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# Pathways of scholarship for energy justice and the social contract

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The energy sector is increasingly out of date and in need of a new direction. There continues to be a myriad of issues emanating from the sector, most notably with climate change, environmental impacts and economic governance. Climate change continues at pace and with the United Nations having already declared there to be a climate emergency. Yet the response of energy sector stakeholders with the power to make the necessary changes in society remains slow. Too much investment continues in the old traditional energy sources. This research accepts these positions and that therefore the relationship between the stakeholders of the energy sector is imbalanced. In order to change this relationship so that it is fair, equitable and inclusive it is necessary to place (energy) justice at the core of a new social contract between the stakeholders of the energy sector (which includes policymakers, private and public energy companies, and citizens). This research advances 10 key pathways for scholarship on energy justice and the social contract. These topics need to be addressed from local to national and international levels. In resolving these research problems society can address the fundamental imbalances that exist between energy stakeholders and ensure a just and brave new world established through this new energy-just social contract.

**Keywords:** energy justice; social contract; just transition; climate change; economic inequality

## 1. Introduction

### 1.1. *The rise of energy justice and the social contract*

There is a certain irony when one considers that the energy sector needs to transition to a *brave new world*. The old energy technologies of the past – coal, oil and gas – threaten the very existence of nature and humans with the advent of climate change. People are losing their homes worldwide due to climate change and even countries are disappearing. Yet there is a reluctance to embrace new energy technology. This message is

completely in opposition to Aldous Huxley's warning in his text *Brave New World* that new technological advances would increase risk in society.<sup>1</sup>

Indeed, the energy sector is an outlier in the modern economy, the only part of it to still remain addicted to old technology. Food, transport and telecommunications, for example, have all embraced the winds of change. Yet the energy sector continues to spew messages that would have made the legendary Pinocchio happy.<sup>2</sup> Core messages about how new technologies are expensive and must compete in competitive markets with traditional energy sources are pushed globally. Yet the real-world impacts from the energy sector such as climate change and disastrous environmental impacts are now so numerous that they are considered normal. Equally, the tremendous subsidies (through direct finance, lack of treatment of their waste and procedural benefits) that the fossil fuel sector receives globally and that prevent a faster energy transition are clouded out of the news.

This paper<sup>3</sup> explores the need for a different approach to the energy sector by utilising energy justice, an approach that has received attention over the last decade across all disciplines. In correcting the problems of the energy sector one has to ensure the solutions are implemented in a sustained way, and that will be through a new social contract between the stakeholders of the energy sector. By exploring the relationship between energy justice and the social contract it is possible to deliver more systematic change to society.

### 1.2. *Exploring key themes for research in energy justice and the social contract*

This is a conceptual paper that focuses on energy justice and the social contract. The aim is to explore some of the key issues that a new social contract in the energy sector needs to resolve. The research matrix outlined in [Table 1](#) advances the issues that need to be addressed so as to restore the imbalanced relationship between energy sector stakeholders. [Table 1](#) details the key issues arising from how stakeholders 'think' of the energy sector today, and that involves a focus on energy activities, types of justices and unresolved rights issues.<sup>4</sup> The list here is not meant to be exhaustive, but rather is a first exploration of the scholarship needed in the area of energy justice and the social contract. Hence it is an original research contribution that is the first to explore what energy law should be for the next generation from 2030 to 2050.

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1 A Huxley, *Brave New World* (first published 1932, Harper Perennial 2005)

2 C Collodi, *The Adventures of Pinocchio* (Roydon 1983)

3 It should be noted that not all views in this paper will be held equally by all authors. It was a collective work and all comments and queries should be addressed to the corresponding author, Raphael Heffron, in the first instance.

4 In energy law and policy, a number of key ways have been advanced of how to think about the energy sector including energy sources, energy activities, energy drivers, energy justices and human rights. These 'ways to think' have been advanced in key research that includes: RJ Heffron and K Talus, 'The Evolution of Energy Law and Energy Jurisprudence: Insights for Energy Analysts and Researchers' (2016) 19 *Energy Research and Social Science* 1; RJ Heffron and K Talus, 'The Development of Energy Law in the 21st Century: A Paradigm Shift?' (2016) 9(3) *Journal of World Energy Law and Business* 189; RJ Heffron, *Energy Law: An Introduction* (2nd edn, Springer 2021); and RJ Heffron, A Ronne, A Bradbrook, JP Tomain and K Talus, 'A Treatise for Energy Law' (2018) 11(1) *Journal of World Energy Law & Business* 34

Table 1. Matrix of core issues (research topics) to re-balance the energy sector’s ‘social contract’.

<b>Issue</b>	<b>No.</b>	<b>Research topic and practitioner challenge</b>
Energy activity	1	The mining sector, law and policy
	2	Mining for critical minerals
	3	The electricity sector
Forms of energy justice	1	Restorative justice and waste management
	2	Taxation
	3	Investments
Unresolved human rights	1	Rights of future generations
	2	Education
	3	Small Island Developing States
	4	Indigenous communities

The structure of this paper is centred around this energy justice and social contract matrix. The second section explores energy activities focusing on the mining sector in general, then the critical minerals sector and then the electricity sector. Section 3 explores the forms of energy justice, first focusing on restorative justice before focusing in essence on what are two distributive justice issues, taxation and investments. The penultimate section (before the conclusion) highlights the human rights-related issues such as the rights of future generations, education, small island developing states (SIDS) and indigenous communities. Many topics will have overlapping issues with energy activities and forms of energy justice, but the matrix in Table 1 provides a dynamic platform for thinking of research in the area. The conclusion provides a final perspective and highlights some core areas to further focus on that are intrinsic to all the topics outlined in the matrix.

## 2. Energy activities

### 2.1 *The mining sector, law and policy*

The issue of mining is at the heart of the global transition from an economy based mainly on the exploitation of fossil fuels to one where the subsurface is used for new subsurface technologies (CO<sub>2</sub> storage, hydrogen storage) or extraction (deep geothermal). At the heart of this is the question of energy justice.<sup>5</sup> There are several key issues of importance here. Firstly, from the point of view of distributive justice, the exploitation of the resources generated by extractive activities benefits the whole territory where the projects are located, but also on a global scale, given the uneven international distribution of extractive potential, which means that some countries receive a rent.<sup>6</sup> The key question arises, how can we ensure that the investments and the wealth generated are distributed and used fairly and equitably by all?

Secondly, from a procedural justice perspective, mining activities range from exploration to recycling of materials and involve many stages (processing, transport, etc.), so the application of rights and freedoms at each stage of the value chain/energy life cycle is a fundamental issue. The issue of restorative justice is also important as

<sup>5</sup> I Del Guayo and A Cuesta, 2022. ‘Towards a Just Energy Transition: A Critical Analysis of the Existing Policies and Regulations in Europe’ (2022) 15(3) *Journal of World Energy Law & Business* 212

<sup>6</sup> ID Qurbani, RJ Heffron and ATS Rifano 2021. ‘Justice and Critical Mineral Development in Indonesia and across ASEAN’ (2021) 8(1) *The Extractives Industry and Society* 355

mining activities always have an impact on the social milieu and the environment.<sup>7</sup> It is therefore crucial to design responsible mining activities with a view to reducing and offsetting impacts.

There are additional perspectives from the point of view of recognition justice; the issue of protecting the interests and rights and freedoms of stakeholders means it is important to promote consultation on policies and projects, and the protection of spaces and landscapes, biodiversity, and health. There is also an issue of cosmopolitan justice, because if regional strategies and competition emerge, the fate of all humanity will be tied up in mining decisions. From this point of view, the equitable distribution of resources and the functioning of the global market for materials and substances is a crucial issue, and one where questions surrounding the historical debt contracted by states with regard to the climate (in the logic of differentiated responsibility) will also have to be addressed.

### 2.1.1. A NEW SOCIAL CONTRACT IS A NECESSITY

Since the beginning of the industrialisation of mining, projects have started with and without the permission of society and even government.<sup>8</sup> States, together with large public or private companies, have imposed mining activities on populations and territories that have damaged the environment, the lives of populations, ecosystems, resources, water, etc. Mining activities must include a role for all stakeholders from the territory of operation.<sup>9</sup> This is where the crucial question of the social contract arises. Further, while mining is important for economic activities and the life of societies, it must have respect for cultures and customs.

