



## ASPEN GLOBAL CHANGE INSTITUTE ENERGY PROJECT December 2019 Quarterly Research Review

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### Energy justice: a complex but vital piece to a clean energy transition

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The global energy system of the future will look drastically different than it does today. Energy sources, markets, grids, governance structures: every dimension of the energy system is already undergoing rapid changes. While the challenges posed by the pace and scale of this transformation are immense, so too are the opportunities for environmental sustainability, economic gain, and social well-being. Of all the potential co-benefits of a low carbon energy system, one that is not necessarily assured is energy justice. If this important component is overlooked, our future energy system has the potential to exacerbate existing inequities or create new ones. But if done with intention, this can be a rare and vital opportunity to amend structures that have long inflicted damages and injustice on communities and ecosystems around the world. In so doing, we can create a far more robust and equitable energy system, while bypassing opposition and friction to a clean energy transition.

Historically, national and international energy policies have been aimed at protecting energy supplies without thinking about the impacts to society at large (Sovacool and Dworkin 2015). Consequently, we have an energy system with unequal access, affordability, and externalities that degrade the environment and human rights. Principles of energy justice demand us to pursue instead a world that “shares both the benefits and burdens involved in the production and consumption of energy services, as well as one that is fair in how it treats people and communities in energy decision-making” (Sovacool and Dworkin 2015).

Energy justice is incredibly multidimensional and includes intergenerational justice (not harming future generations), environmental justice (the right to a clean environment), social equity and welfare (the right to affordable, accessible energy), and good governance (including transparency and accountability), to name a few (Sovacool and Dworkin 2015). These considerations are hardly an academic exercise but rather amount to life and death for many at-risk populations. For instance, if an electrification plan does not support micro-grids, remote villages may be unable to build modern healthcare facilities. Or when good governance is lacking, a corrupt central government could use energy infrastructure construction as a means to displace and weaken an oppositional ethnic minority. A low income community downwind from a refinery suffers from health benefits that hamper residents’ capacity to thrive, further entrenching them in poverty. Individual households in this same community could find it difficult to pay their

electricity bills and be faced with their power being shut off, further threatening the health of those most vulnerable (the elderly, sick, young) when extreme cold and heat hit the area with increasing frequency.

As a result, various energy justice researchers have proposed frameworks to incorporate energy justice into decision-making. Utilizing an energy justice framework could bypass inequities, or at the very least challenge all of us to adopt morality into our decision-making when it comes to energy. The predominant framework (Jenkins et al. 2016) for assessing energy justice is:

- 1) Distribution of an injustice (the what),
- 2) Recognition of who is affected (the who), and
- 3) Procedural strategies for remediation (the how to fix it).

Distributional justice (the what) targets the unequal distribution of energy benefits and energy production burdens. An example might be the imbalance between where energy is sourced (e.g. siting of a wind farm) vs. where it is consumed. This is a common challenge due to the physical limitations of renewable energy source availability, but through the distributional justice lens, we can acknowledge it results in the thorny intersection between a technologically feasible and desirable transition vs. the reality of local impacts (Jenkins et al. 2016). For instance, communities around the world have mounted fierce resistance to the building of new transmission lines and infrastructure to accommodate the balancing of supply and demand of intermittent renewables.



Credit: NYTimes, David Ebener/DPA Picture-Alliance, via Agence France-Presse. Protesting a high-voltage power line in Pegnitz, Germany. The government has agreed to bury such lines wherever possible, increasing their cost.

Thinking around distributional justice ties directly into recognitional justice (the who), through which we can identify which populations are disproportionately impacted by energy systems and/or are misrepresented or ignored in decision-making. Recognition justice aims for all individuals to be free from physical harm and devaluation, be respected, and have equal political rights. This lens of energy justice can examine both energy production (e.g. when minority groups are disproportionately living in close proximity to power plants), and consumption (e.g. the unfair distributional economic burden shouldered by the elderly or the differently-abled) (Jenkins et al. 2016). Figure 1 shows additional examples of disproportionately burdened populations in the clean energy transition.

Procedural justice is concerned with inclusive protocols in energy system decision-making to ensure equitable engagement of all stakeholders regardless of background or identity. It relies upon

transparency, incorporating local knowledge, and fair representation (Jenkins et al. 2016). Through such protocols, unjust practices and decisions can be avoided, designed instead to equalize benefits and burdens of the energy system. A key to realizing procedural justice is to not only broadly engage communities and stakeholders, but also to ensure representation of women, people of color, and underrepresented groups in leadership positions.

