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Energy justice: Conceptual insights and practical applications

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HIGHLIGHTS

- Concepts from justice, philosophy, and ethics can significantly inform energy consumers and producers.
- "Energy justice" can serve as a novel conceptual, analytical, and decision-making tool.
- A synthetic energy justice framework can enhance future energy analysis and research.

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ABSTRACT

Though it is far from obvious, concepts from justice, philosophy, and ethics can significantly inform energy consumers and producers. This study details how energy justice can serve as a novel *conceptual* tool for philosophers and ethicists that better integrates usually distinct distributive and procedural justice concerns. Energy justice serves as an important *analytical* tool for energy researchers striving to understand how values get built into energy systems or to resolve common energy problems. Energy justice presents a useful *decision-making* tool that can assist energy planners and consumers in making more informed energy choices. Our energy justice framework has elements of Kantian ethics, which takes each person as an end. It has libertarian elements of freedom and choice, suggesting that good societies present people with a set of opportunities or substantial freedoms, so they can choose to exercise these or not. It is pluralist about value, holding that capabilities for people are different and also that their own interests vary. It is concerned with justice as recognition, noting that failures of procedural justice can result in discrimination and marginalization. It, also, has elements focused on utilitarianism and welfare, attempting to improve the quality of life for all people, as defined by their capabilities.

1. Introduction

Late last year, one of us had a conversation with a woman who was putting $70 of gasoline into the tank of her large Sports Utility Vehicle. She explained that she needed the large car because her children would squabble if they had to sit near each other. Moments later she added that it was a pity that her brother had been wounded in Iraq, fighting to get cheaper oil to America. She, like many other consumers and even commentators and analysts in the energy studies field, did not see the ethical connection between her personal demand for oil, and military casualties related to securing that oil in the Middle East. She, in short, did not appreciate the energy justice dimensions to her behavior.

To many, seeing the word "energy" next to "justice" may seem like a confusion of disciplines. What does ethics, morality, and philosophy have to do with tons of coal, barrels of oil, or electrons flowing through a high voltage transmission line? However, if one takes a closer look, the moral implications of our collective energy decisions may become more apparent. Our species is drifting into a future threatened with climate change and rising sea levels [1], burgeoning levels of energy-related pollution which threaten our health [2], aggravated scarcity and insecurity of energy fuels [3], the proliferation of nuclear weapons [4], and a host of other hazards [5]. This creates pressing ethical conundrums with no easy resolution. It is becoming increasingly clear that routine energy analyses do not offer suitable answers to these sorts of issues. The enduring questions they provoke involve aspects of equity and morality that are seldom explicit in contemporary energy planning and analysis.

However, our moral systems are also ill-equipped to handle the complexity and expansiveness of modern day energy problems,

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especially climate change, which World Bank chief economist Nicholas Stern called the greatest energy-related externality of all time [6]. As one sign of this, a recent study from psychologists and environmental scientists at the University of Oregon concluded that human moral systems are not well attuned to address the crisis of climate change given its complexity, the difficulty of assigning blame, and our own complicity in causing it [7]. They noted that cognitively, climate change is abstract, complex, and non-linear, making it hard to predict the trajectory of future emissions pathways, and harder still to connect them with actual consequences on the ground. It becomes even more difficult when most of the impacts from climate change will occur in the future, making them temporally distant, and when those impacts are asymmetric, such as increased rainfall in some areas, and decreased rain in others. Climate change, moreover, is largely unintentional, making it relatively "blameless" and lacking features of intentional moral transgressions such as murder or cheating. In the case of climate change, there was never any real intention to do harm—and in some cases, there was the opposite, such as building coal-fired power stations to provide jobs, improve economic security, or expand access to modern energy services. Lastly, climate change must overcome our guilty bias; that is, humans do not like to feel guilty, and will derogate evidence of their own role in causing a problem. The implication is that individuals will work to avoid feelings of responsibility for climate change; some will even have optimistic biases, downgrading any negative information they receive and counterbalancing it with almost irrational exuberance [8].

Clearly, we need new ways of thinking about, and approaching, the world's energy problems—and the issues at hand make global energy security and access among the central justice issues of our time, with profound implications for happiness, welfare, freedom, equity, and due process. Any decent and stable society must grapple with the injustices surrounding energy and the environment. As one Brookings Institution study recently noted:

> *Decisions or indecisions today can impose heavy costs on our descendants or, at a minimum, limit the choices they will have. That is why there is an unprecedented need to merge the reality of an international community with the established principle of intergenerational responsibility* [9].