The fields of the social contract are located at three levels:

- at the local level, through contractualisation between project holders in an idea of co-construction;<sup>10</sup>
- at the national level, through mining strategies based on issues of responsibility and respect for rights and freedoms; and
- at the international level, through compensation or the fair distribution of investments in mining activities with a return for the states that hold the national resources.

Ideally, an international strategy for the subsoil should be based on the idea that the earth is a common good. In this context, scientific research activities are crucial for analysing the subsoil as a common good and for considering the differences and possible convergences between the legal regimes of land appropriation, exploitation

7 RJ Heffron, 'The Role of Justice in Developing Critical Minerals' (2020) 7(3) *The Extractives Industry and Society* 855; MC LaBelle, R Roxana Bucată and A Stojilovska, 'Radical Energy Justice: A Green Deal for Romanian Coal Miners?' (2021) *Journal of Environmental Policy & Planning* 1

8 U Pesch and others, 'Energy Justice and Controversies: Formal and Informal Assessment in Energy Projects' (2017) 109 *Energy Policy* 825

9 A Montoya, 'Post-Extractive Juridification: Undoing the Legal Foundations of Mining in El Salvador' (2023) 138 *Geoforum* 103667

10 RJ Heffron and others, 'The Emergence of the "Social Licence to Operate" in the Extractive industries?' (2021) 74 *Resources Policy* 101272

authorisation and investment distribution. The analysis of good international legal and social practices in terms of equity is also an important issue. This is where the question also arises of fair and proportionate compensation for the damage caused and the risks borne, through the establishment of adequate and reliable guarantees and funds (ie environmental impact or decommissioning funds). Sharing and solidarity are essential, as is the sharing of digital resources necessary for mining, which could be the subject of a common database to ensure disclosure and transparency throughout the sector.

## 2.2. *Mining for critical minerals*

Over the last decade, as society has aimed to rapidly transition from fossil to clean energy systems, mineral dependence has increased.<sup>11</sup> Thus, clean energy technologies are becoming the fastest-growing sector of demand.<sup>12</sup> In 2020, the European Commission identified 30 critical raw minerals (CRMs) considered to underpin daily life and modern technologies. It then proposed an EU Critical Raw Materials Act, emphasising that reliable and unimpeded supplies of these minerals are critical to society.<sup>13</sup> Similarly, the Australian government has designated 26 commodities as CRMs to support its Critical Mineral Strategy, which aims to grow the minerals sector given its importance to technological advancement.<sup>14</sup> This intensifies mining activities, but there seems to be a lack of specification on whether/how local communities will be protected from the negative impacts of mining – hence the need for a social contract with justice at its core.

In some communities, mining is welcomed because it contributes to employment and infrastructure development.<sup>15</sup> However, tensions can arise between local communities, companies and regional/national authorities. In this context, increasing material footprints comes at the expense of exploiting marginalised populations. A shift away from fossil fuels is necessary, but it is equally important to ensure equity throughout the supply chain.<sup>16</sup> It is inevitable that justice issues will arise. For example, EU projections of the need for more battery raw materials<sup>17</sup> have been met with protests from agricultural communities and civic movements in northern Portugal demanding an end

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11 Heffron, 'The Role of Justice in Developing Critical Minerals' (n 7)

12 International Energy Agency, *The Role of Critical Minerals in Clean Energy Transitions* (IEA 2021) <[www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions](http://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions)> accessed 20 February 2023, Licence: CC BY 4.0. According to the IEA, six times more mineral inputs in 2040 than today will be required to hit net zero *globally* by 2050.

13 European Commission Statement, 'Critical Raw Materials Act: Securing the New Gas & Oil at the Heart of Our Economy' (Blog of Commissioner Thierry Breton Brussels, 14 September 2022) <[https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT\\_22\\_5523](https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_22_5523)> accessed 28 February 2023

14 Australian Government, 'Critical Minerals at Geoscience Australia' <[www.ga.gov.au/scientific-topics/minerals/critical-minerals](http://www.ga.gov.au/scientific-topics/minerals/critical-minerals)> accessed 20 February 2023

15 K Komnitsas, 'Social License to Operate in Mining: Present Views and Future Trends' (2020) 9(6) *Resources* 79

16 N Meynen, D Marin and P Ten Brink, 2022. *Why Energy Justice? Towards a New Economic and Energy Framework in Europe* (Report by the European Environmental Bureau [EEB]), 24–25 <<https://eeb.org/wp-content/uploads/2022/11/Why-Energy-Justice-EEB-Reflection-Paper.pdf>> accessed 20 February 2023

17 European Commission, 'Supply Chain Challenges, Batteries: Global Demand, Supply and Foresight' (EU Science Hub, Raw Materials Information System [RMIS], 2023) <<https://rmis.jrc.ec.europa.eu/?page=analysis-of-supply-chain-challenges-49b749>> accessed 20 February 2023

to lithium mining concessions to power electric vehicles in urban areas.<sup>18</sup> This overexploitation will certainly lead to energy injustice if green energy companies are focused on ‘profits at any cost’.

In principle, a social contract provides some assurance of environmental protection, maintenance of quality of life, and cooperation with local communities.<sup>19</sup> The Polish government, for instance, was one of the first to sign a social contract with mining union delegates in May 2021, providing for the cessation of coal mining by 2049, and ensuring social protection for miners.<sup>20</sup> Such agreements are crucial because some governments have yet to succeed in enacting a unified law (Australia); in these cases, mining is regulated by various state and federal laws and implemented by the respective governments.<sup>21</sup>

Hence, are countries ready for critical minerals? To date, this is questionable, and even in the US there are still discussions about abolishing outdated laws that are 150 years old but still regulating mining (eg the US Mining Law of 1872).<sup>22</sup> Similar discussions have happened in the EU, following the realisation that a single comprehensive law is needed rather than various directives – such as the Conflict Minerals Regulations which only regulate four minerals.<sup>23</sup> These shortcomings highlight the need for thorough research by energy scholars to influence policy reforms related to the growth of critical minerals. It is necessary to understand how to protect the rights of local communities in particular, and the environment, and ensure appropriate regulation for mining companies. Therefore, and in this context, energy justice research provides a clear research platform to promote social contracts in the mining industry and promote a just transition to the wider society.

### 2.3. *The electricity sector*

Electricity is an essential component for the establishment of energy justice. The United Nations Sustainable Development Goal number 7 (‘Affordable and Clean

18 Some of these mines are also located near the Natura 2000 protected areas and therefore threaten the region’s agricultural heritage status: see Meynen, Marin and Ten Brink (n 16)

19 Komnitsas (n 15)

20 IEA/IRENA, ‘Social Contract for the Mining Industry’ (IEA/IRENA Renewables Policies Database, 2 May 2022) <[www.iea.org/policies/14222-social-contract-for-the-mining-industry](http://www.iea.org/policies/14222-social-contract-for-the-mining-industry)> accessed 20 February 2023

21 OECD iLibrary, ‘Mining Regulation in Selected Countries’ <[www.oecd-ilibrary.org/sites/b12ca2a9-en/index.html?itemId=/content/component/b12ca2a9-en](http://www.oecd-ilibrary.org/sites/b12ca2a9-en/index.html?itemId=/content/component/b12ca2a9-en)> accessed 21 February 2023; Australia Minerals, ‘Legislation, Regulations and Guidelines’ <[www.australianminerals.gov.au/legislation-regulations-and-guidelines](http://www.australianminerals.gov.au/legislation-regulations-and-guidelines)> accessed 20 February 2023

22 Earth Justice, ‘It’s Time to Update our Mining Laws for a Clean Energy Future’ (11 May 2022) <<https://earthjustice.org/article/critical-minerals-mining-reform>> accessed 20 February 2023

23 Council Directive 92/91/EEC of 3 November 1992 Concerning the Minimum Requirements for Improving the Safety and Health Protection of Workers in the Mineral-Extracting Industries through Drilling (11th Individual Directive within the meaning of art 16 (1) of Directive 89/391/EEC); Directive 2006/21/EC of The European Parliament and of The Council of 15 March 2006 on the Management of Waste from Extractive Industries and Amending Directive 2004/35/EC; Council Directive 92/104/EEC of 3 December 1992 on the Minimum Requirements for Improving the Safety and Health Protection of Workers in Surface and Underground Mineral-Extracting Industries (12th Individual Directive within the meaning of art 16 (1) of Directive 89/391/EEC); Regulation (EU) 2017/821 of the European Parliament and of the Council of 17 May 2017 Laying Down Supply Chain Due Diligence Obligations for Union Importers of Tin, Tantalum and Tungsten, Their Ores, and Gold Originating from Conflict-Affected and High-Risk Areas

Energy’ (SDG7) refers to the need to ensure ‘access to affordable, reliable, sustainable and modern energy for all’.<sup>24</sup> It is clear that the ‘modern energy’ referred to in that goal is electricity. A good as well as a service, electricity is essential for a dignified life, not to mention its paramount relevance for economic activities. Energy transition means transition to electricity supply, since it can be produced with renewable energies, satisfying environmental justice, too.

