ENERGY JUSTICE, JUST TRANSITIONS, AND RENEWABLE ENERGY
POLICIES: EXAMINING ENERGY TRANSITIONS IN THE STATE OF VERMONT

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# ABSTRACT

In the United States, sub-national state policies play outsized roles in renewable energy policy. Vermont is considered a leader in renewable energy transitions, exemplified by its goal of a 90% reduction in greenhouse gas emissions by 2050. While scholars have praised Vermont's transition policies, few studies analyze it using energy justice or just transition principles. This is a crucial omission, as justice in energy transition has both moral and instrumental importance – unjust transitions may thwart themselves by failing to achieve widespread societal support. I make initial contributions to this study using original research conducted as a member of an environmental justice partnership. First, I find that policy ignores the opportunity provided by household transition benefits to mitigate energy vulnerability, benefitting wealthy property owners instead. The same policies also appear to impact public energy governance processes, marginalizing energy vulnerable households. As an alternative, I suggest policy frameworks which characterize energy a public good. Second, I analyze discourses in Vermont's renewable energy planning documents, as well as interview discourses about Vermont's renewable energy transition, to study how these policies prevent and/or encourage just transition politics. I compare these visions against those in just transition literature, finding marginal overlap. I conclude that Vermont energy transition discourses largely prevent just transition by assuming a neoclassical economic vision. I suggest just transition advocates may use of marginal overlap to advance rhetorical claims, but that further research into what fosters the small number of existing just transition discourses in Vermont is needed.

# ACKNOWLEDGEMENTS

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## CHAPTER 1: COMPREHENSIVE LITERATURE REVIEW

### 1.1. Energy Transitions in Context

Climate change's roots in fossil fuel energy emissions make renewable energy transitions – intentional political projects to replace such fuels – central to mitigation and adaptation. Yet this statement ignores important questions of who uses fossil fuel energy, how, how much, and why. These are questions of how energy entangles with social, political, and economic structures (equally applicable to renewable energies as well), which I think are critical to understanding energy transitions. The academic and activist fields of energy justice and just transitions point out that these are also questions of fairness. Energy transitions therefore cannot be neat and tidy substitutions, but are instead complex sociotechnical processes.

Williams and Doyon (2019:144) summarize this perspective with the claim that there are "normative and instrumental" reasons for justice in energy transitions. Their normative case refers aligns with the Just Sustainabilities framework, prioritizing social equality and cooperation alongside environmental wellbeing (e.g. Agyeman 2013; Agyeman et al. 2016). The norm is premised on an interconnection between society and nature, including in terms of energy. An example of such interconnection is how in many parts of the world, heating is necessary to human wellbeing. When dependent on fossil fuels, heating pollutes the atmosphere with greenhouse gases (GHG) and threatens life across the planet. From the sustainability framework, it is key to prevent GHG emissions without denying people the fuels they need to sustain themselves. For instance, raising the prices of heating fuels to discourage use may force low-income households to go

without adequate heating fuel in order to afford other needs (Sovacool and Dworkin 2014).

Williams and Doyon's instrumental case refers more to social, political, and economic systems, stating that injustices "erode support" for transitions in general (2019:144). Recent examples of this include the 2018 Yellow Vest protests in France, sparked by a fuel tax increase to discourage fossil fuel use (Nature Energy Editorial Board 2019). In Ecuador, the government's removal of subsidies for fossil-based cooking fuel also spurred widespread protests, leading to subsidy reinstatement in 2019 (BBC News 2019). Each of these upheavals stems from the interconnections between economic systems that provision energy as a commodity, political systems governing their pricing and access, and socioeconomic systems which leave the distribution of wealth uneven.

These cases alone demonstrate the importance of justice in climate mitigation (and adaptation) policy. But they gloss over an important, interrelated point, which is the interconnection of social hierarchies with these political and economic conditions. For instance, access to affordable energy varies significantly by race in the United States, with high prices and precarious access disproportionately affecting people of color (Finely-Brook and Holloman 2013; Baker 2019). The fields of energy justice and just transition both address these hierarchies, and are therefore crucial to climate change politics and policies. But both fields are broad with conflicting positions. In what follows I argue which positions in each field I find most useful for climate analyzing energy transition policies. I also discuss overlap between the two fields and suggest how they can be combined in analysis.