Yet a series of recent content analyses of the top energy technology and policy journals confirms the perceived unimportance of justice as both a methodological and topical issue [10,11]. These analyses demonstrated that out of 5318 authors publishing in these journals over a period of ten years, only 6 had training in philosophy and/or ethics and only one used the word "justice" in its title and/or abstract [12,13].

This article aims to give students, consumers, planners, and policymakers both purpose and direction concerning their choices about energy production and use. It details how energy justice can serve as a novel *conceptual* tool for philosophers and ethicists that better integrates usually distinct distributive and procedural justice concerns. It suggests that energy justice serves as an important *analytical* tool for researchers striving to understand how values get built into energy systems or to resolve common energy problems. And it supposes that energy justice presents a useful *decision-making* tool that can assist energy planners and consumers in making more informed energy choices. It presents availability, affordability, due process, good governance, prudence, intergenerational equity, intragenerational equity, and responsibility as central energy justice principles.

Indeed, the topic of energy justice matters well beyond purely philosophical reasons. Firstly, energy justice can directly impact community livelihoods and the bottom line of energy corporations [14]. As just two examples, in Australia dozens of protesters scaled 50 m walls and chained themselves to the Hay Point Export Terminal near Mackay because they feared the ethical implications of exporting coal, causing $14 million in lost revenues [15]. In Nepal, Maoist rebels repeatedly bombed and attacked various hydroelectric power stations owned by those they saw as corrupt or unfair [16]. Single conflicts such as these—over issues of distributive or procedural justice—can cost companies millions of dollars in delays, lawsuits, missed opportunities, social dislocation, and the damage of corporate reputations [17].

Secondly, psychological research has suggested that one of the most powerful predictors of the intention to take energy problems seriously, or to change energy related lifecycles or decisions, is who the respondent blames for energy problems [18]. If people believe their own consumption is wasteful and accept personal responsibility, they are likely to change their attitudes and actions. But if they are able to blame companies, politicians, foreign countries, and other consumers, they will do nothing. Who people see as responsible for energy problems, and what they perceive as just or unjust, can shape investment decisions, personal behavior, and even trust (or lack of trust) in both information about energy and the institutions regulating or supply it [19]. The topic of justice therefore permeates many aspects of energy conversion, distribution, marketing, and use. Moreover, reframing energy problems as ethical or moral conundrums can help energy producers and consumers see them in ways that make them more aware, accountable, or responsible for their decisions [20].

2. Energy justice as a conceptual tool

To begin, we define the concept of "energy justice" as a global energy system that fairly disseminates both the benefits and costs of energy services, and one that has representative and impartial energy decision-making. To reach this definition, it is useful to first start by defining "justice." Justice as a fundamental concept has been debated for well over two thousand years. As one recent philosophical textbook put it:

> *If the concept of human rights is of relatively recent origin, just the opposite could be said about the concept of justice: It is a moral concept with a rich and long history, stretching back before the time of Plato and Aristotle and running as a constant thread from ancient thought to the twenty-first century* [21].

For the Greeks, justice involved living a virtuous life, but did not ban slavery; for modern libertarians, it is about minimizing government intervention and control over individual choices; for social philosophers, it can be about equality and welfare. For Christians, justice refers to divine law commanding human behavior, with stipulations in the Bible such as the "Golden Rule" and the "Ten Commandments" [22]. For European philosophers during the eighteen and nineteenth century such as Thomas Hobbes and John Locke, justice was derived from "natural law" and, like physics or gravity, an absolute concept consisting of moral rules and principles [23,24]. The criminal justice system in most countries sets laws specifying rules to be obeyed and penalties imposed when one breaks them. Some believe therefore that justice is inherently tied to the law, and to retributive or preventive orders made by a judge or an official authority like Congress. Others believe justice concerns individual liberty, and the ability of each citizen to freely pursue – and hopefully realize – their own individual desires. Many modern notions of justice focus on the concept of "fairness" and attempt to create the conditions for fair social structures, which in turn produce a fair distribution of goods and services.

One recurring theme is that the concept of justice may be less important for what it *is* than for what it *does*. In this sense, the concept of justice is a tool with multiple functions: