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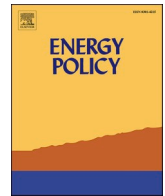
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Resolving energy policy failure: Introducing energy justice as the solution to achieve a just transition

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ABSTRACT

This article acts as an editorial to a Special Issue that addresses energy policy failure which advances a range of solutions. These contributions and how energy justice specifically can address the issues are highlighted. Energy justice as a concept and with its five key principles of justice (distributive, procedural, restorative, recognition, and cosmopolitan) can contribute to transformative change which the articles demonstrate is already visible in some countries. This is highlighted here in this article with further examples in the case of the United States, Colombia, and South Africa. Further, given the scientific reports from the United Nations and the Intergovernmental Panel on Climate Change there is now an urgency about reform. Societies need to meet their energy and climate goals for 2030 and 2050. Infusing energy justice throughout the energy sector will deliver this together with a safer, fairer, equitable, and more inclusive world. This aspiration should be the same across the world as the continued failure of energy policies is a global challenge where we are all 'world citizens' in the battle for a just transition to a low-carbon economy.

1. Introduction

The scientific reports from the United Nations and the Intergovernmental Panel on Climate Change show that we need to act fast to change our ways related to climate, and countries worldwide must achieve their energy and climate targets for 2030 and 2050. By applying energy justice principles to the whole energy sector, we can make this happen under a more secure, just, fair, and diverse framework. This should be a common goal for everyone in the world, because the ongoing energy policy failures affect us all as global citizens who want a better future.

It should be clear that each action and/or decision made in the energy sector needs to be scrutinised significantly and this is where justice can be introduced and infused throughout existing and new policy and law in the area. But has this happened to-date? Unfortunately, not, as the authors of the Special Issue of *Energy Policy* "When Energy Policy Fails: Impacts, Recovery & Managing Risk" have demonstrated. So, what is causing this? What is the purpose underneath this approach? This editorial aims to answer this.

Currently, addressing energy policy failure continues to be problematic as is identified in the research articles that form this Special

Issue. For these needs, the Special Issue was aimed at identifying them. As indicated in this Special Issue (Sokołowski and Heffron, 2022), energy policy failure comes in many forms that include excessive subsidies, collapsed incentives, abandoned projects, mistakes, wrong paths, and poor decision-making. All these need to be addressed with a commitment to ensuring that the different principles of energy justice are utilised as guidelines – i.e., the five forms of energy justice being distributive, procedural, restorative, recognition, and cosmopolitan. However, there needs to be a more consistent, systematic, and also system-wide perspective to resolving failure in the energy sector. Too often efforts are piecemeal, limited, un-innovative and naïve whether by design, or natural processes.

This paper acts as the editorial for the *Special Issue on Energy Policy Failure*. The paper highlights the use of energy justice and its value for different stakeholders of the energy sector with a particular call on the why and how for governments and businesses in terms of utilising energy justice in their energy strategies. The paper in Section Two below presents the series of articles that form this Special Issue of *Energy Policy*. It highlights these and divides them into four categories. The paper continues in Section Three with looking at the merits and value of

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energy justice in the light of energy policy failures. In Section Four there is a focus on exploring some of the recent initiatives by researchers and practitioners on energy justice, like applying more ethics in the energy sector. The editorial then concludes with looking forward to future research directions on energy policy failure by re-expressing the need for national commissions that examine in-depth all existing energy policies in a country and assess if they are failing and how energy justice can be infused into them.

2. Contributions of this Special Issue on Energy Policy Failure

In total there are 11 papers that are part of the Special Issue and these represent papers that cover countries around the world. The core paper of the series however provides a key definition on energy policy failure which is: *where energy policy does not meet local, national, and international energy and climate goals across the activities of the energy life-cycle and where just outcomes are not delivered* (Sokolowski and Heffron, 2022). It is on this premise that all the other papers in the series base their version of energy policy failure and then demonstrate the theory, method, and research analysis that presents solutions for this energy policy failure. Also, within the first paper of the series, it is the first conceptual research to connect the current substantial energy justice literature with studies on climate emergency and energy failure, exposing collapsed incentives, abandoned projects, mistakes, wrong paths, and bad decisions (Sokolowski and Heffron, 2022). Further, some of the fundamental causes and implications of these energy policy failures are examined and a solution presented that infuses the just energy transition into national net zero frameworks.