## 1.2. Energy Justice

Energy justice is largely an academic – as opposed to "activist" – field (Heffron et al. 2015; Jenkins 2018) addressing the social injustices surrounding energy use writ large. The field also addresses injustices that arise in energy transitions. It has roots in the environmental justice literature (Jenkins et al. 2016; Jenkins 2018) and therefore focuses on distributive injustices (e.g. the concentrations of polluting energy production facilities in areas populated by people of color), procedural injustices (e.g. lack of due process in energy infrastructure siting), and/or recognition injustices (e.g. utility companies failing to recognize the electrical needs of at-home medical patients in developing price models). By the same logic, it also focuses on energy issues faced disproportionately by the poor, people of color, and women (Sovacool et al. 2016; Lennon 2016; Baker 2019; Allen et al. 2020).

I find three main principles in the energy justice framework. First, energy and energy use are key components of livelihood and wellbeing (Sovacool and Dworkin 2014; Day et al. 2016). Energy vulnerability – "problems of access to sufficient and affordable energy" (Day and Walker 2013:15) – is therefore an injustice because it interferes with peoples' ability to meet their needs comfortably. The usual example of this is fuel poverty, in which poor households spend disproportionate shares of their money on fuel costs (see for example Walker and Day 2012; Teller-Elsberg et al. 2016; Reames 2016). Second, social, economic, and political forces combine to produce energy injustices because energy systems are sociotechnical. This term refers to the fact that the politics, economics, infrastructure, purposes, uses, and technologies that make the energy

system function cannot be meaningfully separated from social questions (Miller et al. 2013). Energy injustices are therefore contingent on political, social, and economic systems, not the result of chance. Baker (2019) points out how concentrations of energy extraction, refinement, and pollution in communities of color in the United States is part of environmental racism and sacrifice zones more broadly (see also Agyeman et al. 2016).

Third, energy transitions must address these interconnections, and policies that do not are inappropriately technocratic or misguided. Eames and Hunt (2013:49) point out that energy transitions include "deeply contested technologies and prospective societal pathways to a range of different low-carbon futures" each with "differing distribution of socio-economic costs and benefits." Sovacool and colleagues (2016:311) similarly remark that energy transitions are "highly confrontational" by default because they require "alterations at every level of the energy system, in a nearly simultaneous manner."

This third tenet contrasts some with the dominant Multi-Level Perspective (MLP) theories about energy transitions such as "transition management," and "technological information systems" (Eames and Hunt 2013; Geels 2005; Geels et al. 2017). These fields approach transitions less in terms of justice and injustice than of optimality and effectiveness. While MLP theories share the sociotechnical systems perspective with energy justice literature, they are somewhat more ambivalent about whether or not justice arises from energy systems (Eames and Hunt 2013). In such approaches to transition, energy systems are made up on one level of individual interactions, a second by rules,

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policies, and available technologies which shape those interactions, and a third by overall system 'paradigms,' which are the prevailing character of the systems themselves (e.g. a 'fossil fuel' paradigm vs a 'renewable energy' one). The primary objective of 'Transition Management' or 'Technological Information Systems' is therefore to tweak rules and policies on the second level, often using technocratic measures like economic and behavioral modeling, to change individual behaviors or available technologies in the first. Once these behaviors change, MLP frameworks contend that the energy systems shift into new paradigms (Eames and Hunt 2013). Whereas this approach is thought to achieve energy transitions as efficiently and effectively as possible, energy justice perspectives, though they may draw on MLP theories, are concerned more with normative outcomes.

Authors in the energy justice field disagree about what measures are necessary to realize these principles in energy systems and energy transitions. Sovacool and colleagues (2017:677) provide a consensus definition of energy justice: "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 this, I would add contributions from the subfield of energy democracy, which Burke and Stephens (2017:35) define as a process of "democratically restructuring the energy and electricity sectors through the processes of shifting from fossil-fuel-based systems to renewable energy systems." The definition of energy justice thus includes some kind of strong, egalitarian decision-making institutions (in a related paper, Stephens et al. [2018] cite Vermont's Town Energy Committees as localized bodies which can make energy planning more democratic).