Society must be made aware of the need for the energy system to be electrified, while recognising that there are important sectors for global economic activity (such as heavy transport) that cannot be electrified. The core part of the social contract will consist of designing a new electricity model that is decarbonised (because electricity is produced with renewable energies), that is decentralised (because consumers are encouraged to produce their own energy), that is digitised (because new technologies are introduced in all phases of the electrical chain, including consumption) and that, in short, is democratised.

Further, today, a social contract for energy should recognise new legal consequences for security of supply. There are key debates today about the consumer having to become an active agent in the electricity system, so that energy policy is more oriented towards demand than supply. There is also talk that self-consumption of electricity and demand response should be promoted. However, it seems that there are a few consumers with the necessary training to adopt an active attitude towards the supply of electricity and to rationally take responsibility for their own consumption. For this reason, part of that social contract must be education of electricity consumers.

### 2.3.1. KEY CHALLENGES AND RESEARCH OPPORTUNITIES

The main challenges that energy policy will be facing in terms of the electricity sector are the following. There is a need to introduce new digital technologies within the electricity sector, including the management of smart grids and the use of blockchain. New storage systems will guarantee security of supply and a variety of storage means will be deployed. Demand response will be a key component and will provide the basis for the activity of aggregation.<sup>25</sup> Note 25: Please provide the publisher and accessed date for the “Herrera-Anchústegui and y Formosa 2019” source. The promotion of individual and collective self-consumption will change the fundamentals of energy law. Decentralisation of electricity supply needs a regulatory framework to be set up, which will facilitate energy communities.<sup>26</sup>

Scientific research must be aimed at pointing out the existing obstacles to the emergence of a new decarbonised and decentralised electricity system..<sup>27</sup> These obstacles

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<sup>24</sup> I del Guayo and others (eds), *Energy Justice and Energy Law* (OUP 2020); R Heffron, ‘Applying Energy Justice into the Energy Transition’ (2022) 156 *Renewable and Sustainable Energy Reviews* 111936

<sup>25</sup> I Herrera Anchústegui and A Formosa, ‘Regulation of Electricity Markets in Europe in Light of the Clean Energy Package: Prosumers and Demand Response’ (2019) <<https://ssrn.com/abstract=3448434>> accessed 28 February 2023

<sup>26</sup> JI Pérez-Arriaga (ed) *Regulation of the Power Sector* (Springer 2013)

<sup>27</sup> MB Gerrard and JC Dembach, *Legal Pathways to Deep Decarbonization in the United States: Summary and Key Recommendations* (Elis Press 2018)



are of an economic, technological and regulatory nature. Among the initial solutions is the need to align the interests of consumers who are part of an energy community with the interests of the electricity system as a whole.<sup>28</sup> Energy communities must be allowed to participate in all existing markets. Electricity markets must be organised in such a way that there is a segment for new clean technologies and another segment for traditional ones that provide support. These developments need to form part of the new social contract.

### 3. Forms of energy justice

#### 3.1. Restorative justice and waste management

If the normative aim of energy justice, as Heffron explained, is contributing to make the world more just and sustainable,<sup>29</sup> then when some injustices arise, it is necessary to address those injustices, and restorative justice plays a key role. The essence of restorative justice is an obligation to return the victims to their original positions, by focusing on the needs of the victims and communities, and with the offender being responsible for repairing harm. The focal point of the formal criminal justice system is punishment, and giving offenders what they deserve, which is clearly not enough for many energy injustices.<sup>30</sup> Therefore, by solely focusing on punishing the offenders, regardless of the victim's needs and the offender's responsibility for repairing harm, the current system is incomplete.<sup>31</sup> And this is where restorative justice becomes an essential tenet for the energy justice framework. It can serve as a policy tool to ensure energy justice in practice, and also that negatively impacted populations from the past, present, and future energy activities can be restored to their original position.<sup>32</sup>

Energy companies over the last few decades have left many communities around the world with various harms and without restoration which has negatively affected their social licence to operate.<sup>33</sup> In many cases where the community perceives a project or any industrial activity as harmful for themselves and their community, they will not accept it and will then start resisting it in various ways.<sup>34</sup> On the other

28 D Robinson and I del Guayo, 'Energy Communities in Spain: Legal and Societal Challenges' in M Roggenkamp and C Banet (eds), *European Energy Law Report XIV* (Intersentia 2021), 219; D Robinson, 'Alignment of Energy Community Incentives with Electricity System Benefits in Spain' in S Löbbe, F Sioshansi and D Robinson (eds) *Energy Communities: Citizen-Centered, Market-Driven, Welfare-Enhancing?* (Elsevier 2022), 74

29 RJ Heffron, *The Challenge for Energy Justice: Correcting Human Rights Abuses* (Palgrave Macmillan 2021), 3

30 B Preston, 'The Use of Restorative Justice in Environmental Crime' (Environmental Protection Authority Victoria Seminar on Restorative Environmental Justice, March 2011)

31 M Hazrati and RJ Heffron, 'Conceptualising Restorative Justice in the Energy Transition: Changing the Perspectives of Fossil Fuels' (2021) 78 *Energy Research and Social Science* 102115

32 RJ Heffron and D McCauley, 'The Concept of Energy Justice across the Disciplines' (2017) 105 *Energy Policy* 658

33 The contemporary use of the phrase is meant to suggest that communities have as much authority as governments in granting permissions or licences; see eg RG Boutilier, 2014. Frequently Asked Questions about the Social Licence to Operate' (2014) 23 *Impact Assessment and Project Appraisal* 263

34 D Franks and others, 'Conflict Translates Environmental and Social Risk into Business Costs' (2014) 111(21) *Proceedings of the National Academy of Sciences of the United States of America* 7676

hand, different inequities are deeply embedded in low-carbon energy transition processes.<sup>35</sup> This therefore means that while achieving success with the just energy transition feels urgent more than ever, it requires the participation and support of people living in places that will be most affected by an energy transition, either by losing jobs in energy sectors that are scaled down/eliminated or by serving as the sites for renewable energy.<sup>36</sup> Therefore, this highlights the need for a new social contract between the energy industry and society.<sup>37</sup>

Restorative justice will play a vital role in achieving the new social contract because it not only gives a voice to those victims who have been excluded/marginalised but can also adopt a forward-looking approach to ensure the communities likely to be impacted that all potential injustices and harms have been carefully and participatorily considered, and will be prevented or (in the case that they occur) restored. This forward-looking approach of restorative justice is preventive and strategic, with the involvement of a range of stakeholders.<sup>38</sup>

### 3.1.2. THE NEW IMPORTANCE OF RESTORATIVE JUSTICE

The United Nations General Assembly proclaimed 2021–2030 to be the ‘United Nations Decade on Ecosystem Restoration’,<sup>39</sup> with the primary aim being to prevent, halt and reverse the degradation of ecosystems worldwide.<sup>40</sup> The energy industry, by integrating restorative justice into energy policy, can play a fundamental role in achieving this aim. By employing a restorative approach that critically considers the context of past and present energy decisions, energy regulators can more accurately account for the future costs of business-as-usual energy development.<sup>41</sup> However, there are policy challenges to face such as reforming the various approaches to deregulation,<sup>42</sup> the lack of adequate financial sources to safeguard people from potential harms, and the lack of clear legally binding restorative obligations for companies responsible for harms or for land reclamation and decommissioning.

