Frontlining energy justice: Visioning principles for energy transitions from community-based organizations in the United States

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ABSTRACT

We review over 60 "visioning documents" authored by non-profits and frontline community members in the United States. These visions of energy justice – authored by the actors and communities that have historically organized energy justice programming – are largely absent in the energy justice literature, but they provide guidance on research and policy gaps. This article provides a review and thematic coding of visions for a just energy future, which enables an understanding of how energy justice links to history, policy, and other social movements, and concretizes calls for "place-based", "frontline-centered", and "spatially situated" approaches to energy justice. We find that organizations draft visioning documents because of the inherent value of community visioning to build shared political will, to assert their priorities in a policy space that has historically disregarded equity and justice, and to move climate policy in a transformative direction. That so many visioning documents exist suggests the insufficiency of current policy approaches, which are described in visioning documents as deficient in addressing the root causes and economic structures driving climate change. Additionally, we identify 6 principles of a just energy future articulated in these documents: (1) being place-based, (2) addressing the root causes and legacies of inequality, (3) shifting the balance of power in existing forms of energy governance, (4) creating new, cooperative, and participatory systems of energy governance and ownership, (5) adopting a rights-based approach, and (6) rejecting false solutions. We discuss how these principles can advance the energy justice literature and be applied across areas of energy policy intervention and geographies.

1. Introduction

Climate, environmental, and clean energy policy and research efforts in the United States increasingly center energy justice, or "the goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, and health burdens on those historically harmed by the energy system" [1]. For example, equitable access to clean energy is prioritized in climate policy in California, Washington, and New York, among other states, as well as at the federal level [2–5], and major funders have begun to prioritize research on the distributional impacts of the energy system [6]. This increased policy and academic focus emerges in the context of decades of effort from grassroots, community groups, and non-profits to advance energy justice [7], but does not always integrate these perspectives fully. This paper builds on a growing interest in energy justice academic and policy spaces to be responsive and connected to grassroots and community demands and visions by reviewing 68 documents authored by frontline, non-profit, and community-based organizations that represent a collective vision for energy justice. This paper broadens the lens of energy justice analysis in two ways.

First, our data collection process allows us to include perspectives from grassroots organizations that engage with energy justice even when those organizations do not have an explicitly energy-focused mandate (e.g., housing or labor organizations). We focus in this paper on grassroots and community organizations because they hold historical and contextual knowledge on the policy needs of their communities. Non-profits and community organizations, rather than government agencies, administer most U.S. energy justice programs (including training, advocacy, and weatherization initiatives), as identified in a national survey of these programs [7]. Moreover, as Pellicer-Sifres [8] argues, community and grassroots organizations are key spaces for advancing energy transitions because of their focus on systemic and radical alternatives and explicit politicization of energy (as opposed to

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Abbreviations

		MS	Mississippi
		NM	New Mexico
AK	Alaska	NY	New York
AL	Alabama	OH	Ohio
CA	California	OR	Oregon
CBPR	community-based participatory research	PA	Pennsylvania
FL	Florida	PR	Puerto Rico
GA	Georgia	SD	South Dakota
KY	Kentucky	TN	Tennessee
LA	Louisiana	TX	Texas
MA	Massachusetts	USA	United States of America
MI	Michigan	WA	Washington
MN	Minnesota	WV	West Virginia

understanding energy as an apolitical, neutral issue).

Second, we include visions and plans for energy justice in our review, which is distinctive from previous efforts that focus on grassroot mandates [9], strategies [10], or relationships with the state [11]. Visions of a just energy future constitute an underexplored aspect of grassroots, community-based, and non-profit efforts that allow us to proactively uplift solutions as well as issues and link energy justice to systemic transformation. While strategic plans or campaigns are often circumscribed by the institutional, political, and financial constraints faced by an organization, visioning efforts actively articulate how those constraints can be addressed. In doing so, they imagine an alternative and transformed energy system. As was aptly stated by Robin D.G. Kelley (quoted in the Oregon Green New Deal Statewide Listening Tour visioning document): "without new visions, we don't know what to build, only what to knock down" [12].

Though we frame our paper in terms of energy justice, others organizing toward a goal of achieving equity in the energy system have not always used the specific frame and language of "energy justice". Notably, the frames of both climate justice, which attends to how climate change "impacts people differently, unevenly, and disproportionately" [13], and a just transition, which emerged from trade union efforts to ensure that sustainability and low-carbon transitions appropriately protect and consider workers [14], intersect with energy justice. Mitigating and adapting to climate change necessitates structural changes to the energy system with implications for climate justice [15] and careful consideration of how low-carbon transitions impact laborers [14]. For this reason, in collecting and analyzing visions of energy justice we adopt a data collection methodology that is not limited to grassroots organizations with energy-focused mandates, and we contextualize our work both in the energy justice literature and in broader literatures in recognition of the multiple framings that advance the goal of achieving equity in the energy system.

2. Relevant literature

Reviews of the energy justice literature often document three core tenets: distributional, recognition, and procedural justice [16]. These tenets both define energy justice and provide frames of analysis for energy justice researchers [17]. As we discuss in this section, the energy justice literature increasingly emphasizes three areas relevant to this paper: (1) connecting to policy and systemic change, rather than narrowly focusing on remediating harm [18,19], (2) pursuing context-specific (sometimes referred to as "place-based" or "spatially situated") frameworks rather than homogenous approaches [10,20–22], and (3) prioritizing and adequately recognizing grassroots and bottom-up perspectives on energy justice [9,20,23].

We argue that a review of energy justice visions builds on these ongoing efforts by (1) identifying transformative policy proposals that critically engage with property ownership, knowledge production, and rights and recognition in energy interventions, (2) informing energy justice research and policy that is responsive to how energy injustice appears locally and how broader institutions and structures shape energy injustice, and (3) drawing on work that actively reimagines the energy system to extend the existing literature on grassroots movement and energy justice.

2.1. Connecting to policy and systemic change

The identification of distributional inequities in the energy system, often through statistical methods, is a key contribution of the energy justice literature [24,25], and gives way to an analysis of energy transition policies as interventions that create or perpetuate "winners and losers" [15,26]. The call to connect energy justice literature to policy and systemic change emphasizes that these inequities, and that the benefits and burdens created by an energy transition, are enabled by underlying structures and institutions [18,19].

Policy discussions in the energy justice space can risk, as Bouzarovski articulates, "[perpetuating] new forms of enclosure and division" by not fundamentally challenging the capitalist roots of energy and climate injustice [27]. For Bouzarovski, moving toward policy interventions that challenge the roots of injustice requires "both disruptive and emancipatory" actions, encompassing shifts in property ownership, civic engagement, and knowledge production [27]. The importance of these shifts, particularly in moving beyond privatized ownership of energy infrastructure is referenced in other discussions (e.g. [19]). Lennon [28] further explores the roots of energy injustice by arguing that colonialism transformed energy into a commodity; in response, Lennon argues, energy needs to be "decolonized" and thought of relationally, not just as a source of electrons but also as a source of connection, collective ownership, and de-alienation [28].

Along with advocating for approaches to energy policy research and practice that reconsider property ownership, knowledge production, and the colonial and capitalist roots of energy injustice, researchers have advocated for a rights and recognition based approach to energy policy. In Hernández's [18] framing of energy justice, policy demands are underpinned by rights: to healthy and sustainable energy production, to quality infrastructure, and to affordable and uninterrupted energy service. Recognizing these rights, Hernández argues, would make systems of housing and energy provision accountable to individuals facing energy injustice, and would counter the presence of "sacrifice zones," where the health and livability of communities is sacrificed for the energy demands or profits of others [18]. Bednar and Reames [29] argue for the formal recognition of energy poverty as a catalyst for energy efficiency investment, research, and metric development [29].

So how do we arrive at policy interventions that are systemic and transformative in nature? Some researchers recommend actively foregrounding progressive and transformative visions and projects [27]. In Cha et al.'s study involving over 100 climate and environmental justice

advocates and union members organizing around a just transition, the researchers concluded that while many just transition policies were limited in scale and scope, their interview participants articulated explicitly transformative visions for a just transition in domains encompassing housing and healthcare [30]. In conducting this review, we seek to collect, as comprehensively as possible, transformative visions for energy justice. We argue that foregrounding these visions will enable both researchers and policy-makers to identify actions that are rooted in rights and recognition and reimagine established practices of property ownership and knowledge production to address documented distributional injustices in the energy system.

2.2. Pursuing context-specific frameworks

For some researchers, advancing an impactful energy justice scholarship means abandoning homogenous goals and agendas in favor of adaptable frameworks [10,20,22]. Literature on energy justice and just transitions have advanced both a conceptual and empirical understanding of how context, particularly geographic and socioeconomic contexts, shape the provision of energy.