A reform-oriented branch of the field advocates for justice through policy principles, metrics, or criteria for energy decision-makers to consider or weigh. A central example is Heffron and colleagues' energy justice metric, which aims to quantify energy justice to "directly connect with economists" who are "dominant" in energy policy and decision-making (Heffron et al. 2015:172). Jenkins (2018:120) notes that such an approach, distinct from "activist" approaches of other fields, lets energy justice scholars make "significant contributions to mainstream policy-making." By contrast, Lennon provides a revolutionary approach to energy justice and energy systems, targeting not the criteria energy decision-maker's weigh as the causes of injustice but the nature of the system itself. Lennon, tracing the role of energy and energy systems in slavery in the United States and the legacy of racism, argues energy injustice comes from the material of energy systems and energy transformation themselves: "[w]e can talk endlessly about fossil fuels' deleterious impacts on communities of color, but the point here is that our commercialized infrastructure for transforming matter – which includes solar panels on low income buildings – has always taken shape through structures of meaning and materiality that deem certain lives expendable" through, among other practices, sacrifice zones (Lennon 2017:25; see also Mulvaney 2019)

I find Baker's 'anti-resilience' (2019) framework effective in bridging these two positions. Baker draws from Lennon, claiming energy systems should be analyzed with the assumption that they fundamentally harm low-income communities and communities of color (by creating relationships of dependence between these communities and for-profit energy providers, by turning these communities into sacrifice zones for energy

extraction or production, through exploitative energy workforce practices, etc.). However, the framework avoids the dichotomy of 'reform or revolution.' Instead, it draws a distinction between 'resilient' policies that address unjust outcomes in the energy system and transformative policies that disrupt the processes which produce such outcomes. It assumes the former will "freeze [injustices] in place" (2019:36), while anti-resilient, transformative policies will "yiel[d] new possibilities of ownership structures and relationships to power" (2019:46). Baker provides four guidelines for creating transformative policies and seizing opportunities for justice in transition: place "people of color and the poor at the front of the line to benefit" (2019:39), create official processes for energy policy that "specifically include under represented communities" (2019:43), "redistribute the economic benefits of the energy system" (2019:44) and reconceptualize energy "as a commons" (2019:46) rather than a commodity. As an example, energy policies like net metering, targeted explicitly towards low-income communities and communities of color, could be anti-resilient by disrupting dependence on for-profit utilities for energy production and energy access. By contrast, Baker cites the state of Hawai'i's renewable portfolio standard as resilient, operating such that that "low-income communities home to large Native Hawaiian populations and people of color…will once again be home to new, largescale clean energy plants owned by corporate interests" (2019:19).

## 1.3 Just Transitions

Just transition literature, by contrast, is more 'activist.' It is at once a mainstream political concept, an academic field, and a demand of social (and labor) movements

(White 2019; Jenkins et al. 2020; Stevis et al. 2020). The concept has much in common with energy justice, however. Healy and Barry (2017) refer to it as energy justice's "politicization." Like energy justice, just transition has roots in the environmental justice movement (Farrell 2012), focusing heavily on the distribution of benefits and burdens—often in economic terms relating to jobs and local economies—which occur as a part of environmental politics. While the term is most frequently used now in terms of climate change and energy transitions (Rosemberg 2020), originally it also addressed toxins and environmental pollution more broadly (White 2019). As opposed to macro-scale questions of economic 'health' or 'efficiency,' just transition is focused specifically on disadvantaged "workers and frontline communities" (Stevis et al. 2020:21). In the most general terms, just transitions literature calls for special measures to protect people whose employers will fire them in response to environmental or energy regulations, as well as local economies underpinned by these employers. As described below, the extent to which these special measures extend throughout society or across other disadvantaged groups is debated in the field.

The exact meaning of just transition, however, is contested (Stevis et al. 2020:4). Perhaps the single unifying principle is the moral commitment to protecting individuals from market forces. In other words, opposing the principle that individuals meet each other in the market as equals and that market exchange efficiently optimizes all individuals', and therefore society's, utility (Gowdy 2010). Newell and Mulvaney (2013:144) characterize this position as a need to "centrally address the key political economy questions of 'who wins, who loses, how and why' as they relate to the existing

distribution of energy, who lives with the side effects of its sites of extraction, production and generation, and who will bear the social costs of decarbonizing energy sources and economies."

Like energy justice, the just transition advocates split on how to advance their goals. What I call 'narrow' just transition proposals concentrate on preventing or mitigating distributive conflict in energy transitions. Here, just transition is broadly a way to overcome the 'jobs versus environment' framing (Evans and Phelan 2016). Narrow just transitions involve proposals for retraining, direct compensation, or other mitigating measures for workers and frontline communities. Eisenberg (2019:324-328) for example proposes targeted federal aid packages and calls for long-term engagement of local economic planning with disadvantaged people. Tcherneva (2018) proposes a US-Federal Jobs Guarantee program which would place displaced energy workers in new positions automatically. Rosemberg (2017:8) suggests (among other proposals) active labor market policies to deliver "employment services and providing information, guidance, and matching services" to "workers at risk of unemployment."

