artificially lower their greenhouse gas emissions and underestimate their true climate impact by at least 31%.[50] The UK has artificially reduced its greenhouse gas emissions by increasing its reliance on LNG imports rather than pursuing fracking, ultimately imposing greater costs on consumers.

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[46] Department for Energy Security and Net Zero, 'Midstream Gas System: Update to the Market' (GOV.UK, 20 March 2023) fig 1 <https://www.gov.uk/government/publications/midstream-gas-system-update-to-the-market/midstream-gas-system-update-to-the-market> accessed 14 September 2026.

[47] US Department of Energy, *Economic and National Security Impacts under a Hydraulic Fracturing Ban* (Report to the President, January 2021) ii–iii <https://www.energy.gov/hgeo/articles/economic-and-national-security-impacts-under-hydraulic-fracturing-ban> accessed 14 September 2026.

[48] United Nations, *United Nations Framework Convention on Climate Change* (1992) 10, 23 <https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf> accessed 15 September 2026.

[49] Climate Change Act 2008, ss 29(1)(a) and 94(1).

[50] Christina Swanson and Amanda Levin, *Sailing to Nowhere: Liquefied Natural Gas Is Not an Effective Climate Strategy* (NRDC Report R: 20-08-A, December 2020) 4 https://www.nrdc.org/sites/default/files/sailing-nowhere-liquefied-natural-gas-report.pdf accessed 15 September 2026.

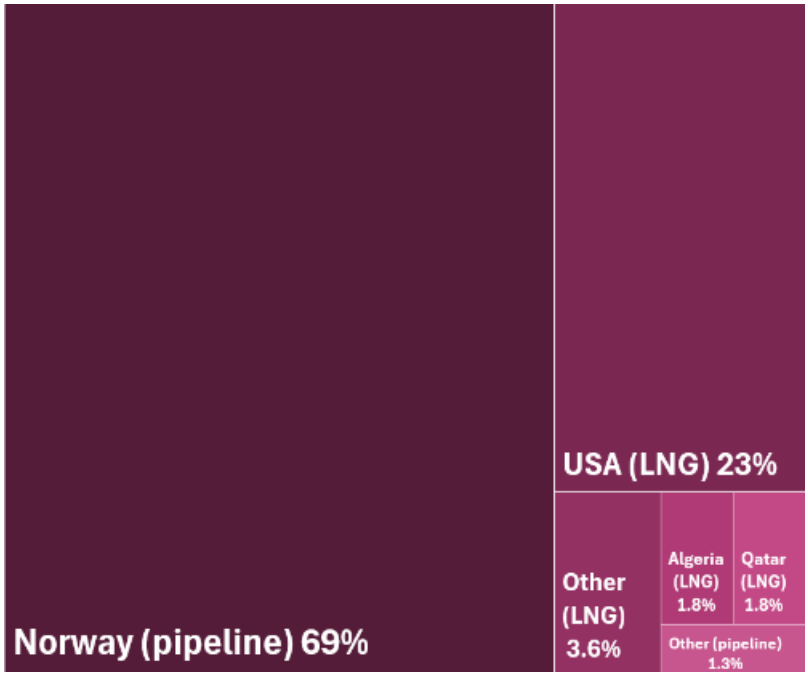


Figure 1: UK imports of natural gas by country of origin, 2025[51]

Analysis: Affordability

Affordability was threatened as the exit of suppliers concentrated market power and diminished consumer protection. Concentrated market power is evident, as the six largest suppliers (Octopus, British Gas, E.ON, OVO, EDF, and Scottish Power) account for over 90% of market share.[52] Supplier exits have reduced competition in this sector, with twenty-three active suppliers remaining in the domestic gas and electricity retail markets.[53] The inability of new entrants to stay in the market is a consideration for any informed consumer, as switching to a new entrant places the consumer at risk of higher costs if the supplier fails. Increased costs to consumers are evident in the supplier failures of 2021, which resulted in all customers paying an average of £94, regardless of how much energy they consumed.[54] Potential regulatory measures to deconcentrate the market include temporary asymmetric regulation, such as reduced