Bridge et al. [31] and Bouzarovski and Simcock [25] provide a conceptual framing and vocabulary for understanding energy transitions [31] and energy poverty [25] as spatial processes. Bridge et al. [31] argue that low-carbon energy transitions are both a process that differentially affects places and a process that is constituted by place. In other words, transition policies will have disparate geographic impacts, and the form of a low-carbon economy – the scale at which it will be governed or the degree to which energy generation will be centralized, for instance – is not pre-determined [31].

Bouzarovski and Simcock [25] review examinations of end-use energy injustice to further explore the relationship between space and energy policy, arguing that disparities in energy poverty result from structural geographical inequities rather than individual choices [25]. These studies often take a place-based approach, utilizing data in a particular location (like urban residential heating consumption and efficiency data from Detroit, Michigan [32] or data on cleaner heating fuel adoption in New York City [33]) to establish how housing tenure, race, and income shape access to energy infrastructure. Scholars additionally emphasize the importance of regional context in understanding the potential justice implications of an energy transition. Specifically, scholars point to the diversity and strategies employed by local actors [34,35] and the implications of city energy transitions for land use in neighboring areas [34] as areas for scholarly and policy attention.

Recognizing these spatial inequities can mean seeking out local or area-based energy policies that alleviate poverty and recognize the roots of disparities; Lewis et al. [36], for instance, advocate for energy efficiency investments for communities of color, and specifically predominantly African American communities, in recognition of the structural factors that contribute to Black residents disproportionately inhabiting substandard housing [36]. But recognizing spatial inequities also means pursuing policy that is not so narrowly focused on one locality that it disregards broader, structural interventions, like institutional energy restructuring, that also shape geographic disparities in energy provision [25]. Exploring the broader implication of local action is evident, too, in discussions of just transitions: geographers note that transition policies in the US have, in the past, bred nativism, casting other countries or communities as the cause of problems [30].

We know, then, that inadequate access to energy services and the burdens of the energy system are spatially constituted. For energy justice researchers and practitioners, investigating how visions for a just energy future differ across and are related to geography can help us understand how research and policy interventions can be responsive to local realities. Furthermore, addressing spatial inequalities in the energy system requires broader interventions in energy structures like utility ownership. Reviewing visions for a just energy future can inform these interventions, as well. Community organizations have both contextual

knowledge about energy justice and are informed about the broader structures and institutions that hinder local efforts.

2.3. Prioritizing and recognizing grassroots and bottom-up perspectives on energy justice

In some conceptions of energy justice, centering the "traditionally excluded voices" of frontline communities is key to advancing a coherent, impactful energy justice literature [19]. In practice, this might include restructuring research funding provision, publication practices, and research methodologies to prioritize and recognize bottom-up perspectives on energy justice [20,23]. Comprehensive and comparative reviews as well as individual case studies advance our understanding of grassroots energy justice movements and point to the value of reviewing energy justice visions.

Academic engagement with grassroots movements comes in the form of comprehensive or comparative reviews of the landscape of energy justice and just transition advocacy [9,10,37]. Baker and Kinde [9] find that advocates focus their concerns around the equitable distribution of benefits and harms, economic benefits, decreasing pollution, and centering frontline voices and control. Finley-Brook and Holloman [10], focusing on interactions between grassroots energy justice groups and the state, find that grassroots movements and governmental organizations have "paradigmatic clashes" with respect to governance structure (decentralized vs. hierarchical), their geographic scale of action (addressing local needs vs. global emissions reductions), the target of change (systemic change vs. a single-industry approach), and their chosen means for effecting change (bottom-up vs. top-down market based approaches). Cha and Pastor [37], focusing on just transition and power-building in four US states, find that theoretical frameworks on just transitions can diverge from the multitude of frameworks and local understandings that advocates adopt.

Case study-based methodologies also further our understanding of grassroots movements for energy justice. Fuller and McCauley [38] find that discussions of energy justice among environmental advocacy groups appear both implicitly and explicitly, but suggest that future research should explore interconnections among different forms of activism and advocacy for energy justice. Lennon [39] finds that grassroots climate justice movements foreground racial oppression more directly but can still engage in rhetoric that overlooks the capacity of renewable energy infrastructure to uphold white supremacy. Focusing on grassroots mobilization against privatized energy in Germany, Routledge et al. [11] show that grassroots movements at once push against the state and push for "more participatory, deliberative, non-hierarchical sets of relations between states, citizens and communities" [11].

Existing analyses of grassroots energy justice movements, then, emphasize the role of racial justice and economic opportunity, centering frontline voices and place-based solutions, and transforming the relationships between states and communities. While many researchers have pointed to the value of visions, and have included visions as part of their analysis – for instance, through Cha and Pastor's discussion of the multitude of framings of just transition among advocates [37] – existing research has focused mainly on campaigns and strategies. As we discuss in the introduction, visions are an underexplored set of documents that are proactive and explicitly tackle structural constraints to energy justice. We extend this literature by focusing specifically on visions for the future, and connecting these visions to policy, local contexts, and systemic change.

3. Methods

We used a circular approach to identify documents to include in our review, which we broadly refer to as "visioning documents". This approach is described below and summarized visually in Fig. 1. We began by reviewing the websites of non-governmental organizations
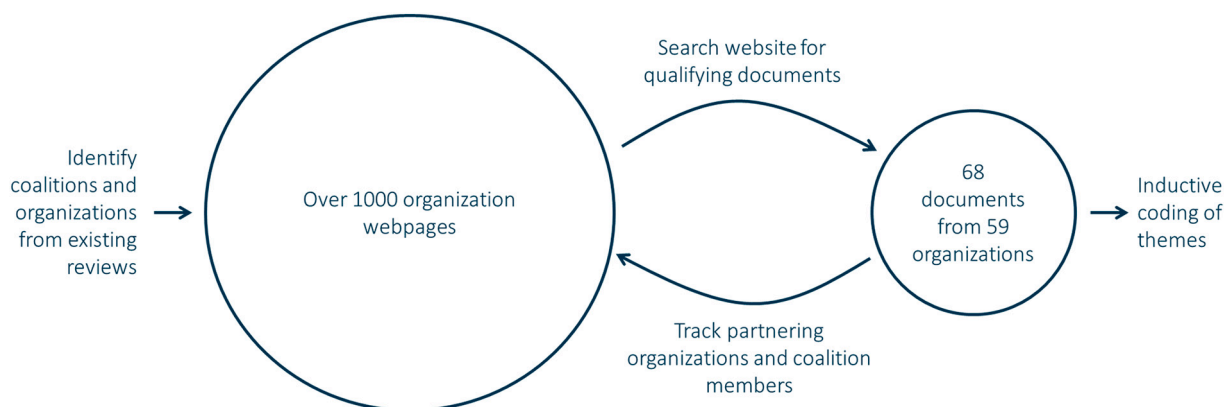
Fig. 1. Circular process for identifying organizations and visioning documents.

whose work encompasses energy justice, drawing from existing reviews [7,40]. For each organization, we reviewed their resources, publications, and blog posts to determine if any of their documents qualified as "energy justice visioning documents", defined below. Additionally, for each organization, we noted any partner organizations, co-authoring organizations, or coalition members, and reviewed their websites for visioning documents. Through this circular approach, we reviewed the websites of over 1000 organizations, and identified 68 visioning documents published by 59 organizations. At the conclusion of this process, we conducted an additional search for environmental, energy, and climate organizations in US states and US-occupied territories not represented in the list of visioning documents (see Fig. 3). While we cannot guarantee that this method captured all published grassroots and community visions for energy justice in the US, it has captured a significant set of documents representing geographic and organizational diversity. The full list of documents is in Appendix I.

To qualify as an energy justice visioning document, a document had to:

(1) organize around issues of energy justice, or "the goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, and health burdens on those historically harmed by the energy system" [1];
(2) represent a collective vision – either through a coalition or organization roundtable or through the engagement of community members[1];
(3) address the concerns of communities in the United States (international visions were considered eligible for this review if they included US-based coalition members or issues). We limit our analysis to US-based visions because this work emerges in response to US state and federal policy [2–5];
(4) set forth a vision or plan for the future, rather than exclusively feature an analysis or diagnosis of an issue.

We understood "energy system" broadly to encompass extraction, generation, transmission, and end use, including energy use for transportation; we also included visioning documents that organized around energy justice among other issues (e.g., housing justice or climate justice). By constraining ourselves not by the mandate of the organization but by the content of the document, we identified documents that organized around energy justice but were published by organizations not typically associated with energy justice. We reviewed websites published in both English and Spanish. No time limit was set with respect to how many years ago a document was published. We

concluded our search for documents in August 2021.