I consider these narrow because they are typically targeted programs with geographic or employment-sector specifications. By contrast, broad approaches to just transition focus on the political economy and socio-natural relationships as a whole (Giacomini 2020; Goldtooth 2020). I find general tenets of this perspective include 1) political economies are unfair, and the distributions of power within them are uneven (e.g. Newell and Mulvaney 2013); 2) modes of economic production themselves, as opposed to particular industries alone, are unsustainable and require "proactive

transformation" (White 2019); and 3) energy and energy systems are core components of these modes of economic production, and changing them disproportionately harms disadvantaged people within political economic systems. In this last tenet, the broad approach to just transition overlaps heavily with energy justice and energy democracy (Sovacool and Dworkin 2014; Sovacool et al. 2017; Lennon 2017; Baker 2019).

Proposals for broad just transition are usually for radical changes in political, social, and economic relationships. For instance, Snell (2020:214) calls for "an interventionist state committed to social partnership and union involvement in the transition process." The Climate Justice Alliance's just transition frame is maintains that "the profit-driven industrial economy rooted in patriarchy and white supremacy is severely undermining the life support systems of the planet" and accordingly "[w]e must build visionary economy that is very different than the one we now are in" (Climate Justice Alliance 2020). Similarly, leaders from the Cooperation Jackson movement advocate for political changes which "create the conditions for the ecosocialist future we need" (Akuno 2020:108).

These three examples demonstrate that in terms of policy, broad just transition advocates often propose vague frameworks. This contrasts with the narrow frame, which is typically rooted in calls for specific (even if large-scale) government programs (e.g. the jobs guarantee). The narrow frame has had significant uptake of narrow just transition proposals in mainstream politics (Jenkins et al. 2020), which I find important but insufficient. While the narrow field's attention to distributional conflict is critical, I believe it inappropriately separates politics, economics, and environmental concerns into

problems which can be addressed in isolation. For instance, as Eisenberg (2019:323) points out, justifications for just transitions for energy workers may raise questions about just transitions for others: "where workers formed a longstanding dependency relationship with one industry [e.g. New York City Taxi Drivers]; their industry performed a quasi-public function; and the public's failure to act left the workers vulnerable to an abrupt collapse of their industry, leaving them without meaningful alternatives." This speaks to the difficulty of addressing a particular economic sector without addressing Newell and Mulvaney's 'political economy questions.' Moreover, addressing one of these three areas in isolation ignores its impact on the others. Proposals for a job guarantee, for instance, may fail to consider the impact of full employment on the ecological consequences of economic growth it entails.

The broader just transition field focuses on the interdependence of these factors, drawing from frameworks in which political, social, and economics are materially embedded in non-human nature (e.g. Brown 2016) and environmental problems originate from social inequalities (Bookchin 1980; Salleh 2009). The broad just transition framework therefore addresses social, political, and economic justice through a political economy lens. It aligns broadly with Fraser's Marxian definition of capitalism as an "institutionalized social order" (Fraser and Jaeggi 2018:166). By this, Fraser means that economic production depends on not only on labor exploitation also upon social and natural exploitation (e.g. paid and unpaid gendered labor, racialized expropriation of labor and land, and the need to pollute and disrupt land for fueling growth and depositing waste) (Fraser 2014).

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Fraser's point is not that these relationships are 'functional' to capitalism or begin with capitalism (Fraser and Jaeggi 2018:19). Instead, it is that they are all interconnected ("imbricated") with one another. Changes in one or more of these relationships reshape the others with which they are intertwined (Fraser 2014:68). Accordingly, action towards 'economic' justice in energy transitions must necessarily overlap with and work for justice in other social relationships – race, gender, and environmental. "Workers and frontline communities" therefore becomes a shorthand for the disadvantaged people in such relationships.

Importantly, the term "does not mean essentializing workers by overstating their role or placing them above other alienated and oppressed groups" (Stevis et al. 2020:21). Instead, support for 'workers and frontline communities' implies support for a broad view of environmental justice (e.g. Sze 2020) recognizing that 'frontline communities' (e.g. a coal mining town) are typically low-income and/or communities of color (Farrell 2012; Baker 2019). Further, recognizing that 'workers' in low-carbon economies may be more likely exploited by gender (Pearl-Martinez and Stephens 2016; Littig 2018, Giacomini 2020). Membership in 'workers and frontline communities' is therefore more about "axes of injustice" (Fraser and Jaeggi 2018:171), themselves bound up with "the organi[z]ation of and relations at work" (Stevis et al. 2020:22), than specific people or places.