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[51] Department for Energy Security and Net Zero, 'Digest of UK Energy Statistics: Annual Data for UK, 2025' (Statistical Release, 30 July 2026) ch 4, 3 <https://assets.publishing.service.gov.uk/media/688a0938a11f85999440922e/DUKES_2025_Chapter_4.pdf> accessed 14 September 2026.
[52] Ofgem, *State of the Market Report: Energy Retail Markets Highlights* (April 2025) 14 <https://www.ofgem.gov.uk/sites/default/files/2025-04/OFG2296_State%20of%20the%20Market%20Report.pdf> accessed 14 September 2026.
[53] ibid.
[54] National Audit Office (n23) 28.

obligations associated with VAT, Policy costs, and Other costs for new market entrants, as cheaper tariffs were considered the top reason for customers changing suppliers.[55] Other regulatory measures include, but are not limited to, minimising regulatory obligations for applicants demonstrating greater financial resilience, streamlining licensing processes for suppliers with a lower likelihood of exiting the market, and supporting new entrants in attaining greater financial resilience. For asymmetric regulation to be utilised effectively, Ofgem may incur greater monitoring costs to address any potential regulatory arbitrage.

To promote competition and encourage the growth of small market players, Ofgem should provide easy access to infrastructure, supply, and essential facilities. Gaining access may be difficult if vertically integrated market players control the facility or infrastructure. Competition powers can be used to address refusal to deal/supply and access-to-essential-facility abuses. Small market players may lack the financial resilience to remain in the market until the issue is resolved. The CMA determined that vertical integration yields limited benefits for market players in the industry and does not adversely affect competition.[56] While vertical integration may yield limited long-run benefits, it is important to address how Ofgem should handle potential issues to reduce the market exits associated with it. Ofgem should utilise and continue to rely on an ex-ante regulatory approach to better protect small market players, encourage supplier entry through regulatory assurance, and reduce the likelihood of future supplier exits.

Supply Security

The closure of the Rough facility in 2017 reduced the UK's gas storage capabilities. The UK's 2019 moratorium on fracking reduced energy production by cutting off a potential source of natural gas. Diminished storage capacity and a moratorium on fracking reduced supply security and led to greater reliance on LNG imports to meet the UK's energy demand. After Russia's 2022 invasion of Ukraine, UK energy prices

[55] Ofgem (n52) 4-5, 9.
[56] Competition and Markets Authority, *Energy Market Investigation: Final Report* (24 June 2016) 347 <https://assets.publishing.service.gov.uk/media/5773de34e5274a0da3000113/final-report-energy-market-investigation.pdf> accessed 14 September 2026.

peaked, primarily due to higher wholesale energy costs.[57] Increasing wholesale costs and significant reliance on LNG imports heightened volatility in the energy industry and associated market risks for stakeholders.

The UK's investment in hydrogen energy to meet net-zero goals requires significant upfront capital before any hydrogen is produced. It will be 2050 before hydrogen potentially accounts for 20%-35% of energy production, effectively leaving consumers with the high costs associated with LNG imports until then. Companies providing Demand-Side Response (DSR) energy solutions help to address supply security and affordability issues. DSR encourages consumers and businesses to reduce energy consumption during peak hours, thereby reducing the amount of power that must be generated. Some of the associated cost savings are passed to consumers as electricity is cheaper during off-peak hours. Smart meters are essential for providing DSR services to households, and stakeholders access the associated data through the Data and Communications Company, which is regulated and licensed by Ofgem.[58] Ofgem and the UK government should work to develop legislation and a regulatory framework that encourage investment in storage infrastructure, renewable energy sources, and DSR systems to ensure greater supply security while facilitating the UK's desired transition to renewable energy.

Sustainability (Decarbonisation & Net Zero)

The UK Government's Net Zero Growth Plan requires the decarbonisation of the power system by 2035 and net-zero carbon emissions (where total carbon emissions are equal to zero) by 2050.[59] The strategy undertaken by the UK has been more ambitious than that of other major economies, as per Figure 2.[60] To fulfil Government goals, there has been a push towards renewable energy sources, such as the hydrogen energy solution discussed. Reliance on other energy sources will continue, as hydrogen energy is expected to supply 20-35% of energy production by 2050. DSR can assist in integrating renewable energy sources into the network by encouraging