There are some mechanisms to respond to these challenges but they all need further research in terms of their value to a social contract; these include the environmental impact assessment, the polluter-pays principle, the energy financial reserve obligation,

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<sup>35</sup> M Lacey-Barnacle, 2020. ‘Proximities of Energy Justice: Contesting Community Energy and Austerity in England’ (2020) 69 *Energy Research Social Science* 101713

<sup>36</sup> JA Crowe and R Li, ‘Is the Just Transition Socially Accepted? Energy History, Place, and Support for Coal and Solar in Illinois, Texas, and Vermont’ (2020) 59 *Energy Research and Social Science* 101309

<sup>37</sup> T Vandenbussche, ‘A Just Energy Transition Tapping into a Century of Ideas’ (European Policy Centre, 2021) <<https://library.fes.de/pdf-files/id/18669.pdf>> accessed 28 February 2023

<sup>38</sup> J Ritchie and T O’Connell, ‘Restorative Justice and the Need for Restorative Environments in Bureaucracies and Corporations’ in Heather Strang and John Braithwaite (eds), *Restorative Justice and Civil Society* (CUP 2011), 150

<sup>39</sup> On 1 March 2019, under United Nations Resolution 73/284

<sup>40</sup> United Nations, ‘The United Nations Decade on Ecosystem Restoration: Strategy’ (UN 2022) <<https://wedocs.unep.org/bitstream/handle/20.500.11822/31813/ERDStrat.pdf?sequence=1&isAllowed=y>> accessed 28 February 2023

<sup>41</sup> RJ Wallgrove, ‘Restorative Energy Justice’ (2022) 40(2) *UCLA Journal of Environmental Law and Policy* 133

<sup>42</sup> Maciej M Sokołowski and Raphael J Heffron, ‘Defining and Conceptualising Energy Policy Failure: The When, Where, Why, and How’ (2022) 161 *Energy Policy* 112745

regulated corporate social responsibility, and the social licence to operate.<sup>43</sup> In addition, restorative justice and its social contract implications can be researched, in terms of how it can be expanded into all the life-cycle phases of energy project development.

### 3.2. *Taxation*

In the twenty-first century the energy justice frame, with its embodiment of environmental concerns, is important to the legal field of *energy resources taxation*. Energy justice can enable a shift away from the twentieth-century ‘maxima’ ethos of fossil fuel extraction. This economic rent concept is still dominant in some jurisdictions for the taxation of super profits from energy resources, such as petroleum and coal.<sup>44</sup> The economic rent tax approach is characterised by various principles, including revenue maximisation.<sup>45</sup>

From the 1970s many western jurisdictions urgently sought investment for petroleum exploration and extraction. For instance, the UK’s early success in the petroleum industry emboldened the government to consider a range of taxation regimes as an alternative to production royalties – in an attempt to maximise production and capture more revenue.<sup>46</sup> Likewise, in Australia, the 1980s heralded the introduction of a highly concessional resource rent tax for petroleum to attract inward capital and maximise economic outcomes. Today, the global petroleum industry’s significant greenhouse gas emissions<sup>47</sup> could be redressed through consideration of energy justice to underpin taxation.

#### 3.2.1. RETHINKING TAXATION WITH THE SOCIAL CONTRACT

The theory and concepts of energy justice can be used to fashion a new set of principles to underpin the taxation of fossil fuel energy resources. A new social contract between energy and society can be progressed by an exploration of Rousseau’s philosophy, which concerns critical questions regarding how members might enjoy the benefits of civil society, but in return give up certain rights, such as the right to maximum extraction of natural resources.<sup>48</sup> Pierre Bourdieu’s social practice theory

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<sup>43</sup> Hazrati and Heffron (n 31)

<sup>44</sup> For example, Petroleum Resource Rent Tax Assessment Act 1987 (Aust) and Petroleum Revenue Tax Act 1980 (UK). For coal in Australia, the legislation that took effect was the Mineral Resource Rent Tax 2012 (Aust), but it was later repealed

<sup>45</sup> For example, R Garnaut, ‘Principles and Practice of Resource Rent Taxation’ (2010) 43(4) Australian Economic Review 347

<sup>46</sup> Royalty regimes collect a smaller share of returns when projects have high profitability. Royalties can be levied on the mineral volume or on the market value (*ad valorem*) at the point of extraction, or production.

For the introduction of the PRT in the UK, see JC Boué, *The British Model of Petroleum Governance from 1970–2018: The UK North Sea as a Global Experiment in Neoliberal Resource Extraction* (Platform London and Public and Commercial Services Union 2018), 8

<sup>47</sup> For example, Australian government statistics for June 2022 show that liquefied natural gas (LNG) industry fugitive emissions are the fourth largest contributors to greenhouse gas emissions (10.3% or 50.3 MtCO<sub>2</sub>e in the year to June 2022); see Department of Climate Change, Energy, the Environment and Water, *Quarterly Update of Australia’s National Greenhouse Gas Inventory: June 2022* (Australian Government 2022), 9

<sup>48</sup> J-J Rousseau, *The Social Contract or Principles of Political Right* (Wordsworth 1998)

can be used to analyse the consultative process around any proposed changes to underlying tax principles. Bourdieu's practice theory can be linked with energy justice, to transition to new energy policy and legislation.<sup>49</sup>

It is imperative to rethink fossil fuel energy in the twenty-first century. The 2015 United Nations (UN) Paris Agreement has highlighted the importance of global energy and climate goals. Scholars can focus and reflect on how Australia, and other energy resource-rich jurisdictions, are hesitant to change the principles that underpin the taxation of energy resources. This situation also presents an opportunity for further research to advance energy justice as the driving framework behind energy taxation legislation. Key literature in terms of energy law and policy identifies the need for significant change in order to achieve international, national and local climate mitigation and adaptation goals.<sup>50</sup>

Further action is needed to respond to disrupters, from emerging technology to the war in Ukraine, which are blocking the goal of net zero emissions by 2050. For instance, the Ukraine war has increased demand for fossil fuels from EU and Asia-Pacific countries caused by embargoes on Russian energy exports.<sup>51</sup> In 2022 Australian gas liquefied natural gas (LNG) export revenue to industry was a record AU\$92.8 billion (2021: AU\$49.4 billion).<sup>52</sup> Many countries need policies and laws to bring renewable energy to the forefront again, and taxation is an accepted tool that can be used to change taxpayer behaviour.<sup>53</sup> That type of change, however, requires underlying research and dissemination through public forums, for example, to instigate debate that a new social contract is needed in this area.

### 3.3. *Investments*

The continued action of energy corporations to, in essence, *invest in injustices* against humans and nature *lawfully* highlights the necessity of a new social compact. The socio-political-economic-legal architecture, within which energy investments materialise, shields corporations and government from responsibility for the injustices that they cause.<sup>54</sup> Further, and significantly, it creates an aura of lawfulness for their investments.<sup>55</sup>

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<sup>49</sup> P Bourdieu, *The Social Structures of the Economy* (Polity Press 2005); P Bourdieu, *Outline of a Theory of Practice* (CUP 1977); P Bourdieu, *The Logic of Practice* (Stanford UP 1980)

<sup>50</sup> eg R Heffron, 'Energy Law in Crisis: An Energy Justice Revolution Needed' (2022) 15(3) *Journal of World Energy Law and Business* 167; D Kraal and R Heffron, 'Resource Rent Tax: Its Principles, Application and Need for Change in Australia' (2022) 37(4) *Australian Tax Forum* 559

<sup>51</sup> Reuters, 'Russia Sees Sanctions Impact on Oil Products, Eyes Crude Export Boost – Senior Source' (*Reuters*, 17 January 2023) <[www.reuters.com/business/energy/russia-sees-sanctions-impact-oil-products-eyes-crude-export-boost-senior-source-2023-01-17/](http://www.reuters.com/business/energy/russia-sees-sanctions-impact-oil-products-eyes-crude-export-boost-senior-source-2023-01-17/)> accessed 28 February 2023

<sup>52</sup> Energy Quest, 'Australian 2022 LNG Export Revenue over A\$90 Billion' (*Energy Quest*, 5 January 2023) <[www.energyquest.com.au/australian-2022-lng-export-revenue-over-a90-billion/](http://www.energyquest.com.au/australian-2022-lng-export-revenue-over-a90-billion/)> accessed 28 February 2023

<sup>53</sup> eg P Rogers, R de Silva and R Bhatia, 'Water Is an Economic Good: How to Use Prices to Promote Equity, Efficiency, and Sustainability' (2002) 4 *Water Policy* 1; L Marriott and others, 'Tax as a Solution for Irrigation Water Scarcity, Quality and Sustainability: Case Studies in Australia and New Zealand' (2021) 36(3) *Australian Tax Forum* 369

<sup>54</sup> G Skinner, 'Rethinking Limited Liability of Parent Corporations for Foreign Subsidiaries' Violations of International Human Rights Law' (2015) 72 *Wash. & Lee L. Rev.* 1769

<sup>55</sup> J Linarelli, ME Salomon and M Sornarajah, *The Misery of International Law: Confrontations with Injustice in the Global Economy* (OUP 2018)

Today, this social contract forged on neoliberal freedom,<sup>56</sup> globalisation,<sup>57</sup> thin democracy,<sup>58</sup> and economic growth is broken.