Just transition perspectives are thus mutli-scalar (Pellow 2017). For instance, disadvantaged in the transition away from the use of coal would not simply be coal miners and coal communities but electricity customers who may experience rate

increases. The just transition vision is thus akin to Wichterich's (2015:83) There Are Many Alternatives (TAMA) framework. Here, people, rather than "wait[ing] for a single consensus on how to completely transform society" resist and unmake injustices "with multiple strategies" (Harcourt and Nelson 2015:10) starting from where they are with the conditions in front of them. The vision of the just transition discourse is thus one of strengthening political conditions ("enabling space" [Wichterich 2015]) in which theses 'many alternatives' can thrive, and one in which 'workers and frontline communities' unmake "axes of injustice" by their own initiative (Fraser and Jaeggi 2018:171).

A central example would be Cooperation Jackson's build-and-fight strategy, working to 'build' or prefigure a just transition through construction of a "solidarity economy" of worker-owned cooperatives focused on environmental sustainability (Akuno 2020). Their efforts extend into official politics too, 'fighting' at the municipal level, national and international levels (Akuno 2020:106) for policies which support their efforts to 'build.' The organization's Just Transition plan, for instance, calls for "expanded and sustainable public transportation" (Cooperation Jackson 2015) strengthening the flow of people and goods throughout the solidarity economy (and beyond) and decreasing fossil fueled transportation emissions.

The end goal of just transition is therefore quite vague. It might be thought of as a democratized political economy in which people can pose and answer normative questions about the purpose of their energy and economies: "energy for what? And to sustain what kinds of modes of life?" (White 2019:14). The upshot should not be that just transition is 'unrealistic' or unwieldy, but that a neat, packaged 'just transition'

policy will be insufficient and overly simplistic. As opposed to targeting particular economic sectors for relief in energy transitions alone, better approaches would be targeting specific conditions preventing worker and frontline community initiatives. These conditions might include proposals under the narrow just transition framework (for example, a jobs guarantee would alleviate conditions preventing fired energy workers from finding new jobs) but under a broad transition framework these as are understood enabling, not causing, larger changes in political economic conditions.

What follows from this overview is that there is much overlap between the energy justice and just transition fields. An overly simplified distinction between the two would be that energy justice, with its emphasis on households and energy sufficiency, pertains to energy use while just transitions, emphasizing political economy, focus on energy production. The strength of the anti-resilience framework proposed by Baker, and the broad just transition frameworks laid out by White and Stevis and colleagues, is their ability to address production and use holistically. The broad just transition frame as I have described it necessarily includes energy justice perspectives because of its attention to "axes of injustice" ranging from energy production to consumption. The anti-resilience framework also overlaps readily with a build-and-fight strategy from the broad just transition framework, demonstrated by its proposals for "new possibilities of ownership structures and relationships to power" (Baker 2019:46) in energy systems. There is also a slight connection between the MLP framework off of which energy justice scholars build and the "enabling space" approach to just transitions. In this context, secondary or 'regime-level' policies and rules in the MLP framework are akin to policies

providing "enabling space." Where the just transition framework breaks from MLP is in MLP's assumption that the primary or 'individual-level' is composed of individual equals. Just transition, by contrast, sees these individuals organized along axes of injustice, with social, political, and economic injustices hardwired into the system. Therefore, like energy justice, just transitions perspectives cannot accept the ambivalent 'optimality' focus in some MLP frameworks, but the two share an approach to rules, policies, and 'regimes' governing behavior.

## 1.4. Energy Justice, Just Transitions, and Policy

Though they address a wide range of relationships beyond formal political ones, energy justice and just transitions of course concern themselves with content and purposes of energy transition policies. As discussed above, the criteria on which policymakers make energy decisions are central to some energy justice scholars. The distributive impacts of energy policy decisions are also central concerns of the field of just transitions. But the fact that both fields have roots in environmental justice complicates their relationships to policymaking and the state in general. Recent papers from Pulido and colleagues (2016) and Pellow (2017) criticize the state – and therefore policy decisions—as antithetical to justice. For Pulido and colleagues, this comes from the relative ineffectiveness and lack of enforcement for environmental justice policy in the United States. For Pellow, it comes from theoretical works about the state label it inherently unjust and anti-ecological. I find these claims important, but I break with them slightly. I consider each one to essentialize states and governments, treating them as unitary actors. Routledge and colleagues present an alternative framework in which the role of government is contingent and the state is

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