[57] Iona Stewart (n35) 10.
[58] Explanatory Notes to the Smart Meters Act 2018, paras 4, 9.
[59] The Climate Change Act 2008 (n5).
[60] Department for Energy Security and Net Zero, 'Powering Up Britain: Net Zero Growth Plan' (Policy Paper, 30 March 2023) figure 1 <https://www.gov.uk/government/publications/powering-up-britain/powering-up-britain-net-zero-growth-plan> accessed 14 September 2026.

flexible behaviour from users while reducing consumers' carbon footprint.[61] Investment in other sustainable energy sources will also be required to eliminate reliance on natural gas. Incentivisation of investment can take the form of a monopoly window, monitored by the CMA, for the first mover to establish the new network, providing them with an opportunity to recoup a significant portion of the setup costs. The incentivization of capital investments is a significant obstacle to meeting the UK's sustainability goals, and the UK government would best address it through legislation, subsidies, investment contracts, and CMA monitoring.

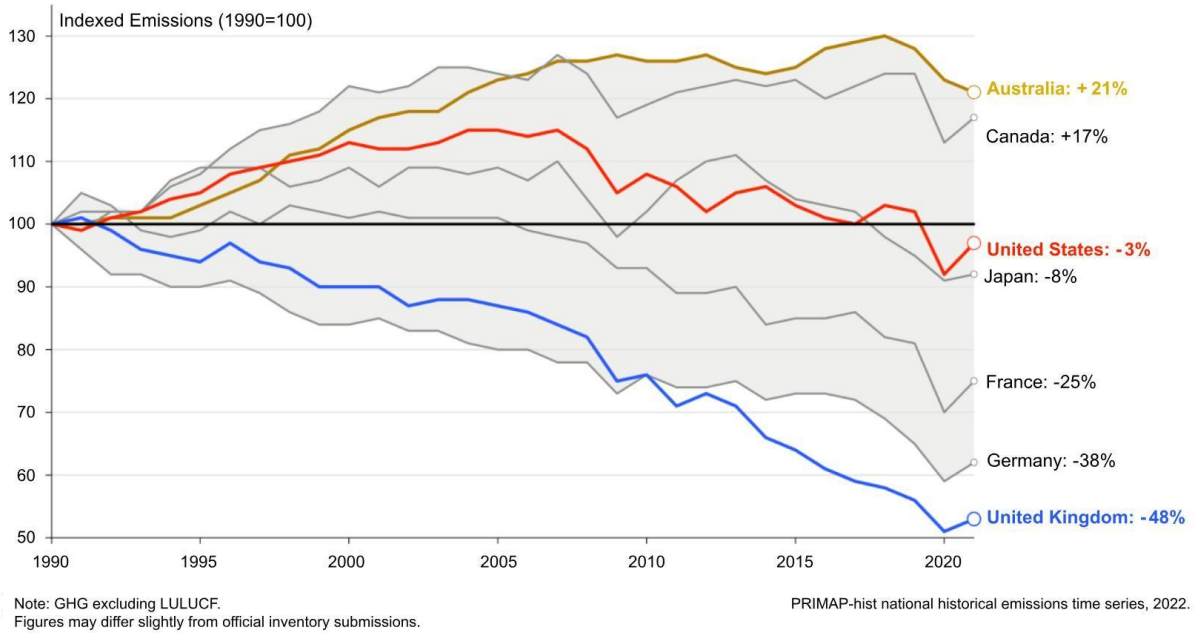


Figure 2: GHG emissions in the UK and other major economies, 1990-2021[62]

Effectiveness of Powers

2024 data shows that over 90% of the market share is controlled by the top six energy suppliers, as shown in Figure 3.[63] The oligopolistic nature of the market has the potential for tacit collusion. Alongside vertically integrated market players and high market volatility, there are potential opportunities for firms to generate higher profits at the expense of consumers. Opportunities for market players to collude or act as a cartel can make it more difficult for new entrants to enter the market or maintain a

[61] National Energy System Operator, 'On-Boarding Flexibility' (NESO) <https://www.neso.energy/industry-information/balancing-services/flex-onboarding> accessed 14 September 2026.
[62] Department for Energy Security and Net Zero (n59).
[63] Ofgem (n52) 14.

market presence. As collusion can be difficult to detect, the CMA updated its cartel leniency guidance on October 28, 2025, to reward the first party to report collusion.[64] Market concentration can lead to decreased competition and require greater regulatory oversight to identify abuses of dominance or anticompetitive agreements.