This ideology has created a powerful narrative that investments are intrinsically good and should be left alone.<sup>59</sup> This subsequently led to the overprotection of energy investors with the weakening of institutions tasked with overseeing their impact on society and environment. Within the extant contract, legal concepts, rules and procedures – for instance, property rights, limited liability, sovereignty, investor-state dispute settlement (ISDS) – operate to shield energy investors from responsibility for the injustices that they cause.<sup>60</sup>

Governments and some citizens welcome the companies and major energy investments; more citizens today see such investment through the optics of the broken social contract that includes such issues as injustices that these investments create against nature and humans – eg. air pollution and public health, pollution of lands and waterways that are crucial for indigenous populations.<sup>61</sup> The rise in inequality, notably in moments of crisis, clearly benefits fossil fuel multinationals in the central states, and damages humans and the environment around the globe. Further, the mixture of populism, nationalism and authoritarianism adds to the costs with the silencing of indigenous peoples, and of human rights and environment defenders and activists. Losses of cultures, worldviews, ecosystems and biodiversity add to the costs and, worse, in the context of climate change.<sup>62</sup>

### 3.3.1. IMPLEMENTING JUSTICE INTO INVESTMENT THROUGH THE SOCIAL CONTRACT

The main challenge is to affirm justice for humans and non-humans as a basic principle. Emphasis must be placed on the most vulnerable people and environments – the peripheries and endangered species and ecosystems. So articulated, justice must become a founding principle in the new social contract, informing the law and regulation of energy investments. From a social-political-legal perspective, the mantle of lawfulness that investments automatically enjoy needs to be completely transformed. The materialisation of the justice principle creates another difficult challenge for research and practice exploration: the revamping of legal concepts and rules that are deeply ingrained in the broken social contract.

All together, these challenges speak of a deep transformation needed in the national and international socio-politico-economic-legal architecture. For scholars, they

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<sup>56</sup> D Lebow, 'Trumpism and the Dialectic of Neoliberal Reason' (2019) 17 *Perspectives on Politics* 380

<sup>57</sup> J Stiglitz, *Globalization and Its Discontents Revisited: Anti-Globalization in the Era of Trump* (Penguin 2017)

<sup>58</sup> S Droubi, RJ Heffron and D McCauley, 'A Critical Review of Energy Democracy: A Failure to Deliver Justice?' (2022) 86 *Energy Research & Social Science* 102444

<sup>59</sup> T Piketty, *Capital and Ideology* (Arthur Goldhammer tr, Harvard UP 2020)

<sup>60</sup> JG Ruggie, *Just Business: Multinational Corporations and Human Rights* (Norton Global Ethics Series) (WW Norton & Co 2013); Skinner (n 54)

<sup>61</sup> S Droubi, CJF Elizondo and RJ Heffron, 'Latin America, Indigenous Peoples and Investments: Resistance and Accommodation' in S Droubi and CJF Elizondo *Latin America and International Investment Law: A Mosaic of Resistance* (Manchester UP 2022)

<sup>62</sup> H Pörtner and others, *IPCC, 2022: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC 2022)

require novel approaches and methodologies, which will help overcome the fragmentation of the research into epistemic communities that barely speak to each other and fail to understand the wholeness,<sup>63</sup> depth and complexity of the problems created by the broken social contract.

Legal scholars must challenge long-held views and question deeply ingrained narratives.<sup>64</sup> For instance, scholarship is needed to explore the redefinition of what governments may do under the principle of sovereignty over natural energy resources; the restriction of property rights; the expansion of corporate liability; the securing of the right for indigenous peoples to participate in international processes – to foster government and corporate responsibility for the injustices that they cause to humans and the environment. Such issues will provide a pathway for reform for energy investments and ensure they deliver as part of a new social contract.

## 4. Unresolved human rights

### 4.1. *Rights of future generations*

It would be irresponsible to discuss the move to a just and sustainable present and future world without considering the protection of human rights in the energy life cycle.<sup>65</sup> Part of this research area concerns the rights of future generations, and short-term-focused politicians paid little attention to this in the twentieth century.<sup>66</sup> Indeed, climate change impacts more broadly are making a mockery of human rights.<sup>67</sup> They most affect the countries and people least responsible for them.<sup>68</sup>

It has been seven years since the Paris Agreement 2015, and it has required civil society and communities to take action towards national courts to litigate on energy justice issues.<sup>69</sup> Therefore what hope do future generations have if society cannot take care of this generation? The inclusion of the loss and damage fund in the Climate of Parties (COP) 27 is a gamechanger – and worthy of significant research.<sup>70</sup>

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63 For instance, Sufyan Droubi, 'An Interdisciplinary Dialogue with the Business and Human Rights Literature' (2022) 55 *Israel Law Review* 64

64 Linarelli, Salomon and Sornarajah (n 55)

65 Heffron, *Challenge for Energy Justice* (n 29); see also RJ Heffron and D McCauley, 'Achieving Sustainable Supply Chains through Energy Justice' (2014) 123 *Applied Energy* 435

66 G Pellegrini-Masini, F Corvino and L Löfquist, 2019. 'Energy Justice and Intergenerational Ethics: Theoretical Perspectives and Institutional Designs' in G Bombaerts and others (eds), *Energy Justice Across Borders* (Springer Nature 2019)

67 P Verkooijen and AK Abdul Momen, 2021. 'The Climate Crisis Is Destroying the Human Rights of Those Least Responsible for It' (*The Guardian*, 30 September 2021) <[www.theguardian.com/global-development/2021/sep/30/the-climate-crisis-is-destroying-the-human-rights-of-those-least-responsible-for-it](https://www.theguardian.com/global-development/2021/sep/30/the-climate-crisis-is-destroying-the-human-rights-of-those-least-responsible-for-it)> accessed 28 February 2023

68 United Nations Convention on Trade and Development, 'Smallest Footprints, Largest Impacts: Least Developed Countries Need a Just Sustainable Transition' (UNCTAD 2021) <<https://unctad.org/topic/least-developed-countries/chart-october-2021>> accessed 28 February 2023

69 RJ Heffron, 'Applying Energy Justice into the Energy Transition' (2022) 156 *Renew. Sustain. Energy Rev.* 111936

70 United Nations Framework Convention on Climate Change (UNFCCC), 'COP27 Reaches Breakthrough Agreement on New "Loss and Damage" Fund for Vulnerable Countries' (UN Climate Press Release, 20 November 2022) <<https://unfccc.int/news/cop27-reaches-breakthrough-agreement-on-new-loss-and-damage-fund-for-vulnerable-countries>> accessed 28 February 2023

Those most responsible for climate change should now prepare to face discussions in upcoming COPs on who will pay for the US\$160 billion to \$340 billion annual adaptation costs required by developing countries.<sup>71</sup>

History tells us that there will be problems, as existing social contracts brokered post World War II promising prosperity are broken.<sup>72</sup> A new social contract requires the participation of all stakeholders in a continual and honest dialogue on the benefits, trade-offs and costs of the energy transition.<sup>73</sup> It would broker a just energy taxation policy that taxes resources equally throughout the entire energy life cycle.<sup>74</sup> It would also entrench a Sovereign Wealth Fund to spread benefits of energy resources to future generations.<sup>75</sup>

#### 4.1.1. CHALLENGES FOR FUTURE GENERATIONS

Protecting the rights of future generations is impacted by the fact that short-term-focused politicians are elected to address current needs and representation for future generations is lacking.<sup>76</sup> Further, when interests of future generations are represented, immediate descendants may be addressed but interests of generations in the far future are deficient.<sup>77</sup> Policymakers too often are used to viewing and legislating on energy systems in silos, and to address future generations they require interdisciplinary solutions.<sup>78</sup> Policymakers further require capacity building to understand the lack of protection of human rights<sup>79</sup> in the energy life cycle from extraction to decommissioning and addressing the energy life cycle in conjunction with economics that respond to social inequality.<sup>80</sup>

Understanding the problem is half the solution. How to protection future generations lacks an established definition of its scope and boundaries. It further lacks established theoretical underpinnings – it requires theories that promote a radical but sustainable shift from capitalism and the pursuit of personal satisfaction, for example to communal principles such as African ubuntu.<sup>81</sup> These two problems would make for immediate research topics.