The 10 other contributions in the Special Issue can be categorised into four areas. These are: *Energy Policy, Extraction and Production, Electricity Sector, and Energy Consumption*. All are presented below.

2.1. Energy policy

Using energy justice as an analytical frame, Alford-Jones (2022) investigates how policy design injustices have driven renewable energy development in Guatemala down the wrong road. The key finding is that local opposition is not connected with project size, but rather with the absence of distributive, procedural, and recognition justice. Lu et al. (2022) focus on the Japanese Business Federation's objective of decreasing greenhouse gas emissions through the voluntary action plan, which has the distinct attribute of not punishing industry for failing to fulfil CO₂ emissions or energy consumption reduction targets. The analysis reveals that the voluntary action plan is ineffective at lowering emissions in sectors with low market concentration, and that its energy intensity objectives do not result in significant CO₂ reductions. Reform is needed. Sumarno et al. (2022) seek to present several perspectives on why energy subsidy policy failures have impeded Indonesia's energy transition, with a primary focus on the necessity for immediate policy change to speed the country's energy transition. By using quantitative, qualitative, and comparative analysis to assess Indonesian energy policy failures it is demonstrated that providing more fossil fuel subsidies impedes a country's renewable energy development and energy transition.

2.2. Extraction and production

Raszewski (2022) addresses the Nabucco gas pipeline project in the perspective of the EU's foreign policy as one of the most notable examples of an energy policy failure in the gas sector. By pinpointing Nabucco's fundamental shortcomings, it highlights that its shortcomings ascribed to political issues have resulted in more successful increased resilience, and, eventually, appropriate scalability in projects such as the Trans-Anatolian Pipeline and Trans-Adriatic Pipeline. Bradshaw et al. (2022) provides an insight into a brief history of the British shale gas debate with a focus on energy policy failure. This is achieved by examining three areas – first, the framing of the shale gas debate in the

national Parliament, second, changing public perceptions and attitudes toward shale gas development, and third, the attitudes and lived experiences of the communities most afflicted. In this light, the paper also summarises the conflicting policy ramifications of decarbonisation and the Net-Zero objectives for future large-scale energy projects in the United Kingdom.

2.3. Electricity sector

Mehta and Sarangi (2022) investigate the impact of reform-based policies and regulations together with the political context of India's cross-subsidisation in the electricity sector. It is demonstrated that this process has not necessarily been based on the logic of growing welfare and a response to climate change, but rather on entrenched political aims and desires. The Barrier Index developed in the European Barriers in Retail Energy Market Project is critically evaluated by De Almeida et al. (2022). The research reveals specific issues with the methodology and data collection used to create the Barrier Index's indicators, casting doubt on the Index's overall credibility. Hence, its failure could lead EU Member States down the wrong path or to poor judgments about retail energy market regulation in light of the EU's policy goals. Hanny and et al. (2022) highlight how German authorities have failed to align their regulatory tools, such as grid charges, with the flexibility needed of the energy transition. Regulatory and planning policies are presented and these demonstrate clear ambiguities about the long-term vision for future power grids, stifling flexibility investments – yet another policy failure. In this context, the results show how grid charges limit demand side flexibility in Germany and which policy failures have eventually resulted to political gridlock.