We took a qualitative approach to synthesizing the visions of energy justice, using inductive coding, or a recursive process of assigning codes to the content of visioning documents without using a pre-constructed set of codes [41]. We used a constant comparative method [42], where codes were treated as provisional and open to modification throughout the coding process. In other words, for each consecutive document that we read and coded, we expanded, revised, or merged codes for prior documents as new, recurring, and diverging themes emerged. We took a recursive, inductive analysis approach for 2 reasons. First, in asking what it would mean for policy and research efforts to be responsive and connected to grassroots and community demands and visions, we did not seek to test a specific hypothesis or prior assumptions. An analysis approach that is not limited by pre-developed codes, then, appropriately allows themes to emerge directly from the data [41]. Second, we are interested in the visioning documents not just as standalone texts, but in relation to one another. For instance, we were interested in investigating what demands recur across documents and how these demands differ based on their geographic or political context, or based on the portion of the energy system to which they pertain. An inductive, recursive, qualitative approach allowed us to create codes and categories that cohesively analyze over 60 documents, while remaining flexible to continuities or divergences between documents.

In the Results section, we characterize the geographies in which energy justice visions have been published, the issues around which organizations envision justice in the energy system, and the motivations by which different organizations draft energy justice visions. We then discuss six prominent themes identified in these visions for energy justice and relate them to energy policy.

4. Results

In this section, we first characterize the organizations that have contributed visions of energy justice (Section 4.1) and explore why these documents have been developed (Section 4.2). We then summarize six principles of a just energy future that emerged across documents and explore how they might be applicable to different areas of energy policy intervention in Section 4.3.

4.1. Who has documented their visions for energy justice, and how?

The full set of visioning documents are listed in Appendix I, tabulated by the primary authoring organization (many documents were authored by multiple organizations in coalition), the scope and type of geography included in the vision, the year published, the issue around which the visioning document was organized, and the process used to produce the visioning document.

We identified three main processes by which the 68 visioning

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[1] In this respect, visioning documents are distinct from strategic plans, which are drafted by members of one organization.

documents were developed – roundtables, interviews or surveys, and community co-production. Organization roundtables, where representatives from a coalition of organizations collectively drafted a vision, constituted half (34) of all visioning documents. Just over a quarter (18) of visioning documents summarized the results of interviews or surveys distributed to community members (where "community" is understood contextually and can mean residents of a given region or individuals with a shared identity within or across geographies). The remaining (16) visioning documents were co-produced by community members, using collaborative methods like participatory mapping to facilitate the visioning process.

As shown in Fig. 2, most visioning documents were published in 2015 and later, though some documents were drafted as early as 2006. Many of the visioning documents published in 2015 were drafted in response to the Clean Power Plan, a Barack Obama-era initiative to reduce carbon dioxide emissions from fossil fuel power plants [43]. Fig. 2 also shows the proportion of documents by issue over time, while Table 1 explains the primary focuses of each organizing issue. While there is certainly overlap between many of these organizing issues, we classified visioning documents to the extent possible by the language used in the documents themselves. Notably, climate justice has become an increasingly prevalent framing in which issues of energy justice are discussed.

The visioning documents represented a range of geographies. As shown in Table 2, just over 40% of visioning documents represented a vision for a predominantly urban area, which ranged in scale from a single neighborhood to an entire city. The urban focus of many visioning documents is consistent with existing characterizations of organizations that work on energy justice [40]. While few documents focused on rural communities alone, about one quarter of visioning documents considered the shared visions of both urban and rural communities. As shown

in Fig. 3, when excluding the 16 visioning documents that had a national or multi-national scope, the visioning documents largely pertained to communities in coastal states, particularly New York, California, Washington, and the Gulf South, with additional visioning documents in Appalachian regions. A small number of visioning documents represented communities in Alaska, Puerto Rico, and midwestern states.

Geography both motivated and shaped energy justice visions. Some communities, particularly coastal ones, were partially motivated to draft visioning documents by disasters, like Hurricane Sandy [44,45], or wildfires [46], that laid bare climate and energy injustice. Some of these documents, in turn, adopted a framing of climate resilience or climate justice that integrated energy interventions with disaster response and planning. While most documents that were not national in scope framed their visions around the aspirations of a particular geographic community – in a neighborhood, city, county, or state – the visions themselves often extended past that community, discussing interventions beyond local or national borders.

4.2. Why publish a vision for energy justice?

In exploring a potential just energy future, it is instructive to reflect on why an organization might publish their own vision for the future. The motivations of grassroots organizations in publishing visions for energy justice illuminate the state of energy and climate policy in the US and provide a valuable reflection on the history and ongoing reality of the energy transition.

Some organizations articulated an inherent value to community visioning as an exercise that not only builds solidarity and shared political will for a just transition, but also clarifies priorities [12,47]. For the Duwamish River Cleanup Coalition, the process of community visioning was a vehicle for self-determination: "instead of outside
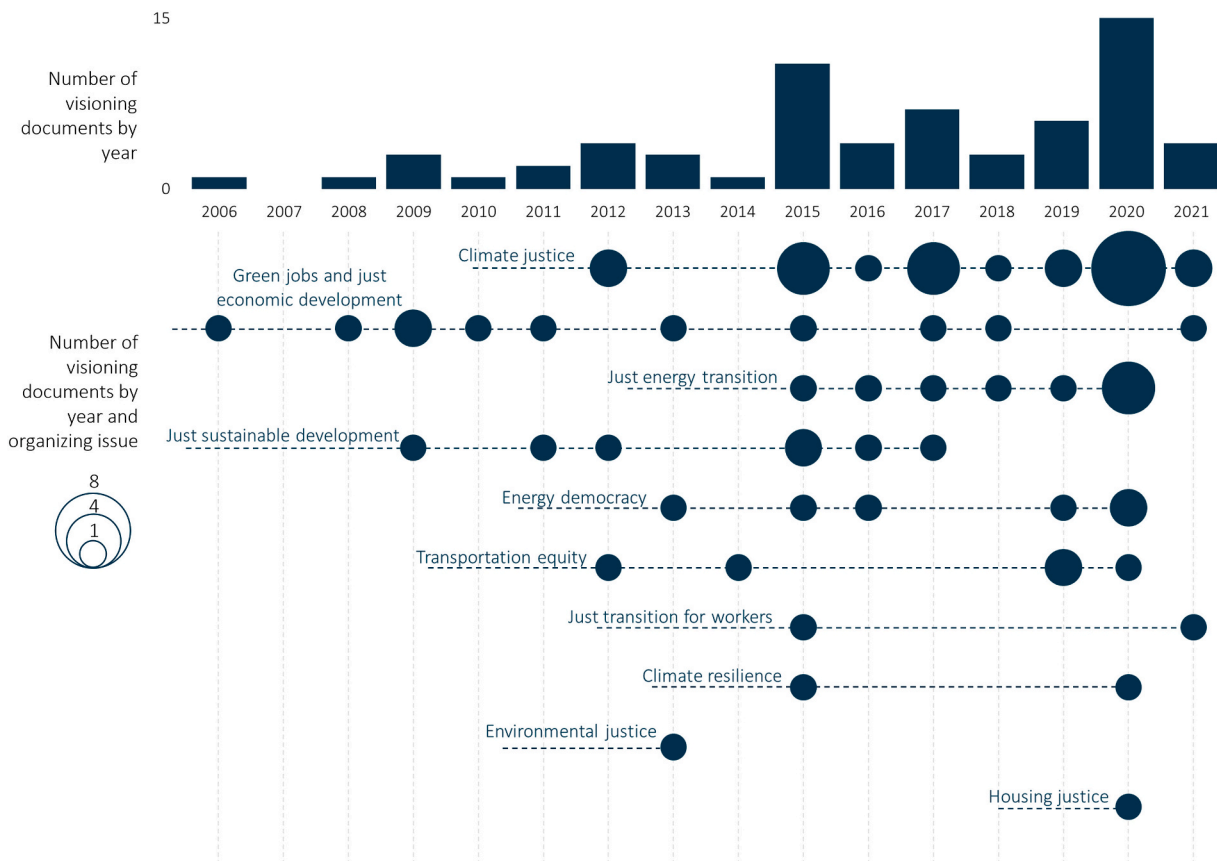

Fig. 2. Visioning documents by year of publication and organizing issue; organizing issues are explained in Table 1. Data collection concluded in August 2021, so the 2021 document count excludes documents published between September and December 2021.

Table 1

Issues around which visioning documents organized as well as the primary focuses and total number of documents associated with each organizing issue.