Market Shares	24Q3
Octopus	23%
British Gas	20%
E.ON	16%
OVO	13%
EDF	11%
Scottish Power	8%
Other	9%

Market Shares	24Q3
British Gas	27%
Octopus	24%
E.ON	14%
OVO	11%
EDF	9%
Scottish Power	7%
Other	9%

Figure 3: Electricity and Gas Market Shares in UK Domestic Retail Market, Quarter 3 2024[65]

The UK energy market is at risk of pricing abuses, including but not limited to excessive and discriminatory pricing. Energy suppliers charged customers excessive prices on VPT, as determined by the CMA, leading to the introduction of the PCT in 2019. The number of consumers subject to the PCT increased from 15 million to 22 million between April 2021 and April 2022.[66] The increase in PCT consumers, alongside limited customer movement between suppliers, demonstrates a shift in the regulatory framework towards direct price intervention.

Discriminatory pricing was evident across tariff types, as many small suppliers had customers on FPT.[67] The small energy suppliers were unable to increase energy prices for FPT customers; therefore, as wholesale energy prices increased, these suppliers

[64] Competition and Markets Authority, 'Applications for Leniency and No-Action in Cartel Cases' (CMA210, 28 October 2025) 10–11 <https://assets.publishing.service.gov.uk/media/68ffa89b394b8c2a6ddf5dce/Applications_for_leniency_and_no-action_in_cartel_cases.pdf> accessed 14 September 2026.
[65] Ofgem (n51) 14.
[66] National Audit Office (n23) 44.
[67] National Audit Office (n23) 44.

lacked the financial resilience to remain in the market.[68] The customers of the exiting suppliers were transferred to a new energy supplier through SOLR into a VPT contract. On average, this transfer cost £30 more per month for the remainder of the customer's original FPT contract.[69] Discriminatory pricing by payment method resulted in average prepayment bills costing around £130 less than direct debit and almost £220 less than standard credit bills.[70] Where a supplier can demonstrate objective factors that justify the price differences, there is no abuse of dominance.[71] While energy companies may justify these price differences, significant price disparities stemming from tariffs and payment methods demonstrate the limits of Ofgem's regulatory framework in fulfilling its role in protecting consumer interests.

Ofgem used its concurrent powers in relatively few cases to prevent anticompetitive behaviour. One action was against the National Grid in 2008,[72] and another against Dyball and associated companies in 2019.[73] As discussed in the 'Ofgem's Powers' section, Ofgem has significant considerations when deciding to apply regulatory or concurrent powers, and it leans heavily on the former. These considerations include (but are not limited to): (a) relationships with energy companies; (b) competition actions taking significantly more time than regulatory actions; (c) the route of appeal for competition action is through CAT and for regulatory action is through judicial review; (d) regulatory action is often ex-ante while competition action is often ex-post. Based on these considerations and Ofgem's limited application of concurrent powers, it is evident that Ofgem will regularly utilise regulatory powers even if they may not provide the best solution. Without effective use of its competition powers, there must be a substantial reliance on the CMA to enforce competition laws and prevent anticompetitive behaviour in the concentrated energy market.

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[68] National Audit Office (n23) 44.
[69] National Audit Office (n23) 7.
[70] Iona Stewart (n35) 30.
[71] Case T-168/01 *GlaxoSmithKline Services Unlimited v Commission* EU:T:2006:265, [2006] ECR II-2969, para 177. Although this case concerns EU competition law under Article 101 TFEU, its reasoning remains persuasive in UK Competition law where similar principles arise under Competition Act 1998 Chapter I.
[72] Ofgem, 'Supreme Court Refuses National Grid Appeal on Gas Metering Case' (Statement, 5 August 2010) <https://www.ofgem.gov.uk/sites/default/files/docs/2010/08/national-grid-statement5aug_1.pdf> accessed 14 September 2026.
[73] Ofgem, 'Ofgem Finds E Gas and Electricity, Economy Energy and Dyball Associates in Breach of Competition Law' (Press Release, 30 May 2019) <https://www.ofgem.gov.uk/press-release/ofgem-finds-e-gas-and-electricity-economy-energy-and-dyball-associates-breach-competition-law> accessed 14 September 2026.