Further research may focus on the role of constitutional amendments to explore a new social contract. Recent research<sup>82</sup> found that 42 countries have constitutions with

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<sup>71</sup> *Ibid*

<sup>72</sup> I Kempf and K Hujo, 'Why Recent Crises and SDG Implementation Demand a New Eco-Social Contract' in A Antonarakis, A Antoniadis and I Kempf (eds) *Financial Crises, Poverty and Environmental Sustainability in the Context of SDGs* (Springer Nature 2022), 171

<sup>73</sup> L Rayner, 'Renewing the Social Contract to Deliver a Just Energy Transition' (European Policy Centre, 26 November 2021) <<https://epc.eu/en/publications/Renewing-the-social-contract-to-deliver-a-just-energy-transition~4469ac>> accessed 28 February 2023

<sup>74</sup> Heffron, *The Challenge for Energy Justice* (n 29)

<sup>75</sup> *Ibid*

<sup>76</sup> Pellegrini-Masini, Corvino and Löfquist (n 66)

<sup>77</sup> *Ibid*

<sup>78</sup> Heffron and Talus, 'The Evolution of Energy Law' (n 16)

<sup>79</sup> These include the right of/for: life, health, minimum subsistence, freedom, human dignity, water, healthy environment, air, culture, property, adequate housing, security and a fair trial, that should be protected across the energy life cycle activities; see Heffron, 'Applying Energy Justice' (n 69)

<sup>80</sup> *Ibid*

<sup>81</sup> See P Lenkabula, P. (2008). Beyond Anthropocentricity – Botho/Ubuntu and the Quest for Economic and Ecological Justice in Africa' (2008) 15 Religion and Theology 375; see also LT Chuwa, *African Indigenous Ethics in Global Bioethics* (Springer 2014)

<sup>82</sup> E Dirth, *A Global Review of the Implementation of Intergenerational Equity* (Utrecht University 2018)

clauses that protect the environment for future generations but only two with express referral to justice, for example an ‘intergenerational equity’. In Africa, both the Kenyan and South African constitution<sup>83</sup> make explicit reference to rights of future generations. The result is that both Kenya and South Africa have robust energy justice movements litigating human rights concerns in the energy sector. Is this a possibility for other nations?

Another area of research with respect to the protection of future generations revolves around procedural justice, and that would be to establish a national ombudsman or new parliamentary committee to address future generations.<sup>84</sup> The rise of youth activists such as Greta Thunberg and Vanessa Nakate (to name just a few – there are many doing compelling work across the globe) shows the impact that the youth can have in advancing justice concerns in the energy sector, and an interesting research topic would be the role of activists in a new social contract, and how they can achieve justice for future generations.

#### 4.2. Education

Research and education are key sectors to advance energy justice, for they interrogate the link between knowledge agendas and equity and justice.<sup>85</sup> For example, access to energy is essential for economic development, social well-being, and environmental protection.<sup>86</sup> However, the benefits and costs associated with energy production, distribution and consumption are not distributed equally across society. Interdisciplinary research and educational transformation are critical components of addressing these disparities by bringing together scholars from different fields to examine complex problems from multiple perspectives.<sup>87</sup>

Energy practices are configured by a ‘hanging together’ of institutional arrangements<sup>88</sup> that do not align and hence create injustices. Interdisciplinary research and educational transformation can provide comprehensive pathways to exploring these ‘collective critical topics’<sup>89</sup> across sciences and future curricula. Further, education in itself is a stimulus for public participation. A new social contract hence must not only counter entrenched agendas but be based on forming a ‘energyconscious citizen’.<sup>90</sup> This will result in increasing social and ethical acceptability of transitions and avoid failures. Including education in a new social contract will create an enabling environment to facilitate the disconnection from former energy

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<sup>83</sup> art 42, Kenyan Constitution, 2010; and art 24, South African Constitution, 1996, respectively.

<sup>84</sup> See L Beckman and F Uggla, ‘An Ombudsman for Future Generations – Legitimate and Effective?’ in I González-Ricoy and A Gosseries (eds), *Institutions for Future Generations* (OUP 2016)

<sup>85</sup> S Fuller and D McCauley, ‘Framing Energy Justice: Perspectives from Activism and Advocacy’ (2016) 11 *Energy Research & Social Science* 1

<sup>86</sup> McCauley, D. and others, ‘Energy Justice in the Transition to Low Carbon Systems: Exploring Key Themes in Interdisciplinary Research’ (2019) 229 *Applied Energy* 233

<sup>87</sup> R Heffron and A Foley, ‘Promote Clean-Energy Transition in Student Education’ (2022) 607(7917) *Nature* 32 <<https://doi.org/10.1038/d41586-022-01823-8>>

<sup>88</sup> G Walker, ‘The Dynamics of Energy Demand: Change, Rhythm and Synchronicity’ (2014) 1 *Energy Research & Social Science* 49

<sup>89</sup> P Charbonnier, *Abondance et liberté : une histoire environnementale des idées politiques* (La Découverte 2020) 425

<sup>90</sup> D Devine-Wright, ‘Energy Citizenship: Psychological Aspects of Evolution in Sustainable Energy Technologies’ in J Murphy (ed), *Governing Technology for Sustainability* (Earthscan 2007)



dependencies. By engaging diverse stakeholders in decision-making processes, policies can be developed that are responsive to community needs while also promoting sustainability and the low-carbon economy. A new social contract, therefore, between energy producers and society will solve the aforementioned problem and promote greater equity in the distribution of benefits and costs associated with energy production, distribution and consumption.<sup>91</sup>

#### 4.2.1. KEY CHALLENGES IN EDUCATION FOR ENERGY JUSTICE'S SOCIAL CONTRACT

Part of the challenge is finding and building a common language on energy justice and this includes the following challenges:

- 1) epistemological rooting and reflexivity to avoid disciplinary biases;
- 2) clear content, and translation skills;
- 3) expanding practical applicability to guarantee uptakes in policy practice; and
- 4) object–method adequacy.

Concurrently, there are also organisational challenges that will need addressing:

- 1) the valuation in careers, funding programmes and diplomas of interdisciplinary workings and pedagogies;
- 2) administrative support; and
- 3) multiplication of in-person interactions and intellectual pooling in laboratories.

Finally, delivering energy justice must remove the ‘malaise’<sup>92</sup> between still unbalanced Science, Technology, Engineering and Maths (STEM) and Social Sciences and Humanities (SSH) contributions. To do so, research and education are challenged to become a focus for decentering and addressing (mis)recognition concerns, constitutive of energy injustices.<sup>93</sup>

One key example of a challenge today that includes many of the issues raised above surrounds an understanding of literacy and the role of each stakeholder. For example, data literacy refers to the ability to analyse complex datasets related to energy production, distribution and consumption to identify patterns and trends that can inform policy decisions.<sup>94</sup> Energy literacy refers to basic knowledge about how our energy use affects the environment and society more broadly. Both forms of literacy are critical components of interdisciplinary research on energy justice. Scholars must be able to analyse data related to complex systems such as electricity grids or transportation networks to identify areas where improvements can be made. Policy-makers must have a solid understanding of these issues in order to develop effective

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<sup>91</sup> M Gibbons, ‘Science’s New Social Contract with Society’ (1999) 402(Suppl. 6761) *Nature* C81

<sup>92</sup> CM Baum and B Bartkowski, ‘It’s Not All About Funding: Fostering Interdisciplinary Collaborations in Sustainability Research from a European Perspective’ (2020) 70 *Energy Research & Social Science* 101723

<sup>93</sup> C Tornel, ‘Decolonizing Energy Justice from the Ground Up: Political Ecology, Ontology, and Energy Landscapes’. (2023) 47(1) *Progress in Human Geography* 43