Organizing issue	Primary focus	Total number of documents
Climate justice	Envisioning climate change mitigation and adaptation, including but not limited to energy issues; envisioning the futures of communities impacted by climate change	24
Green jobs and just economic development	Envisioning access to jobs and economic benefits of clean energy and environmental sectors	11
Just energy transition	Envisioning a transition away from fossil fuels	9
Just sustainable development	Envisioning community investment, infrastructure expansion, and growth	7
Energy democracy	Envisioning a shift in power within the energy sector toward workers and communities	6
Transportation equity	Envisioning access to low-carbon mobility as well as access to jobs in the transportation sector	5
Just transition for workers	Visions by and for workers and communities whose livelihoods are tied to the fossil fuel industry	2
Climate resilience	Envisioning preparation for and responses to climate hazards and disasters	2
Environmental justice	Envisioning protection from environmental harms and community involvement in environmental decision-making	1
Housing justice	Envisioning access to affordable, safe, and healthy homes	1

Table 2

Count of visioning documents by geography type.

Geography type	Number of visioning documents
Predominantly urban	29
Mixed urban and rural	16
National	13
Predominantly rural	6
Multi-national	2
National Indigenous communities	1
Reservation	1

influences (developers, investors, government agencies) deciding what comes in and what goes where, an organized community with a clear vision can invite, influence, and create the change it wants" [48]. For the Oregon Just Transition Alliance, drafting a vision created space to think past "business as usual" toward a "shared preferable future". Prompts and discussions were designed accordingly, asking participants what it would look like for their community to be thriving, safe, and healthy [12].

For many organizations, publishing a vision for energy justice allowed them to assert their priorities in a policy space that often disregards equity and justice. Visioning documents across time, geography, and organizing issue discussed the inaccessibility of benefits and exclusion from clean energy and climate mitigation policy (and, in some cases, visioning documents referred to outright harm caused by these policies to their communities). Some organizations emphasized that their communities had been systematically excluded from energy and climate policy discussions [40,49,50]. For the Climate Justice Alliance, this exclusion was linked to the mainstream environmental movement "pushing a narrative that we must decarbonize as fast as possible, at all costs" and "moving fast without intention" – thus sacrificing frontline communities in the name of urgency [40]. Other organizations characterized federal and state policies – from clean energy solutions in the

residential sector [51], to the Clean Power Plan [52,53], to rural biomass and alternative energy projects [54] – as being silent on race, class, and structural inequity at best, and perpetuating cycles of environmental, economic, and social harm at worst. These visioning documents asserted that an energy transition is already happening on, and sometimes contributing to, an unequal landscape – in other words, "transition is inevitable, justice is not" [55].

This unequal landscape was characterized in visioning documents as one in which the impacts of climate change were disproportionately experienced by poor and working class people [44,45,56–61]. These extractive histories are tied to present-day motivations to envision just energy futures. The coalition involved in ReImagine Appalachia, for instance, opened their vision by asserting that "Appalachia deserves its fair share" after over two centuries of "corporations [extracting] enormous wealth from our region for the profit of owners and shareholders while the region is left with high rates of poverty, unemployment, and low wages" [62].

Beyond discussing the various reasons that frontline communities need a seat at the energy and climate policy-making table, visioning documents also asserted that climate and energy policy needs these visions. Many documents diagnosed clean energy and climate policy as insufficiently addressing the root causes, economic structures, and global systems of production and consumption that are driving climate change [40,49,63]. Others emphasized that their communities, though historically excluded from energy and climate policy decision-making, possessed lived experience with climate change and local knowledge that is necessary to facilitate sustainability and resilience [58,64,65]. Without this broad engagement, transition policies become, as Cha et al. [66] note, "fragmented and inadequate, leading to the destruction of human capital as well as deep resentment and opposition to social and environmental policies". The visioning documents argue that without the meaningful involvement and visions of frontline communities, energy and climate policy will perpetuate harms and undermine our collective ability to address climate change.

4.3. Principles of a just energy future and applications to areas of intervention

In this section, we synthesize the just energy future articulated in visioning documents by highlighting 6 principles of energy justice that emerged: (1) being place-based, (2) addressing the root causes and legacies of inequality, (3) shifting the balance of power in existing forms of energy governance, (4) creating new, cooperative, and participatory systems of energy governance and ownership, (5) adopting a rights-based approach, and (6) rejecting false solutions. We discuss how each of these 6 principles are framed in the visioning documents and note similarities and differences across documents. We also discuss how the principles can be applied to energy policy domains that were prevalent in the visioning documents, including, energy use in buildings, transportation, energy extraction, generation, and transmission, and jobs and labor. We summarize the identified interventions associated with each principle in Appendix II.

4.3.1. Being place-based

Broadly, visioning documents characterized "place-based" solutions as solutions that recognize the unique realities and contexts of different areas, address the needs and aspirations of community members, and avoid "one size fits all" climate solutions. Place-based approaches provide mechanisms for self-determination [47,67], strengthen community institutions, reclaim traditions of land stewardship and interpersonal connection that have been undermined by colonization and oppression [68], and redistribute resources and funding to local communities [46]. Beyond geography, communities can be connected by identity, and groups like women, workers in the informal sector, incarcerated and formerly incarcerated individuals, and migrants all have specific needs and expectations [63]. Just energy policy that is place-based is
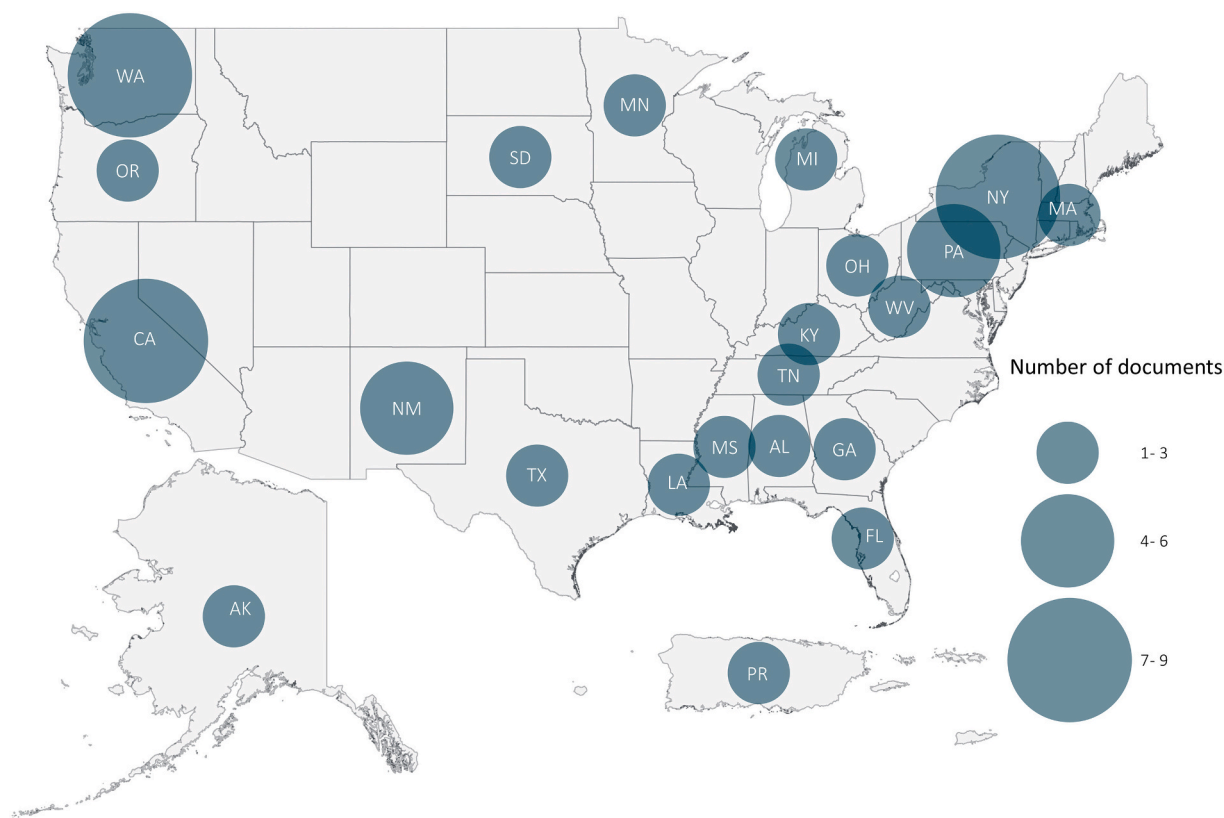
Fig. 3. Map of the continental United States, Alaska, and Puerto Rico, showing number of visioning documents that include communities in each state (excludes documents representing national or multi-national visions). No visioning documents were found for Hawai'i or for territories other than Puerto Rico; map not to scale.

characterized as policy-making that values local knowledge and addresses underlying community-specific needs. Visioning documents that organized around labor and just transition policy perhaps pointed most consistently to the consequences of not having place-based policies, recounting, for instance, examples of displaced workers being offered training programs for jobs that do not exist in their region [66,69].