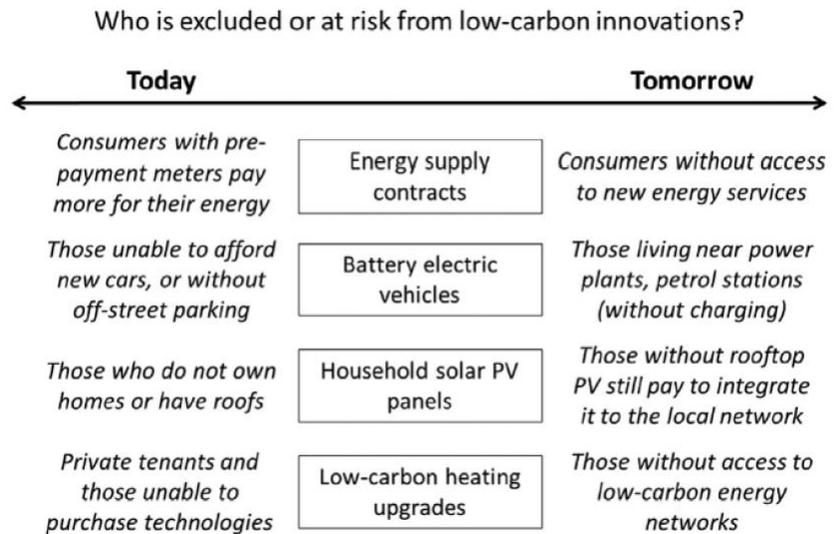


Figure 1. Recognition of some groups who are and/or will be disproportionately burdened in the clean energy transition. Sovacool et al. 2019.

This trifold framework can and should be utilized in decision-making about individual policies, as well as in a larger systems approach to energy. Often, decisions are focused on production or consumption alone, without attention to inadvertent injustices that ripple through the whole system. This plays out on local to international scales with the highly globalized processes required by our energy system, spanning resource mining, transmission, transport, and waste (Jenkins et al. 2016). For instance, the exponential rise in cobalt demand, in part to scale up lithium-ion batteries for storage of renewable energy, has come at the cost of horrific human rights violations and illegal mining in the Democratic Republic of Congo, which supplies over half of the world’s cobalt (Conca 2018).

While some energy justice advocates adopt a universalist approach, others promote a far more sovereign approach to energy justice. In this line of thought, self-determination is at the heart of energy justice. For instance, postcolonial countries may veer away from a top-down, centralized approach to bettering energy access; leaving the transition instead in the hands of local communities. Through this emancipatory approach, communities choose whether off-grid or traditional energy sources (like charcoal) are more just than a centralized energy system that may diminish their self-reliance and energy security (Broto et al. 2018).

Communities may decide that the “social mandate” for universal electricity access is inherently at odds with their energy needs and tradition. For instance, they may be opposed to expanding electricity infrastructure due to historical development and exploitation under colonialism, or infringement on local territorial and resource control. Another potential challenge is that when generation of renewables is introduced to overcome energy access injustices, it can be expensive. So those with easier, more affordable access in village centers and cities may have easier access and ability to afford renewable electricity more so than those who live more remotely in proximity with their land or farms (Broto et al. 2018). These examples underscore how the energy transition can inadvertently exacerbate existing inequities and highlight the complex nature of energy justice in different circumstances.

Ultimately this post-colonial concept of energy justice calls on decision-makers to appreciate the heterogeneity of social and political conditions and self-determined needs when making energy decisions

(Broto et al. 2018). This harkens to a call by Healy and Barry in 2017 to focus not only on specific inequities and their policy solutions, but rather on the greater underlying power imbalances in political economies that are the source for such inequities.

Energy justice is complex and cannot be universally conceptualized or applied to decision-making, but will be critical for garnering support and building momentum to actualize a clean energy transition. Much work has been done identifying the technologies and systems that can decarbonize the global energy system. However, as those technologies move from theory to practice, scaling up at the pace needed to stop the worst impacts of climate change, the resulting opportunities and challenges will require meaningful integration of an energy justice framework into decision-making.

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