<sup>94</sup> A Martins, M Madaleno and M Ferreira Dias, ‘Energy Literacy: What Is Out There to Know?’ (2020) 6 *Energy Reports* 454

policies that promote sustainability while also promoting economic development. Citizens must also have a basic understanding of these issues to make informed decisions about their own energy use.<sup>95</sup>

One challenge education must face is to move societies away from fossil fuel use.<sup>96</sup> Hence, education involves much about initiatives for education and training on new initiatives but also how to transition away from the old systems and why this transition is necessary. Exploring this in the context of a new social contract provides a clear platform on which to build and develop educational initiatives. Today curricula need to change and there is limited research into how; also, any change currently happening is too slow.<sup>97</sup> Further, there is an ethical dilemma where energy researchers who are educators are in essence obligated to respond to and change with the energy transition and the challenges it involves such as climate change, environmental impacts and economic governance.<sup>98</sup>

### 4.3. *Small Island Developing States*

The very definition of energy justice is closely connected to Small Island Developing States (SIDS). This is because the goal of energy justice involves achieving equity particularly as it relates to the vulnerable: recognition justice. It is this element of an inclusive model, rooted in ethics and environmental justice,<sup>99</sup> or the social justice theory, in the energy transition, which allows everyone to engage with the energy sector instead of those solely dominated by wealth and power. Factually (scientifically), SIDS are particularly susceptible to climate change-related natural disasters as they are at the front lines of climate change and environmental harm particularly because of their size and location. Climate-related weather disasters result not only in displaced communities, but also in damaged economies, disappearing nations and environmental migrants.<sup>100</sup> Overall, since the core of energy justice is fairness, equity and inclusiveness, it must drive policy with social repercussions in mind and looking to SIDS is crucial in this effort. Hence, a new social contract with the energy sector would be invaluable for SIDS to survive and not disappear.

The nucleus of energy justice presupposes the ways communities have a say in shaping their energy futures through policy involvement, particularly in the energy transition.<sup>101</sup> It ensures that inequitable impacts on the most marginalised

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<sup>95</sup> KL Van den Broek, 'Household Energy Literacy: A Critical Review and a Conceptual Typology' (2019) 57 *Energy Research & Social Science* 101256

<sup>96</sup> D McCauley and others, 'Which States Will Lead a Just Transition for the Arctic? A DeePeR Analysis of Global Data on Arctic States and Formal Observer States' (2022) 73 *Global Environmental Change* 102480

<sup>97</sup> Heffron, 'Energy Law in Crisis' (n 50)

<sup>98</sup> RJ Heffron, 'Repurposing for the Just Transition: Energy Companies Need to Future-Proof Their Structure and Strategy' (2023) *Advanced Online Access Journal of World Energy Law and Business* <<https://doi.org/10.1093/jwelb/jwad005>>

<sup>99</sup> D McCauley and others, 'Advancing Energy Justice: The Triumvirate of Tenets' (2013) 32(3) *International Energy Law Review* 1

<sup>100</sup> A Phillips, 'The Forgotten and the Earth's Revenge: Energy, Climate Change and Caribbean SIDS' (2022) 3 *International Energy Law Review* 4

<sup>101</sup> K Baskin, 'Why Energy Justice Is a Rising Priority for Policymakers' (MIT Management Sloan School 27 January 2021) <<https://mitsloan.mit.edu/ideas-made-to-matter/why-energy-justice-a-rising-priority-policymakers>> accessed 28 February 2023

communities are remediated or that recognition justice occurs by articulating the voices of those experiencing the inequality. It is stated that the success of energy justice must take into consideration policies, plans and programmes that guarantee fair and equitable access to resources and technologies<sup>102</sup> to aid in reducing emissions and transitioning to a low carbon economy. Finally, however, SIDS are becoming more vocal as the effects of climate change continue to impact them, leaving them struggling to even exist.

Traditionally, in tandem, countries have created new social contracts at critical junctures, in response to regime changes, citizens' demands and social struggles, embarking on a variety of institutional and policy reforms.<sup>103</sup> The inclusiveness of the energy justice principle equates to the way SIDS have a say in the way their energy futures develop at a national and regional level and can assist in remedying the situation or at least moving forward as one. Comprehensively, it can be said that the 'eco-social contract' or simply social contract encompasses the philosophy of energy justice in terms of the broad consensus grounding between different stakeholders, embarking on a democratic, inclusive and participatory decision-making process at multiple levels, and feeding evidence-based policy proposals into decision-making forums.<sup>104</sup>

#### 4.3.1. CHALLENGES AND RESEARCH OPPORTUNITIES FOR SIDS AND ENERGY JUSTICE'S SOCIAL CONTRACT

Polices around energy justice include the elements of procedural justice, which is concerned with the way energy decisions are made, proposing equitable procedures and engaging stakeholders at all levels.<sup>105</sup> Key challenges that can be advanced for energy justice from such a policy perspective for SIDS include:

- (1) The ability to put the framework into practice: SIDS lack the practical framework to achieve the SDGs in light of the mounting climate change issues. The socio-ecological costs are growing, and distributive and restorative justice should inform the social contract as it relates to energy justice in SIDS.
- (2) A 'beauty contest'<sup>106</sup> addressing the conundrum of who is more vulnerable, dependent on the vulnerability status of the SIDS, concretises compensatory justice and further reinforces the marginalisation of the SIDS. Specifically, vulnerability, stunted development and adaptation funding (with restorative, distributive and recognition justice applied) informs the social contract in these contexts.

Solution-oriented *nationally determined contributions (NDCs)* are at the heart of the Paris Agreement and the achievement of its long-term goals.<sup>107</sup> Now, finally,

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<sup>102</sup> McCauley and others (n 86), 233

<sup>103</sup> United Nations Research Institute for Social Development Flagship Report 2022, *Crises of Inequality: Shifting Power for a New Eco-Social Contract* (UNRISD 2022)

<sup>104</sup> *Ibid*

<sup>105</sup> Heffron and McCauley, 'The Concept of Energy Justice' (n 32)

<sup>106</sup> M Khan and others, 'Twenty-Five Years of Adaptation Finance Through a Climate Justice Lens' (2020) 161 *Climatic Change* 251

<sup>107</sup> UNFCCC (n 70)

with the breakthrough agreement on a new loss and damage fund (LDF) for vulnerable countries being reached at COP27,<sup>108</sup> the decades-long conversation on LDF was settled – though many details remain to be hammered out. This new funding arrangement, it can be said, will lead the way in working in tandem with achieving energy justice for vulnerable countries. The LDF is a viable solution to address the changes in energy justice outlined above, but now other concerns surrounding a clear distinction between development finance and climate finance, and clear governance structures to allow for efficient disbursement, must be addressed.<sup>109</sup> It is clear that the role and impact of the LDF should be a major part of the new social contract, and this provides a ripe research area.

#### 4.4. *Indigenous communities*

Links between indigenous communities and energy are discussed at two levels: first, the impact of the implementation of space-intensive renewables on indigenous populations and the lands they inhabit; and, second, how communities can appropriate such technologies to achieve their own transition. For any energy developments, indigenous communities where present need to be part of the new social contract so that justice can underpin the project as it is planned, constructed, operated and decommissioned.

In the past many injustices have been documented, resulting from their implementation (see the EJ Atlas database<sup>110</sup>) to the issue of population displacements as a result of renewable energy projects<sup>111</sup> and to injustices directly relating to the state.<sup>112</sup> The same applies to the way transitions are implemented in communities, when it does not allow communities to reflect on the collective choices needed to achieve this transition,<sup>113</sup> and therefore does not take into account the multiple impacts that a transition can have on a society.<sup>114</sup> These questions, raised elsewhere than in indigenous communities, have a singular relevance given the characteristics of these societies, such as history marked by spoliations<sup>115</sup> and dependency on the environments in which they live,<sup>116</sup> meaning that defining simple policies of monetary compensation or relocation may be destructive for them.