PowerSwitch's Views

Ofgem should address the trilemma by prioritising affordability first, supply security second, and sustainability third. Before the events listed in the 'Background' section of this briefing, the CMA recommended, in 2016, that Ofgem's statutory objectives and duties may limit its ability to promote effective competition.[74] Ofgem's statutory objectives and duties have increased significantly since the 2016 recommendation, supporting the assertion that Ofgem's regulatory framework has been unable to protect customer interests. Sustainability obligations have moved the UK away from fracking and towards greater reliance on LNG imports, which significantly contribute to the volatility of market wholesale prices. Without pre-established networks and infrastructure for sustainable energy sources to replace the loss of energy storage and production capabilities, consumers are bearing the costs associated with greater reliance on LNG imports. Supply security can be improved by incentivising capital investment in sustainable energy sources and storage capabilities. The UK government can encourage these initiatives by mechanisms including, but not limited to, legislation, government contracts, and subsidies.

Additionally, Ofgem's regulatory framework and UK legislation can be used to encourage DSR systems to improve supply security and sustainability goals. Affordability would best be addressed by a strong regulatory framework which: (a) reduces market concentration by encouraging movement between suppliers; (b) provides support for small market suppliers to reduce supplier exits due to slow conflict resolution or high market volatility; (c) provides greater support to new market entrants through temporary asymmetric regulation and streamlined licensing processes; and (d) ease of access to facilities and infrastructure controlled by vertically integrated market players. For these reasons, Ofgem is best positioned to address affordability, supply security, and sustainability, in that order.

No, Ofgem should not be granted enhanced investigatory and enforcement powers. Ofgem has utilised its competition law powers in two cases. Over 90% of the market

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[74] CMA, *Energy Market Investigation: Final Report* (24 June 2016) 76 <https://assets.publishing.service.gov.uk/media/5773de34e5274a0da3000113/final-report-energy-market-investigation.pdf> accessed 14 September 2026.

share remains concentrated between the top six energy suppliers. The CMA is better positioned to enforce competition law due to its independence from sector-specific regulatory relationships, its expertise in procedural matters, and its enforcement experience gained from engaging with a variety of sectors. The CMA should work cooperatively with Ofgem to enforce competition law and develop a deconcentrated market in which new entrants with innovative solutions could help Ofgem address the trilemma.

Conclusion

Ofgem's role should be streamlined to clarify the priority of affordability, supply security, and sustainability goals, in that order. DSR systems should be encouraged through a regulatory framework and government intervention to manage supply security and sustainability. Ofgem should not be granted enhanced investigatory and enforcement powers but should work with the CMA to enforce competition law and investigate anticompetitive behaviour. Outlining Ofgem's role in addressing the trilemma would lead to a more robust regulatory framework, enhancing its ability to promote effective competition and protect consumer interests.

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Should Scope 3 Emissions be Assessed?

A Comparative Analysis of Norway and the United Kingdom

Zain Bhatti[1]

Abstract

This article examines the ongoing legal developments and pressures to include Scope 3 greenhouse gas emissions (downstream combustion emissions) as part of the Environmental Impact Assessment (EIA) for oil and gas licensing. Primarily focusing on the Norwegian Continental Shelf, this article focuses on Norwegian laws and compares them against those in the United Kingdom (UK). A brief analysis will also be provided on the Supreme Court's decision in the landmark case of *R (Finch) v Surrey County Council and others* [2024] UKSC 20, which established that Scope 3 emissions are to be a mandatory component in completing an EIA in the UK. Finally, this article also considers the advisory opinion put forward by the International Court of Justice on climate change. All these factors will be considered before assessing what these legal developments mean in practice for oil and gas companies preparing a license application on the Norwegian Continental Shelf.

Keywords: Environmental Impact Assessment, greenhouse gas emissions, gas, Norway, Norwegian Continental Shelf, oil, United Kingdom.

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Introduction

The aim of this article is to provide a strategy for a company's current position when preparing an application for oil and gas activities in the Norwegian Continental Shelf. This article will therefore provide an overview of the current application process, which will be supported by legal evidence and an advisory proposal for future steps.