One aspect of place-based work is the valuing of community, Indigenous, and non-western knowledge, which are characterized as systemically disregarded in policy-making [57,68,70–74]. Economic analysis, in particular, was identified as an area of policy work where local knowledge and values should be better incorporated [44,55,59,68,75–77]. Economies and measures of economic success or well-being, these documents argued, are not separate from place, culture, and governance [55,68], but should be informed by the priorities and visions of community members. For example, Front and Centered – a coalition of organizations working in Washington State – argued for the restructuring of public budgets around metrics of social and ecological well-being rather than profit or revenue, as outlined in Appendix II.

The importance of engaging communities and including local knowledge in building maps and metrics to identify and characterize frontline communities (a practice that is becoming more prominent with efforts in California [78] and Washington State [79]) was also emphasized [64,77]. Documents cautioned, however, that mapping is a "starting point", and that quantitative metrics cannot replace on the ground work that includes qualitative, community-based approaches in devising policy solutions [68]. Organizations working in South Seattle echoed the importance of integrating community experiences in policy in their discussion of mainstream narratives of climate change, which "[emphasize] data over knowledge and experience…climate change stories do not reflect people of color as stakeholders or agents of change; this creates a dissonance with everyday concerns that undermine our

participation" [59].

4.3.2. Addressing the root causes and legacies of inequality

Visioning documents emphasized that addressing the causes, histories, and legacies of inequality are inextricable from climate and energy policy. Visioning documents historicized energy, identifying how violations of treaties with Indigenous nations, redlining, and imperialism, among other issues, are implicated in energy injustice. They also discussed what it meant, in practice, to address these legacies: that energy policy should simultaneously address other social crises and should prioritize the needs of those most impacted by systems of inequality.

Many visioning documents brought the historic context front and center. In some cases, the visioning documents were framed explicitly around commemoration [55,80] or made an intentional effort to construct a "people's history" of the impacts of the energy system in their community [81]. Critically, a foregrounding of history allowed visioning document authors to identify systems of inequity that are central to understanding energy injustice.

One historically-rooted injustice identified in documents was broken environmental and social trust responsibilities to Indigenous nations [64,71,82]. Broken treaty obligations were largely linked to the overarching system of an "extractive economy" [40,55,57,63,70,82,83], defined as an economic system that is organized with the objective of concentrating wealth and power, achieved through the exploitation of human labor, the extraction of resources, and militarism [55]. Legacies of redlining – the practice of systematically denying home mortgages to residents of predominantly Black urban areas [84] – and discriminatory land use and zoning, too, are identified as causes of energy injustice, particularly in placing frontline communities near industrial emissions [58,68] and in older, energy inefficient homes [85,86].

For some organizations, recognizing systems of injustice – particularly imperialism, militarism, and the extractive economy – necessarily

meant that energy justice should transcend national borders [56,64,68,70,83]. In some communities, the impacts of imperialism and militarism around the globe are felt acutely and locally. For instance, residents who relocated to the Gulf South after being forcibly displaced from Vietnam, Cambodia, or Laos are more vulnerable to the extractive and low-wage labor that characterizes an unjust energy system [80].

In pursuit of policy approaches that recognize the legacy of historically-rooted system of injustice, visioning documents suggested policy approaches (see Appendix II) that intersect with both climate change mitigation and other social issues, and prioritize the communities most impacted by systems of injustice. As the Greenlining Institute articulated, non-intersectional solutions can turn low-income communities into experiments – in other words, "policymakers should aim to improve people's ability to live, breathe, play, and afford a home—not merely to test appliances in low-income neighborhoods" [51]. When discussing transportation interventions, for example, visioning documents overwhelmingly emphasized that public transit investments that increase collective access and affordability to low-carbon mobility should supersede other transportation measures – including electrification and electric vehicle investments - that are more likely to benefit select individuals [44,45,58,77,82,87–91]. In other words, transportation policy should "[prioritize] transportation solutions for people with the least options and most barriers to mobility" [88].

4.3.3. Shifting the balance of power in existing forms of energy governance

The visioning documents converged on three failures of existing energy decision-making processes. They describe these processes as: (1) being top-down by failing to include meaningful avenues of participation for grassroots leaders or frontline communities [50,54,63,74,81]; (2) co-optive, particularly with respect to obtaining consent for energy projects from Indigenous nations [64]; and (3) physically inaccessible, particularly for rural residents, working people, and non-English speakers [50,54]. Visions of shifting power balances relate to and expand upon procedural justice tenets of representation, information, and consent.

Visions of energy justice emphasized the importance of "reclaiming governments for the people" [57] and centering those most affected by climate change at all levels of climate change-mitigation decision-making [85,92]. They also related a shift in the balance of power to historic distrust of state and corporate energy governance [51,73], which is exacerbated by the difficulty of getting accurate and timely information about government processes [50,76]. Addressing distrust is multifold – it involves a meaningful commitment to procedural justice with respect to representation, information, and consent, as discussed in this section, as well as the inclusion of frontline communities in the benefits of clean energy policy [51], as discussed in Section 4.3.2.

A vision of basic representation in decision-making was reflected in practical suggestions that visioning documents put forward, many of which are summarized in Appendix II. In many ways, however, visioning documents went beyond representation to propose a transformation of energy decision-making. These visions for decision-making were most concretely defined in discussions of unionization and collective bargaining as well as the public budgeting process. As the Tennessee Valley Energy Democracy Project worded it, a common sentiment by workshop participants was that they deserved "not just input, but a real role in decision making" [81].

The role of information in decision-making was reflected in calls to affirm and support the ability of communities to speak for themselves [93]. But visioning documents additionally emphasized that information was not an end in itself – it should serve the purpose of facilitating community-informed decisions [49] and should be provided in collaborative and participatory learning processes [56].

Visioning documents also moved beyond discussions of consent, which was characterized as a concept that was co-opted by companies and governments to obtain "just enough" Indigenous participation to claim free, prior, and informed consent [64]. Instead, documents

envisioned an alternative relationship between government, companies, and communities in which communities are engaged as partners with a right to self-determination [51,57,82]. Crucially, this right to self-determination means that a nation-to-nation relationship is applied to projects on Indigenous lands, where "no action that impacts [Indigenous] lands & peoples should be designed, planned, or initiated without first engaging our Nations as potential equal collaborative co-design partners, whose ancestral rights and sovereignty are central throughout the decision making and development process" [64]. The 100% Network emphasized that both fossil fuel and renewable energy companies have expropriated Indigenous land and water without consultation, a process that was made possible because treaty violations left many tribes with a diminished land base, making it "impossible for us to exercise our own governance systems, or even to develop and change in ways that were more sustainable" [77].

Shifting the balance of power also means including support for resistance (for example, to infrastructure or pipeline expansion). Many documents affirmed the right of workers and communities to challenge corporations and governments that commit injustice through protests and direct action, and called for the decriminalization of civil disobedience [44,53,64,68,76].

4.3.4. Creating new, cooperative, and participatory systems of energy governance and ownership

Section 4.3.3 discusses how visioning documents imagined and approached existing forms of energy governance – which include budgeting processes, boards and advisory committees, public participation opportunities, and other mechanisms that are embedded in existing energy policy approaches. But for many organizations, existing and prevalent forms of governance are insufficient, motivating visions for cooperative and participatory systems of energy governance. Organizations argued that the power structures that guide energy policy – valuing white communities over communities of color and owners over renters – demand new systems that redistribute resources and power [40,44,70]. Underlying these visions is the affirmation that a just transition means democratizing energy away from government or corporate control to community control [49,53,57,65,70,71,81–83,94], and necessitates a long-term approach that emphasizes structural transformation [47,63,77]. These cooperative and participatory systems encompass tenant unions, cooperative land ownership, cooperative ownership of energy infrastructure, and worker-owned cooperatives. These structures are, of course, not new in a broader context (tenant unions, for example, have existed for decades [95]), but they are infrequently discussed in the context of energy systems or policy, so we introduce them here as "new" systems of energy governance and ownership.

These visions of new, cooperative, participatory systems are tied intimately to economic well-being. Summarizing the results of their community-based participatory research (CBPR) in South Seattle, Puget Sage Sound and Got Green noted that "self-reliance has long been a strategy for communities of color to survive in racialized economies that exclude and marginalize; it was not surprising that our CBPR participants painted a picture for transitioning away from fossil fuels that increased self-reliance and let us build local economies that maximize our prosperity" [59]. This sentiment echoed other visions that noted that new economic and governance structures can uplift communities that have been historically excluded from wealth-building [67,75].

Two key systems of governance and ownership that are part of envisioned just energy futures (among others described in Appendix II), tenant unions and cooperative land ownership, were linked to affordable, sustainable, energy efficient housing as well as low-carbon power generation. Visioning documents linked the need for tenant organizing to the lack of power that renters have over energy decision-making in their own homes and the lack of incentives for landlords to act on energy issues in rental properties [51]. Some organizations, like Soulardarity, have begun exploring cooperative land ownership for energy generation

[76]. These cooperative structures were envisioned in pursuit of clean energy approaches that actively create solutions to inequality and keep wealth within a neighborhood, instead of directing profits to an outside corporation [44,47,52,53,56,57,71].