2.4. Energy Consumption

Based on policies that directed the energy mix in the Polish residential sector between 1990 and 2021, Sokolowski and Bouzarovski (2022) demonstrate that policymakers in Poland did not recognise households as stakeholders in their plans since the beginning of the energy transformation. From the research it is shown that government measures failed to drive efficient residential decarbonisation and did not address concerns such as energy poverty and air pollution, even though Polish households continue to consume the most coal in the European Union. Through four case studies – Birmingham, Stavanger, Milton Keynes, and Melbourne – Haarstad et al. (2022) assess attempts to break out of high-carbon automobility through three key factors, namely diversification of travel options, a shift from individual to shared forms of mobility, and whether these aspects are implemented at scale. The research also examines whether emergent policy-led experiments and innovation processes in low-carbon mobility are learning from the past, or whether they are reproducing key elements of past policy failures.

3. Emergence of energy justice in literature and policymaking over the last 10 years

How energy policy failure is determined is a key question. Certainly, today there needs to be a justice and climate change perspective to this question. In the past researchers and practitioners focused on the development of energy resources and little attention was given to issues of fairness, equity, equality, and inclusiveness. Energy justice was always going to emerge at some time, and it is simply a mystery of why it took so long (Heffron, 2021). For too long research and practice on energy was focused its development and subsequent contribution to the economic life. That perspective continues and is why to-date there remain so many issues within the energy sector as well as its contribution towards climate change in terms of carbon dioxide emissions. In the modern twenty-first century however, the energy sector is no longer so mis-guided. Justice for many has become the *raison d'être* of energy research.

Energy justice literature has emerged in a significant way over the last decade. Indeed, a short sample from the leading interdisciplinary database for energy research below in Table 1 highlights its growing examination by scholars.

Further, one of the first mentions of energy justice was indeed in Energy Policy in 2012 and 2013 in two short articles (Goldthau and Sovacool, 2012; Heffron et al., 2013). Since then there has been significant literature on the topic with four of the most cited articles being ones that all conceptualise what energy justice in different ways (Sovacool et al., 2016; Jenkins et al., 2016; McCauley et al., 2013; Heffron and McCauley, 2017). As the data in Table 1 indicates however, there is significant growth in the literature which continues each year. Further a recent short book on energy justice published in December 2023 already has 39,000 downloads making it one of the most successful academic books on energy in 2023 (Heffron and Fontenelle, 2024).

Due to its research impact and the need for a solution to ongoing energy policy failure, energy justice has now began to diffuse into energy policy itself. This is a key premise of why energy policy failure needs energy justice as a solution. Already policymakers are beginning to see this. Indeed, policymakers in the United States, Colombia, and South Africa have already introduced the key principles of energy justice into key policy documents. This is demonstrated below in Table 2 which significantly also shows how policymakers have taken from research the definitions of energy justice from key research literature.

4. Conclusion and policy implications

Failure has always been a part of human history. This applies to energy policy as well, and in the positive scenario the collapsed incentives, lost projects, mistakes, wrong paths, bad decisions, can be important lessons needed for better future. As discussed in this Special Issue, this requires an orientation towards energy justice enabling a *just energy transition where no one is left behind* (see Heffron, 2021; Sokolowski and Kurokawa, 2022; Sokolowski, 2022). In the negative scenario, where energy justice is missing, incentives still collapse or are distorted, projects are lost, mistakes are repeated, wrong paths are followed again, all driven by bad, or unjust decisions.

Society needs to accept a level of failure and in effect that is what emerged at the recent United Nations COP28 conference where it is accepted that the world needs to move from its dependence on fossil fuels. This marked the first time whereby there was a consensus of the acceptance to move away from fossil fuel use. Today continuing to use and rely on fossil fuel should be seen as an energy policy failure, and this Special Issue demonstrates a range of policy pathways that different parts of the energy sector can adopt to move to be low-carbon.

4.1. Taking more risk in the energy sector is needed

As the world faces more climate events each year, there seems a reluctance to take more risks in addressing energy policy failure. This risk averse approach today stems from perhaps the lack of finance available to many governments due to the current post-COVID-19 economic climate and even the energy crisis attributed to the Russian invasion in Ukraine (see Kuzemko et al., 2022). However, when one looks at the energy system over time there is a lack of challenging the *status quo* of the current operation of the energy sector. More risks need to be taken to address how society will meet its energy and climate targets. It is the current incumbents who favour society taking less risk so that they can continue their operations as before.