A Push to Include Scope 3 Emissions

Greenhouse gases (GHGs) are gases that trap heat within the earth's atmosphere.[2] On a global level, it is now recognised that human activities have increased GHG concentrations, leading to a rise in global warming and climate change issues. In response, there has been an international drive towards reducing these emissions. Norway, for instance, aims to become a net zero society by 2050.[3] Trying to achieve these goals will require stronger measures to cut and identify emissions. One such measure is to try and make Scope 3 GHG emissions a requirement of the Environmental Impact Assessment (EIA). This assessment is the global standard for measuring GHG emissions and is set out in the Greenhouse Gas Protocol.[4] Scope 3 (combustion) emissions cover all indirect emissions not accounted for by Scope 2 (emissions generated by the energy bought and used).[5] In 2023, it was found that Scope 3 emissions accounted for as much as three-quarters of total emissions.[6] As most companies do not report Scope 3 emissions, actual emission figures are likely to be much higher than officially reported.[7] This reinforces the drive for making Scope 3 emissions reporting mandatory. Greater transparency will allow for the implementation of effective reduction measures.[8]

Scope 3 Emissions in EIAs: Legal Status and Timing

In the case of *Greenpeace Nordic and Nature & Youth v Energy Ministry*, Greenpeace and Nature & Youth argued that the Norwegian Energy Ministry acted unlawfully in

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[2] National Grid, 'What are Greenhouse Gases?' (NG, 2023) <https://www.nationalgrid.com/stories/energy-explained/what-are-greenhouse-gases> accessed 2 October 2025.
[3] Klimautvalget 2050, 'Mandate' (2023) <https://klimautvalget2050.no/mandate/> accessed 2 October 2025.
[4] Greenhouse Gas Protocol, 'A Corporate Accounting and Reporting Standard' (WRI, 2004) <ghg-protocol-revised.pdf> accessed 3 October 2025.
[5] Normative, 'Scope 1,2, and 3 Emissions Explained' (2026) < Scope 1, 2 and 3 Emissions Explained: Complete Guide - Normative> accessed 3 October 2025.
[6] Mia Emborg, Shannon Lloyd and Stig Olsen, 'Why Process -Level Scope 3 Accounting is Needed for Delivering Supply Chain Greenhouse Gas Emission Reduction' (2023) *Integrated Environmental Assessment and Management* (19, 2023), 1165.
[7] Mathilde Augustin, 'Not All Companies Disclose Emissions From Their Investments, and That's a Problem for Investors' (The Climate News, 2024) <Not All Companies Disclose Emissions From Their Investments, and That's a Problem for Investors - Inside Climate News> accessed 3 October 2025.
[8] (n6), 1165-1167.

their approval for the development and operation of three oil and gas fields.[9] They argued that the EIAs failed to include Scope 3 emissions, which resulted in a breach of the government's obligation under the EU Directive,[10] the Petroleum Act,[11] and the Norwegian Constitution, all of which guarantees a citizen's right to a healthy environment.[12] In January 2024, the Oslo District Court agreed with Greenpeace, which effectively halted the project.[13] The government appealed this decision and in October 2024, the court overturned the suspension of the three oil fields.[14] Further to this, the court argued that it is for Parliament and government to assess these petroleum policies, not the judiciary.[15]

A Debated Matter

The above-noted case was also referred to the European Free Trade Association (EFTA) court for an advisory opinion.[16] The court clarified that GHGs released from the combustion of petroleum products are considered 'effects', which are in line with the purpose of the EU, EIA Directive. For this reason, they should be included in the EIA.[17] It is important to note that this opinion is advisory and not legally binding. Thus, until it is adopted into Norway's national law, it does not become enforceable. Given Norway's obligation under the European Economic Area (EEA) Agreement, there is a duty to both implement and apply these directives to ensure uniformity of EU Law.[18]

In April 2025, the Supreme Court overturned the ruling and sent the case back to the Court of Appeal. It emphasised that its purpose is to protect EEA rights where there may be a breach of the EIA Directive, which may lead to significant environmental harm from the lack of an adequate impact assessment.[19] At the time of writing, the matter is still pending and remains unresolved. The decision of the Court of Appeal will determine whether Scope 3 emissions must be formally included in an EIA. During

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[9] *Greenpeace Nordic and Nature & Youth v Energy Ministry* [2023] Norwegian Supreme Court 24/464.
[10] Directive 2014/52/EU of the European Parliament and of the Council, amending Directive 2011/92/U on the assessment of the effects of certain public and private projects on the environment.
[11] Norwegian Offshore Directorate, Act 29 of November 1996 No 72 relating to petroleum activities.