4.3.5. Adopting a rights-based approach

Prevalent in many visioning documents were the rights that should guide energy and climate policy. Three categories of rights were discussed across visioning documents: the right to energy, labor rights, and the right to remain and build community in safe and sustainable neighborhoods (framed by at least one organization as the right to the city [63]).

For many organizations, the right to (affordable, clean) energy should guide energy policy [49,51,53,56,57,70,71,77,81,83,96]; some of the measures that advance this right, in practice, are detailed in Appendix II. However, the rights that undergird energy justice go beyond a right to energy – these rights are perhaps most clearly highlighted in discussions of jobs, labor, and just transitions. A common refrain in visioning documents was that "not all green jobs are good jobs"; Appendix II summarizes some of the measures that advance "good jobs". For some organizations, guaranteeing a right to a family-sustaining wage and benefits along with advancing a social safety net is one way to honor non-workers – like children or elders – as worthy of support [68,71,93].

Some organizations discussed the "right to the city", or "the right of all inhabitants, present and future, permanent and temporary, to inhabit, use, occupy, produce, govern and enjoy just, inclusive, safe and sustainable cities, villages and human settlements, defined as commons essential to a full and decent life" [63]. For the Portland African-American Leadership forum, their environmental and energy justice vision encompassed "the right of Black people to be in and shape community, whatever neighborhoods we live in" [97]. The right to the city is closely related to the adverse impacts of clean energy and transportation investments, particularly gentrification (also see Section 4.3.6), with organizations arguing that energy justice should necessarily be guided by the right of people to remain in safe and sustainable neighborhoods [51,68,98].

4.3.6. Rejecting false solutions

Many organizations used the language of "false solutions", or climate and energy solutions that are "carbon-centric, without attention or inclusion of political, economic, and social justice" [57] and sacrificed one community for another or for the privatization of public resources [53,64,71,83]. Along with energy generation practices that increase vulnerability to local hazards, outlined in Appendix II, the two most frequently discussed false solutions were carbon markets and environmental gentrification.

Documents argued that carbon markets and taxes do not confront the power of corporations over energy resources and infrastructures [52,63,67,82,83], are vulnerable to fraud, corruption, and the concentration of wealth among investors [52], give industry a "false veneer" of responsibility while monetizing Indigenous peoples' lands [64,83], and make international communities – including the Latin American home countries of some community members – more vulnerable to increased emissions and harmful hydropower development, ultimately failing to mitigate the vulnerability of poorer countries to the consequences of emissions from wealthier ones [63,67,99]. We found two documents that supported carbon pricing as a limited, short-term scheme to raise revenue for climate investments and just transitions [47,68], but otherwise the documents expressed a clear opposition to carbon pricing whenever it was mentioned – reinforcing the Climate Justice Alliance's observation that none of the energy justice networks they interviewed were supportive of carbon trading [40].

Another prominent false solution was "environmental gentrification" [44,49,51,57,59,68,71,74,76,82]. Environmental gentrification was defined as a phenomenon by which development "subordinates equity to profit-minded development" while appropriating the "material and discursive successes of the environmental justice movement" [100] and was particularly relevant to discussions of building and transportation energy interventions. Beyond displacement from homes, organizations linked environmental gentrification to the erosion of cultural anchors like community centers [59], while others emphasized that displacement from your home also means displacement and inaccessibility from work and jobs, which exacerbates wealth disparities [49]. Notably, environmental gentrification is not just an issue for urban communities – communities in Washington State, specifically, noted that Washington's rural and suburban areas are facing increased development pressure and housing shortages due to displacement from urban areas [68,88]. Some of the specific policy responses recommended by visioning documents to address environmental gentrification are outlined in Appendix II.

5. Discussion and conclusion

While energy justice has become a more prominent framework in policy and research, the perspectives of grassroots organizations, community-based organizations, and non-profits, who have historically administered the majority of energy justice programming [7], have not been fully integrated. This paper identifies documents that establish visions for energy justice from community-based organizations and ties those visions to policy measures. We found that these visions point to the insufficiency of current policy approaches, arguing that energy policy has perpetuated cycles of social harm and lacks the transformative approach necessary to address climate change and its uneven impacts.

Through our review of 68 visioning documents from 59 organizations, we identified 6 main principles of a just energy future – (1) being place-based, (2) addressing the root causes and legacies of inequality, (3) shifting the balance of power in existing forms of energy governance, (4) creating new, cooperative, and participatory systems of energy governance and ownership, (5) adopting a rights-based approach, and (6) rejecting false solutions – and mapped them to policy interventions as articulated by the visioning organizations themselves.

These 6 principles of a just energy future should not be viewed as independent, but as policy principles that require simultaneous execution – examples of the shared strategies across principles are shown in Fig. 4. For instance, a place-based approach can address the root causes and legacies of inequality when underlying, community-specific needs are also addressed using energy policy. These needs can include rural broadband access, essential infrastructure like water systems [65,66,73], and home repairs and heating oil usage that necessarily need to be addressed before energy efficiency or electrification can be implemented [49,51]. A place-based approach also means a meaningful engagement of local knowledge, which can shift the balance of power in energy governance – for instance, by engaging communities in all phases of policy development [77], compensating local experts rather than out-of-state consultants [101], and using participatory methods to design budgets and metrics for policy assessment [44,55,59,68,76,77]. Energy workplaces where workers' rights to unionize and collectively bargain are honored and protected are places where a rights-based approach and a shift in energy governance decision-making can simultaneously be achieved [57,58,62,71,102]. A rights-based approach can also pre-empt "false solutions" that disregard political, economic, or social justice in carbon emission reduction policies. Advancing a human rights framework to energy access, for instance, can counter utility shutoffs or increasing bills; advancing a right to the city can counter environmental gentrification. A rejection of false solutions can also look like the advancement of new, cooperative, and participatory systems of energy governance and ownership: these systems can upend the power structures (like the limited power afforded to renters) that enable the subordination of equity that defines false solutions.

This paper builds on an emerging literature in energy justice scholarship that engages with grassroots, community-based, and non-profit efforts. This paper also builds on conceptual approaches and critiques
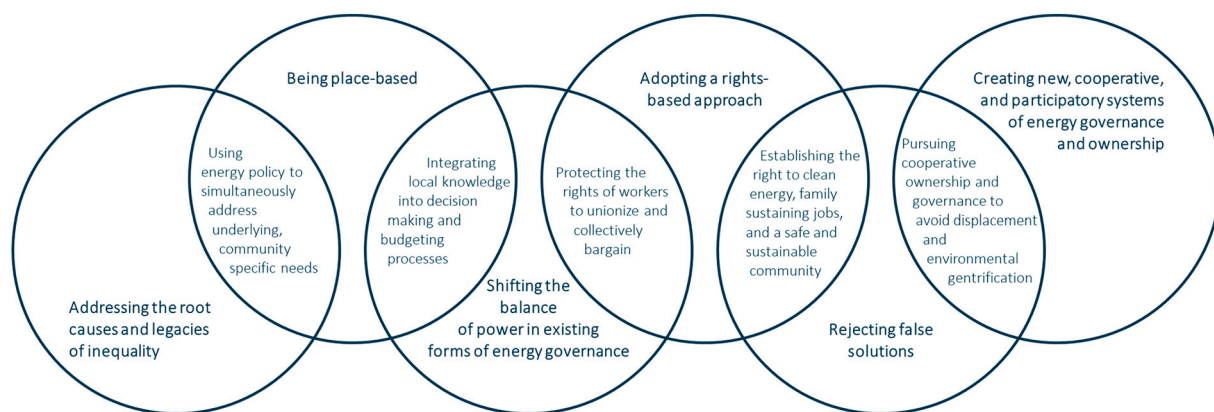
Fig. 4. Links between the 6 identified principles of a just energy future.

of energy justice scholarship that call for connecting more directly to policy, pursuing context-specific frameworks, striving for systemic change, and recognizing bottom-up perspectives. Our review of visions for a just energy future show that visioning documents contain concrete policy recommendations, connect context, history, and place to energy and climate policy, and strive to systematically shift the balance of power in the energy system. While we synthesized themes across 68 visioning documents, each document is important as a stand-alone resource that links local and historic contexts to policy and solutions.

In reviewing and synthesizing visions for a just energy future, this paper makes two key contributions. First, it includes perspectives from organizations that engage with energy justice without a specific energy-focused mandate, which allows us to connect energy justice to climate, housing, and labor justice. Second, by focusing on visions and plans, we emphasize a distinct and underexplored aspect of grassroots, community-based, and non-profit efforts, that allow us to link issues, solutions, and systemic change in energy systems.