Table 1

Energy justice articles on the rise 2013–2023.

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
No. Of Articles	3	11	18	45	48	115	124	176	230	287	305

Source: Collated by Authors (January 2024) from www.sciencedirect.com).

Still, mechanisms of just energy transition require that the members of the society, especially those vulnerable, would be protected from such negative effects as energy poverty resulting from wrongly conducted transition. This requires greater justice, at the level of fair distribution of burdens related to energy transition, between the energy users and the energy producers. As the 39th US President Jimmy Carter (1977) said in his energy address ‘No one will gain an unfair advantage through this plan. No one will be asked to bear an unfair burden’. These circumstances highlight the role of ethics in the energy sector.

4.2. A new role for the practice of ethics in energy commerce

There is a new wave of ‘responsible’ behaviour permeating throughout society. In essence this is characterised by an increased ethical standard as the world faces climate change and its’ associated issues. A prominent tool in this context is the rise of the environmental-social-governance (ESG) framework. Across every business sector today, the world is moving to adopt ESG standards for doing business. At its core ESG is a framework whereby companies (including public sector companies and organisations) can state how they are meeting energy and climate goals, and how their business activities will impact upon society and the environment.

However, the practice of ethics in energy commerce has not fully happened to-date. The sector is known for its failures and also its major impact on the environment and society. In this regard one of the key challenges that the low-carbon energy sector has to overcome is the past reputation, as discussed in this Special Issue. Due to the scale of energy policy errors impact on the environment and local communities the fossil fuel sector in many areas of the world has lost the trust and confidence of other energy sector stakeholders (i.e., the government and in particular, civil society, including indigenous people). In order to rebuild this relationship, it is necessary to start with a platform where change can happen, and this is what ESG can provide. This, however, may require a new type of ‘social contract’ (or as the UN refers to it as an ‘eco-social’ contract) based on the ESG framework itself.

4.3. Next actions for researching energy policy failure

Further actions are needed in developing research to address energy policy failure. As this Special Issue has proven injustice of different types of and features lies upon energy policy failures. Among solutions we propose more openness and real dialogue between key energy stakeholders. This may require an exploration of if and how a new public institution or institutions should and could be established for examining energy policies and assessing their performance, potential for failure, and whether energy justice is prevalent within. Naturally, this must not be a one-size-fits-all proposal that completely ignores national context (like political institutions, market structure, or social circumstances), but a way to include theories like energy justice in real policy making.

The efficiency of these solution would be determined by its powers – the more regulatory character and independence – akin to a *day-watchman type* – the more possibilities for safeguarding the outcomes of its work (Sokolowski, 2016). An alternative is a more deliberative approach, with platform aimed at exchanging views and knowledge on energy policies based on justice – needed for just energy transition. The remit of such an institution, its powers and scope would provide for an interesting area of research and would over time address and reduce energy policy failure.

One of other research fields is to further develop around establishing

Table:2
The 5 Energy Justice Principles – Definitions, Application & Sources.