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<sup>108</sup> *Ibid*

<sup>109</sup> The Commonwealth, 'Blog: Loss and Damage Fund – Size, Design and Agility Are Essential' (5 December 2022) <<https://thecommonwealth.org/news/blog-loss-and-damage-fund-size-design-and-agility-are-essential>> accessed 28 February 2023

<sup>110</sup> L Temper, D del Bene and J Martínez-Alier, 'Mapping the Frontiers and Front Lines of Global Environmental Justice: The EJAtlas' (2015) 22(1) University of Arizona Journal of Political Ecology 255

<sup>111</sup> E Zárate-Toledo, R Patiño and J Fraga, 'Justice, Social Exclusion and Indigenous Opposition: A Case Study of Wind Energy Development on the Isthmus of Tehuantepec, Mexico' (2019) 54 Energy Research and Social Science 1

<sup>112</sup> SH Baker, 'Mexican Energy Reform, Climate Change, and Energy Justice in Indigenous Communities' (2016) 56(2) Natural Resources Journal 369

<sup>113</sup> K Karanasios and P Parker, 'Tracking the Transition to Renewable Electricity in Remote Indigenous Communities in Canada' (2018) 118 Energy Policy 169

<sup>114</sup> N Martínez, 'Resisting Renewables: The Energy Epistemics of Social Opposition in Mexico' (2020) 70 Energy Research and Social Science 101632

<sup>115</sup> CE Hoicka, K Savic and A Campney, 'Reconciliation through Renewable Energy? A Survey of Indigenous Communities, Involvement, and Peoples in Canada' (2021) 74 Energy Research and Social Science 101897

Redefining, in the name of energy, new social contracts ought to allow a society to give sense to energy projects. This echoes the willingness of populations to be involved in energy transitions,<sup>117</sup> so they can implement endogenous development.<sup>118</sup> The variety and complexity of their relationship to the transition may not always position them in the same world of meaning as transition promoters,<sup>119</sup> and this will even vary within the communities in question.<sup>120</sup> Therefore, energy justice must be founded on principles other than the consent of populations, or compliance with procedural or redistributive justice rules.<sup>121</sup> This is the role of the new social contract and it can ensure justice is implemented throughout such projects for the benefit of indigenous communities and therefore of wider society.

#### 4.4.1. DEVELOPING RESEARCH ON INDIGENOUS COMMUNITIES AND THE SOCIAL CONTRACT

The following are some of the dimensions raised by the social contract question: how can energy enable these societies to define their future, be it in (1) the acceptance of compensations for the projects coming on their lands; (2) the degree of self-sufficiency or exportation they desire, in their technological bases; or (3) how they organise wealth distribution internally? These critical issues are accompanied by other issues regarding the homogeneity of these communities; for example, the diversity of relationships to modernity (in essence the transition to a low-carbon economy) means that they have to build a consensual agreement, at the risk of a future disintegration. Finally, the social contract should not be internal to these communities. It needs to be shared by other actors, notably the firms that install the technologies, the state and the legal frameworks that regulate these interactions. Such new contractual relationships with indigenous communities deserve attention by researchers from multiple disciplines.

In terms of policy, a number of issues need research examination. First of all, the dialogue on a particular solution must be distinguished from a wider debate on the different ways in which communities project themselves. Moreover, there is a long history of participation with good intentions without recognition by populations. There is a need to secure the complete participation of all actors of the society, and their true involvement in the decision-making processes. Likewise, given the divided relationship of these populations to modernity, and their experience in dealing with these different dimensions, it is necessary that the diversity is properly reflected and addressed, ie that project development is conducted with an inclusive approach.

<sup>116</sup> MP Johnson, 'A Generation without Land: Environmental Injustice in Indigenous Communities Displaced by Hydroelectric Dams in Brazil since the 1980s' (2021) 11(3) *Historia Ambiental Latinoamericana y Caribeña* 209

<sup>117</sup> Karanasios and Parker (n 113)

<sup>118</sup> RD Stefanelli and others, 'Renewable Energy and Energy Autonomy: How Indigenous Peoples in Canada Are Shaping an Energy Future' (2019) 27(1) *Environmental Reviews* 95

<sup>119</sup> SJ Barragan-Contreras, 'Procedural Injustices in Large-Scale Solar Energy: A Case Study in the Mayan Region of Yucatan, Mexico' (2022) 24(4) *Journal of Environmental Policy and Planning* 375

<sup>120</sup> X Arnaud de Sartre, V Berdoulay and R da Silva Lopes, 'Eco-Frontier and Place-Making: The Unexpected Transformation of a Sustainable Settlement Project in the Amazon' (2012) 17(3) *Geopolitics* 578

<sup>121</sup> E Bacchiocchi, I Sant and A Bates, 'Energy Justice and the Co-Opting of Indigenous Narratives in US Offshore Wind Development' (2022) 41 *Renewable Energy Focus* 133

Two key areas involving indigenous communities and the energy social contract deserve further research attention. First, there should be research on the place of energy in indigenous communities, which includes whether it contributes to their internal cohesion and their links with global society. In addition, such research should focus on the diverse relationships that exist in these societies with respect to energy, and should seek to understand the roots of this variety. This understanding will provide the foundation for policies for establishing different relationships with other energy sector stakeholders. Second, research on participation and co-construction processes should be conducted in order to establish new guidelines for the participation of indigenous populations in the implementation of energy infrastructures.<sup>122</sup> Finally, more research is needed on state and corporate barriers.<sup>123</sup> How do these actors act? What is the logic behind their action? In this context, it is important to prevent the effects of ‘clandestine passengers’ in the various consultative processes that involve indigenous communities. These can be both voluntary (cheaters, internal or external to the communities) and unintentional (participating stakeholders not knowing the populations, their specificities, their internal diversity). This area will open up new research horizons for exploring energy justice, the social contract and indigenous communities.

## **5. Conclusion and future intrinsic research perspectives on energy justice and the social contract matrix**

Ten areas of future research are identified in [Table 1](#), which represents an *energy justice and the social contract matrix* of core issues and research topics to re-balance the energy sector’s ‘social contract’. We do not claim the list is exhaustive, but it does aim to highlight key topics considering the challenges faced by society today relating to climate change, environmental impacts and economic governance. Scholars can engage with these research topics and begin to advance research into energy justice and the social contract.

Also, a number of future areas are intrinsic to these issues, and these have been highlighted by previous research that utilises similar theory and frameworks, with the JUST (Justice-Universal-Space-Time) framework notable among them.<sup>124</sup> The JUST framework has been utilised in other research recently.<sup>125</sup> However, its intrinsic value lies in the two elements of space (ie the geographical place) and time. The latter is particularly important in terms of the energy justice and social contract. All researchers should be linking their research with the practical element of timeliness, ie when is something going to happen, will it happen for the 2030 energy and climate targets, or for later, in 2050? Indeed, there are many questions to reflect on in terms of timelines, such as

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<sup>122</sup> R Datta, MA Hurlbert and W Marion, ‘Indigenous Community Perspectives on Energy Governance’ (2022) 136 *Environmental Science and Policy* 555

<sup>123</sup> R Datta and M Hurlbert, ‘Energy Management and Its Impacts on Indigenous Communities in Saskatchewan and Alberta: A Scoping Review’ (2019) 13(4) *International Journal of Energy Sector Management* 1088

<sup>124</sup> RJ Heffron and D McCauley, ‘What Is the “Just Transition”?’ (2018) 88 *Geoforum* 74

<sup>125</sup> See Qurbani, Heffron and Rifano (n 6); Droubi, Heffron and McCauley (n 58); RJ Heffron, *Achieving a Just Transition to a Low-Carbon Economy* (Springer 2021)

whether a country or company is achieving its energy and climate targets. Today, as stated in the introduction, time is vital considering the UN-declared climate emergency.

The research issues explored in this paper highlight the importance of time. For example, SIDS no longer have the time to wait for solutions as they suffer from rising sea levels and the associated challenges year after year. Rethinking economic governance issues such as those around taxation and investments and their timeliness is vital to establishing a new social contract for the energy sector. All stakeholders are concerned with the immediacy of ‘money’, in particular citizens who are also energy consumers and suffering in many countries today from energy price rises while some international energy companies make super-normal profits. Distributive justice is clearly not being practised, and immediate action in the area would deliver immediate results.

This paper contributes to the new research literature on energy justice and the social contract. This literature can ensure that energy law for the next generation delivers more just outcomes. The rights of the present generation and future generations need protection, alongside a re-balancing of the unfair, un-inclusive and unequitable relationship that presently exists between energy sector stakeholders. Such a new social contract needs proactive stakeholders who look at the pathway to a new social contract that aligns with the 2030 energy and climate targets of all countries internationally. Such action can be transformative for society and can reduce the effects climate change, environmental impacts and economic misgovernance from the energy sector.

### **Disclosure statement**

No potential conflict of interest was reported by the authors.

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