For both researchers and policy-makers, visions for energy justice are an important starting point to identify issues, priorities, and strategies around which to concentrate efforts. The 6 identified principles of a just energy future also point to movements and literatures with which energy justice research and policy can engage further – including, but not limited to, housing justice and tenants' rights movements, studies of policing, surveillance, and civil disobedience, cooperative land ownership, and human rights approaches in policy-making.

While researchers have identified the need to link energy justice and just transition frameworks to cooperative ownership [19,27], few policy proposals have acted on the concrete recommendations put forward in visioning document to meaningfully advance community ownership of energy infrastructure. Similarly, energy justice research can engage further through partnerships and case studies with land trusts, community solar advocates, and tenant unions. Energy efficiency and sustainable housing research, for instance, often adopts the framing of a "landlord/tenant" or "principal/agent" problem and related proposals of landlord-oriented financing (e.g. [103,104]); fewer research efforts center tenant power-building as a pathway to efficient and healthy housing. Reviewing visions of energy justice, then, orient us to future research and policy directions that align with systemic change.

Those future research and policy directions can be shaped by questions and suggestions in these visioning documents on how knowledge is generated in energy research and policy-making. Visioning documents put forth a vision for identifying the communities impacted by energy injustice that encompasses and moves beyond metric development,

arguing for qualitative, community-based research efforts. The visions for knowledge generation put forward by these documents relate to ongoing discussions on spatial inequality in energy systems [25] and to broader critiques of metrics and frameworks of vulnerability that fail to center community knowledge [105]. Similarly, many visioning documents challenged accepted practices of economic analysis or budgeting, arguing for genuinely participatory approaches that are accountable to community needs. These visions make clear that methods of identifying and allocating resources to address spatial injustices and local impacts of the energy system can and should be informed by community knowledge.

Julie Sze and Jonathan London [106] argue that environmental justice is a "project of bridging worlds" achieved through a socially engaged stance and public, value-driven scholarship that incorporates academics, the state, and social movements. This is relevant to energy justice as well, wherein achieving socially engaged, value-drive scholarship requires a bridging of research, policy, and social movements, a project that begins with rooting energy justice in cross-sectoral, community-based visions.

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

Data will be made available on request.

Acknowledgements

Appendix I

Table 4
Visioning documents.

Primary authoring organization	Document name	Geographic scope	Geography type	Year published	Organizing issue	Creation process	Citation
New York City Apollo Alliance	Repowering Gotham: State Action to Build New York City's New Energy Economy	New York City, NY	Predominantly urban	2006	Green jobs and just economic development	Organization roundtable	[107]
SCOPE LA	A Greener Future for Los Angeles: Principles to Ensure an Equitable Green Economy	Los Angeles, CA	Predominantly urban	2008	Green jobs and just economic development	Organization roundtable	[108]
Center for American Progress	Green Collar Jobs Roadmap	New York City, NY	Predominantly urban	2009	Green jobs and just economic development	Organization roundtable	[93]
SCOPE LA	Growing a Grassroots, Green Jobs Movement in South Los Angeles	South Los Angeles, CA	Predominantly urban	2009	Green jobs and just economic development	Community member interviews or surveys	[109]
Duwamish River Cleanup Coalition	Duwamish Valley Vision Map & Report	Lower Duwamish River Valley, WA	Mixed urban and rural	2009	Just sustainable development	Co-produced by community members	[48]
Alternatives for Community and Environment	Environmental Justice and the Green Economy: A Vision Statement and Case Studies for Just and Sustainable Solutions	USA	National	2010	Green jobs and just economic development	Organization roundtable	[75]
Got Green	Women in the Green Economy: Voices from Southeast Seattle	Southeast Seattle, WA	Predominantly urban	2011	Green jobs and just economic development	Community member interviews or surveys	[110]
The Center on Race, Poverty, and the Environment	The Green Paper: A Community Vision for Environmentally and Economically Sustainable Development	San Joaquin Valley, CA	Predominantly rural	2011	Just sustainable development	Community member interviews or surveys	[54]
Thunder Valley CDC	Oyate Omniciye Regional Plan	Pine Ridge Indian Reservation, SD	Reservation	2012	Just sustainable development	Co-produced by community members	[73]
Center for Earth, Energy, and Democracy	Twin Cities Peoples Agreement on Climate Change	Minneapolis-St Paul, MN	Predominantly urban	2012	Climate justice	Organization roundtable	[85]
¡PODER!	Latino Youth Cool Down the Planet: Organizing for Climate Justice in San Francisco	San Francisco, CA	Predominantly urban	2012	Climate justice	Co-produced by community members	[99]
Local Spokes	Neighborhood Action Plan	Lower East Side and Chinatown, New York City, NY	Predominantly urban	2012	Transportation equity	Co-produced by community members	[90]
Trade Unions for Energy Democracy	Resist, Reclaim, Restructure: Unions and the Struggle for Energy Democracy	Global	Multi-national	2013	Energy democracy	Organization roundtable	[83]
Got Green	Environmental Justice, Jobs and Education: Seattle's Young Adults Speak Out	Seattle, WA	Predominantly urban	2013	Green jobs and just economic development	Community member interviews or surveys	[111]
Detroiters Working for Environmental Justice	Detroit Environmental Agenda	Detroit, MI	Predominantly urban	2013	Environmental justice	Community member interviews or surveys	[112]
League of American Bicyclists	The New Movement: Bike Equity Today	USA	National	2014	Transportation equity	Organization roundtable	[74]
WE ACT	Northern Manhattan Climate Action Plan	Northern Manhattan, New York City, NY	Predominantly urban	2015	Climate justice	Co-produced by community members	[44]
Rural Climate Network	Rural Climate Policy Priorities: Solutions from the Ground	USA	Predominantly rural	2015	Climate justice	Organization roundtable	[65]
Climate Works for All	Climate Works for All: A Platform for Reducing Emissions, Protecting Our Communities, and Creating Good Jobs for New Yorkers	New York City, NY	Predominantly urban	2015	Climate justice	Organization roundtable	[45]
Climate Justice Alliance	The Our Power Plan: Charting a Path to Climate Justice	USA	National	2015	Just energy transition	Organization roundtable	[52]
Center for Earth, Energy, and Democracy	Climate Justice & Energy Democracy: A Platform Vision	USA	National	2015	Energy democracy	Organization roundtable	[57]
Center for Coalfield Justice	Coalfield Listening Project Report	Southwestern PA	Predominantly rural	2015	Just transition for workers	Community member interviews or surveys	[113]
Gulf South Rising	Gulf South Rising Final Report			2015	Climate justice		[80]

(continued on next page)

Table 4 (*continued*)