[12] Norwegian Constitution, s 112 (NHRI, 2025) <4. Section 112 of the Norwegian Constitution - NIM> accessed 4 October 2025.
[13] *Greenpeace Nordic and Nature & Youth v Energy Ministry* [2023] Norwegian Supreme Court 24/464.
[14] ibid
[15] (n13)
[16] *The Norwegian state represented by the Ministry of Energy v Greenpeace Nature and Youth Norway* [2025] EFTA Court E-18/24.
[17] Agreement on the European Economic Area, European Union Treaties 1992, Article 7.
[18] Greenpeace, 'Victory for Youth and Environmentalists in Norwegian Supreme Court: Illegal Oil and Gas Fields Must Halt (2025) <Victory for youth and environmentalists in Norwegian Supreme Court: Illegal oil and gas fields must halt - Greenpeace International> accessed 22 August 2026.
[19] Norwegian Offshore Directorate, 'Act 29 November 1996 No 72 Relating to Petroleum Activities' (2024) section 3-1, <Act 29 November 1996 No. 72 relating to petroleum activities - The Norwegian Offshore Directorate> accessed 22 August 2026.

this period of uncertainty, licenses may still be applied for and granted without incorporating Scope 3 emissions in the EIA. Following the EFTA Court's Advisory Opinion, it is anticipated that the requirement will soon be adopted and integrated into Norwegian national law. Until the courts deliver a final ruling, the inclusion of Scope 3 emissions will remain unsettled and a debated legal matter, not currently mandatory in the EIA.

When to Assess Scope 3 Emissions

Under the Petroleum Act 1996, before a new area is to be considered for licensing, the state must conduct an evaluation on the socio-environmental effects of the proposed petroleum activities.[20] After this is completed, a company may then participate in a licensing round. If successful, the company will be granted a production license. If a company subsequently finds a petroleum deposit and wants to develop it, they will be required to submit, well in advance, a proposed programme for conducting an EIA.[21] The EIA must be prepared and interpreted in line with the corresponding EU law directive,[22] After the EIA is completed and submitted, the licensee is then required to submit a plan for development and operation (PDO) to the Ministry for approval, outlining how the petroleum deposit will then be developed and operated.[23] If Scope 3 emissions are to be assessed, they will be accounted for at the stage prior to a submission of a PDO, and be submitted with the EIA.

Other North Sea Countries

There is currently another North Sea country that requires Scope 3 emissions to be assessed in the EIA. This country is the UK. In 2024, the UK Supreme Court concluded that Scope 3 emissions are required to be assessed in the EIA.[24] The UK had previously transposed the EU Directive into national law prior to the ruling.[25] The Court emphasised that there is a presumption that extracted oil and gas will be refined, which would result in eventual combustion. This would therefore have an indirect effect on the environment and would also increase global GHG. For this reason, the Court ruled that Scope 3 emissions must be included in the EIA.[26] Although this was an onshore oil and gas project, the Court's interpretation would also apply to offshore projects.[27] As the highest judicial body in the UK, this ruling would also bind future cases. As

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[20] Norwegian Offshore Directorate, Act 29 of 1996 No 72 relating to petroleum activities, s 22.
[21] Directive 2011/92/EU as amended by Directive 2014/52/EU [2014].
[22] Directive 2011/92/EU as amended by Directive 2014/52/EU [2014] Article 3.
[23] (n19), s 4-2.
[24] The Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020.
[25] *R (Finch on behalf on the Weald Action Group & Others) v Surrey County Council (& Others*) [2024] UKSC 20.
[26] ibid
[27] *Petitions by Greenpeace Limited* [2025] CSOH 10.

countries become more responsible for the effects of burning fossil fuels, there will undoubtably be a push to make licenses align themselves more with climate targets, such as the Paris Agreement and Norway's own 2050 net zero commitment, as discussed above. By incorporating Scope 3 emissions, countries will be able to meet these goals more efficiently.