Energy Justice Principle	Countries that Apply this	Brief Summary Definition
Distributive	United States, Colombia and South Africa	Cost, finance and affordability should be fair
Procedural	United States, Colombia and South Africa	The legal system provides a platform for each stakeholder to be represented
Restorative	United States, Colombia and South Africa	Prevent and correct environmental impacts
Recognition	United States, and Colombia	Gives a voice to stakeholders (inc. indigenous people)
Cosmopolitan	None yet	Ensures obligations are met across regions and borders
<p>Legislation & Policy Material for each Country:</p> <ul style="list-style-type: none"> • United States: United States Department of Energy. 2022. Justice40 Initiative Fact Sheet. ¹ • Colombia: Colombian Ministry of Mines and Energy. 2023. Diagnóstico base para la Transición Energética Justa.² • South Africa: South Africa Presidential Climate Commission. 2022. Just Transition Framework for South Africa.³ 		
<p>References Used by Country:</p> <ul style="list-style-type: none"> • United States: (1) Walker, G., & Day, R. (2012). <i>Fuel poverty as injustice: Integrating Distribution, Recognition and Procedure in the Struggle for Affordable Warmth</i>. Energy Policy, 49, 69-75; (2) Baker, S., DeVar, S., & Prakash, S. (2019). <i>The Energy Justice Workbook</i>. Initiative for Energy Justice; (3) Ruano-Chamorro, C., Gurney, G. and Cinner, J. (2021). <i>Advancing procedural justice in conservation</i>. Conservation Letters, 15(3); and (4) Hazrati, M., & Heffron, R. (2021). <i>Conceptualising restorative justice in the energy transition: Changing the perspectives of fossil fuels</i>. Energy Research & Social Science, 78, 102115 • Colombia: (1) Vega-Araujo, J. & Heffron, R. J. 2022. <i>Assessing elements of energy justice in Colombia: A case study on transmission infrastructure in La Guajira</i>. Energy Research & Social Science, 91, 102688. and (2) Heffron, R. J. & McCauley, D. 2017. <i>The concept of energy justice across the disciplines</i>. Energy Policy, 105, 658-667; and • South Africa: (1) Cahill, B. M. Allen. 2020. <i>Just Transition Concepts and Relevance for Climate Action</i>. Washington, D.C.: Center for Strategic and International Studies (CSIS); and (2) McCauley, D. and Heffron, R. J. 2018. <i>Just transition: Integrating climate, energy and environmental justice</i>. Energy Policy, 119, 1-7 		

Source: Created by Authors 2023.

1 United States Department of Energy. (2022). Justice 40 Initiative Fact Sheet. Available at: https://www.energy.gov/sites/default/files/2022-08/J40%20Fact%20Sheet%208_25_22%20v3.pdf (last accessed January 17, 2024).

2 Colombian Ministry of Mines and Energy. 2023. Diagnóstico base para la Transición Energética Justa. Available at: https://www.minenergia.gov.co/documents/10439/2_Diagn%C3%B3stico_base_para_la_TEJ.pdf (last accessed January 17, 2024).

3 South Africa Presidential Climate Commission. 2022. Just Transition Framework for South Africa. Available at: https://pccommissionflo.imgix.net/uploads/images/22_PAPER_Framework-for-a-Just-Transition_revised_242.pdf (last accessed January 17, 2024).

Source: Created by Authors (2024).

a new social contract. This is where all stakeholders work together to develop a new relationship for working together for the energy sector. Energy justice could be central to this as such a new contract would involve detailing the specifics of how this new relationship would be constructed. Such social contract for the energy sector could be defined as: *the ‘just’ agreement between stakeholders in the energy sector and society where citizens’ rights and well-being are protected in today’s modern economy at local, national, and international levels* (Heffron and De Fontenelle, 2023).

Finally, let us close the discussion on energy policy failure here with an open question on one area that could result in significant need for research in the future and that will have an impact on energy policy. This is the matter of policy-makers and company executives holding them personally liable for the decisions that lead to energy policy failure and injustice; in essence, there needs to be at the very least a level of future-proofing in the energy sector (Heffron, 2023). This, however, requires further research, including comparative works at different levels (national and cross-sectoral – among different branches of law like

constitutional, criminal, or administrative law). What may be a useful clue is another reference to environmental damage, as in the case of environmental justice from which energy justice evolved.

A key question therefore in light COP28 has to be centred on if as above, new institutions or a new social contract between stakeholders is needed to move forward this agreement on the need for a decline in fossil fuel use. Research questions need to emerge over how that can be achieved faster. Seen in this light, we find that new and further research into these areas could be a major *panacea* to addressing energy policy failures in the future. We are very confident that some of these works will emerge soon, and will also be published in *Energy Policy*.

CRedit authorship contribution statement

Raphael J. Heffron: Conceptualization, Formal analysis, Validation, Writing – original draft, Writing – review & editing. **Maciej M. Sokolowski:** Conceptualization, Formal analysis, Validation, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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