After initial approvals for a project that intended to extract oil and gas, two oil fields in Scotland (Rosebank and Jackdaw) were also recently challenged due to a lack of compliance.[28] Bound by the ruling of the above-noted case, the Outer Court of Session (Scotland's highest court for civil disputes) held that Scope 3 emissions must be included in EIAs.[29] Following the decision, the UK Government issued further supplementary EIA guidance, which focused on seven key areas of the EIA.[30] This, again, emphasises the growing need for Scope 3 emissions to be included in the EIA for the purposes of reducing global emissions.

Although other North Sea countries (such as the Netherlands, Denmark, and Germany) have no specific regulations with respect to Scope 3 emissions and their inclusion in EIAs, they are continuing to develop new technologies to try to process and reduce GHG emissions, such as carbon capture and windfarms. Norway, however, will likely follow the UK and require companies to include Scope 3 emissions to be included in their EIAs. It can be predicted based on the data we have today, that as more countries require this transparency, companies that fail to comply will suffer delays and extra costs associated with their projects.

Rejection of Licenses

In Norway, there are currently no restrictions on being granted a license if a company generates a large amount of Scope 3 GHG emissions. The idea behind Scope 3 emissions is that companies can become more responsible and aware of their pollution and, in doing so, can implement effective reduction measures such as electrification and carbon capture. After the EFTA Court's advisory opinion (making Scope 3 emissions mandatory in the EIA) the Norwegian Government still has the right to either grant or refuse a license after weighing up the environmental effects against the benefits gained. The UK's *Finch*[31] case established that a company cannot be refused a license if it produces environmental effects (such as GHG emissions). Instead, consent is to be given with full knowledge and understanding of the adverse effects that it causes. Therefore, if a company generates large amounts of Scope 3 emissions, this does not prevent an oil and gas license being granted.

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[28] ibid
[29] (n27).
[30] Clifford Chance, 'New EIA Guidance for Assessing Scope 3 Emissions in UK Offshore Oil and Gas' (2025) < 2025-EIA-Guidance-on-Scope-3-Emissions-in-Offshore-Oil-and-Gas-Projects.pdf> accessed 10 October 2025.
[31] (n25)

The International Court of Justice & Their Advisory Opinion on Climate Change

In July 2025, the International Court of Justice (ICJ) gave an advisory opinion about the obligations and legal consequences of states that fail to protect the climate system and environment from GHG emissions caused by humans, as requested by the UN General Assembly.[32] It was determined that each state, regardless of whether they were a part of any climate change treaties, had a duty to prevent significant harm.[33] The ICJ has urged countries to take fast and reasonable steps to help reduce global GHG emissions.

There is a duty on more affluent and resourceful countries to exercise a higher standard of care, however, there is still a caveat to this as there is only a duty to act within each country's own capabilities.[34] To achieve these goals, countries need to collaborate through international law, treaties, and agreements. Norway, for instance, is part of the Paris Agreement and is committed to reducing its GHG emissions by 50-55% from 1990 levels by 2030.[35]

Although the ICJ has not imposed a legally binding obligation on states to become more responsible for their GHG emissions, the international community maintains a high regard to such opinions. It is therefore likely that countries will adopt policies in conformity with such opinions. This will hopefully create a situation where countries around the world will include scope 3 emissions within EIAs and licence grants for future oil and gas projects. Looking to the future optimistically, as climate policies become more embedded in the oil and gas application process, there will also be an enhanced application process with reduced costs and delays. Regarding the EIAs themselves, this will likely enhance the application process by reducing associated costs and prevent delays. Finally, there is also an expectation for additional safeguards to be implemented before a Plan for Development and Operation (PDO) is granted.

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[32] O*bligations of States in Respect of Climate Change* (Advisory Opinion) [2025] ICJ Rep.
[33] ibid
[34] (n32).
[35] Ministry of Climate and Environment, 'Norway's first Biennial Transparency Report under the Paris Agreement' (*Government.no,* 4 February 2025) <Norway's first Biennial Transparency Report under the Paris Agreement - regjeringen.no> accessed 11 October 2025.