Primary authoring organization	Document name	Geographic scope	Geography type	Year published	Organizing issue	Creation process	Citation
		Gulf South (TX, LA, MS, AL, FL)	Mixed urban and rural			Co-produced by community members	
Got Green	Breaking the Green Ceiling: Investing in Young Workers of Color, Paid Environmental Internships, Career Pathways	Seattle, WA	Predominantly urban	2015	Green jobs and just economic development	Community member interviews or surveys	[114]
Centro por la Justicia/ Southwest Worker Union	Climate Resiliency in San Antonio: Moving Toward Justice	San Antonio, TX	Predominantly urban	2015	Climate resilience	Organization roundtable	[60]
Pratt Center for Community Development	The Green Agenda for Jackson Heights	Jackson Heights, Queens, NY	Predominantly urban	2015	Just sustainable development	Co-produced by community members	[115]
Coalition for Community Advancement	East New York Neighborhood Re-Zoning Community Plan	East New York/ Cypress Hills, New York City, NY	Predominantly urban	2015	Just sustainable development	Co-produced by community members	[116]
Energy Democracy Project	Energy Democracy Project Collaborative Strategy Session: Summary Report	USA	National	2016	Energy democracy	Organization roundtable	[94]
Partnership for Southern Equity	Just Energy Summit: A Framing Document	GA	Mixed urban and rural	2016	Just energy transition	Organization roundtable	[86]
Puget Sound Sage	Our People, Our Planet, Our Power: Community Led Research in South Seattle	South Seattle, WA	Predominantly urban	2016	Climate justice	Community member interviews or surveys	[59]
Hester Street Collaborative	East Harlem Neighborhood Plan	East Harlem, New York City, NY	Predominantly urban	2016	Just sustainable development	Co-produced by community members	[117]
POWER Interfaith	Black Work Matters: Green Jobs Report	Philadelphia, PA	Predominantly urban	2017	Green jobs and just economic development	Organization roundtable	[56]
Empower Kentucky	Empower Kentucky Plan	KY	Mixed urban and rural	2017	Just energy transition	Community member interviews or surveys	[47]
GreenRoots Chelsea	The Vision Project	Chelsea, MA	Predominantly urban	2017	Climate justice	Co-produced by community members	[92]
Livelihoods Knowledge Exchange Network (LiKEN)	Just Environmental and Climate Pathways: Knowledge Exchange Among Community Organizers, Scholar-Activists, Citizen-Scientists and Artists	NM	Mixed urban and rural	2017	Climate justice	Organization roundtable	[72]
Climate Justice Alliance	Our Power Puerto Rico: Moving Toward a Just Recovery	Puerto Rico	Mixed urban and rural	2017	Climate justice	Organization roundtable	[102]
TRUST South LA	Sustainable & Stable Slauson Plan	South Central Los Angeles, CA	Predominantly urban	2017	Just sustainable development	Co-produced by community members	[89]
Portland African-American Leadership Forum	The People's Plan	Portland, OR	Predominantly urban	2017	Climate justice	Organization roundtable	[97]
Climate Justice Alliance	Collaborating for Bold Possibilities: The Ecosystem of Networks Advancing a Just Energy Transition	USA	National	2018	Just energy transition	Organization roundtable	[40]
Climate Justice Alliance	Just Transition Principles	USA	National	2018	Climate justice	Organization roundtable	[70]
BlueGreen Alliance	Working Class People on Jobs and the Environment	Counties in MN, MI, OH, PA	Predominantly rural	2018	Green jobs and just economic development	Community member interviews or surveys	[69]
Greenlining Institute	Equitable Building Electrification: A Framework for Powering Resilient Communities	CA	Mixed urban and rural	2019	Just energy transition	Organization roundtable	[51]
Gulf Coast Center for Law & Policy	Gulf South for a Green New Deal Policy Platform	Gulf South (TX, LA, MS, AL, FL)	Mixed urban and rural	2019	Climate justice	Co-produced by community members	[71]
Soulardarity	The Blueprint for Energy Democracy	Highland Park, MI	Predominantly urban	2019	Energy democracy	Co-produced by community members	[76]
Deep South Center for Environmental Justice	Taking Steps Together on Equity & Climate Change: A Report by and for New Orleanians	New Orleans, LA	Predominantly urban	2019	Climate justice	Organization roundtable	[101]
	Transit Equity Day 2019 Report	Philadelphia, PA		2019			[87]

Table 4 (*continued*)

Primary authoring organization	Document name	Geographic scope	Geography type	Year published	Organizing issue	Creation process	Citation
Philadelphia Climate Works			Predominantly urban		Transportation equity	Community member interviews or surveys	
Bicycle Coalition of Greater Philadelphia	2018–2019 Listening Sessions Report	North Philadelphia and Greater West Philadelphia, PA	Predominantly urban	2019	Transportation equity	Community member interviews or surveys	[91]
Emerald Cities Collaborative	The Building Electrification Equity Project	USA	National	2020	Just energy transition	Organization roundtable	[49]
United Frontline Table	A People's Orientation to a Regenerative Economy	USA	National	2020	Climate justice	Organization roundtable	[82]
NDN Collective	Mobilizing an Indigenous Green New Deal	USA	National - Indigenous communities	2020	Climate justice	Organization roundtable	[64]
Race Forward	Energy Democracy: Honoring the Past and Investing in a New Energy Economy	USA	National	2020	Energy democracy	Organization roundtable	[53]
Front and Centered	Accelerating a Just Transition in Washington State: Climate Justice Strategies from the Frontlines	WA	Mixed urban and rural	2020	Climate justice	Organization roundtable	[68]
Asian Pacific Environmental Network	Resilience before Disaster: The Need to Build Equitable, Community Driven Social Infrastructure	CA	Mixed urban and rural	2020	Climate resilience	Organization roundtable	[46]
Puget Sound Sage	Powering the Transition: Community Priorities for a Renewable and Equitable Future	Seattle, WA	Predominantly urban	2020	Just energy transition	Community member interviews or surveys	[58]
Puget Sound Sage	More Places, Better Connections: Transit Priorities for Residents of South Seattle and South King County	South Seattle and South King County, WA	Mixed urban and rural	2020	Transportation equity	Community member interviews or surveys	[88]
Just Transition Alaska	Kohtr'elneyh Remembering Forward: A Strategic Framework for a Just Transition	Tanana River Valley, AK	Mixed urban and rural	2020	Climate justice	Organization roundtable	[55]
NYC-EJA	NYC Climate Justice Agenda 2020	New York City, NY	Predominantly urban	2020	Climate justice	Organization roundtable	[67]
Institute for Agriculture & Trade	The Rural Climate Dialogues: A Community-Driven Roadmap for Climate Action in Rural Minnesota	Stevens, Itasca, Winona, Redwood, and Murray counties, MN	Predominantly rural	2020	Climate justice	Community member interviews or surveys	[50]
Renew Missouri Advocates	Vision for a Way Forward	Rural counties, MS	Predominantly rural	2020	Just energy transition	Community member interviews or surveys	[118]
Oregon Just Transition Alliance	Oregon Green New Deal Statewide Listening Tour Key Findings	OR	Mixed urban and rural	2020	Climate justice	Community member interviews or surveys	[12]
The 100 % Network	Comprehensive Building Blocks for a Regenerative & Just 100 % Policy	USA	National	2020	Just energy transition	Organization roundtable	[77]
US Climate Action Network	Vision for Equitable Climate Action	USA	National	2020	Climate justice	Organization roundtable	[61]
Miami Climate Alliance	Housing Justice in the Face of Climate Change: A Vision for Equitable Housing Policy for South Florida Communities & Advocates Fighting for Dignified and Sustainable Housing for All	Miami-Dade County, FL	Mixed urban and rural	2020	Housing justice	Co-produced by community members	[119]
Tennessee Valley Energy Democracy Project	The People's Vision for a Democratic, Just, and Green TVA	Tennessee Valley (TN, AL, KY)	Mixed urban and rural	2020	Energy democracy	Co-produced by community members	[81]
Labor Network for Sustainability	Workers and Communities in Transition: Report of the Just Transition Listening Project	USA	National	2021	Just transition for workers	Community member interviews or surveys	[66]
Global Platform for the Right to the City	Right to the City: a roadmap for Climate Justice	Global	Multi-national	2021	Climate justice	Organization roundtable	[63]
Reimagine Appalachia	ReImagine Appalachia: The Blueprint	Ohio River Valley (OH, WV, PA, KY)	Mixed urban and rural	2021	Green jobs and just economic development	Organization roundtable	[62]
South Los Angeles Climate Commons Collaborative	Community Investments for Climate Justice: Aligning State and Local Priorities with a Community Vision for the Slauson Corridor	South Central Los Angeles, CA	Predominantly urban	2021	Climate justice	Co-produced by community members	[98]

Appendix II

Table 3

Summary of principles and examples of associated interventions.

Principle	Summary	Examples of associated interventions
Being place-based (Section 4.3.1)	Solutions that adequately recognize local contexts, needs, knowledge, and aspirations	• Low-carbon building interventions that integrate local knowledge of traditional building methods and materials [64,73] • Just transition and green jobs policies that are aligned with regional employment needs [73,108], provide protections for displaced workers that are appropriate to their circumstances (like childcare, relocation, or wage replacement) [66], and provide accessible training that leverages existing skills [93,113] • Restructuring of public budgets around metrics of social and ecological well-being rather than profit- or revenue-based metrics [68] • Complementing quantitative approaches to energy justice policy-making (e.g. maps and metrics that characterize frontline communities) with qualitative, community-based policy approaches [68]
Addressing the root causes and legacies of inequality (Section 4.3.2)	Policy approaches that simultaneously address other social crises, and recognize and prioritize the needs of those most impacted by historic systems of inequality	• Energy projects acknowledge and honor sovereign rights and treaties of tribal nations [64,71,82], ancestral rights and sovereignty are central throughout decision making [64], and energy projects simultaneously advance regional efforts for tribal and land sovereignty [80] • Energy policies oppose and undermine imperialism and militarism, within and beyond national boundaries [56,64,68,70,83] • Cancellation of debt owed by Puerto Rico to the United States as well as the elimination of punitive trade measures [102] • Investments in energy and climate change mitigation should be leveraged to address other social crises like unemployment, mass incarceration, education, healthcare, and wealth inequality [12,45,49–51,53,57,58,69–71,80,82,119] (e.g. through the integration of weatherization and building electrification programs with asbestos and mold removal programs [49,58,60,110,116], pairing rural energy policies with broadband investment [62,118], siting new, sustainable, affordable housing near public transit [45,59,68,71] and on uncontaminated lands [73,89], using public transit to increase access to schools [65] and jobs [59,111], reducing or eliminating policing targeting low-income people of color using cycling or public transit infrastructure [67]) • Energy interventions that simultaneously address lack of economic opportunity by creating local jobs through utility workforce development programs [49], local hiring plans and ordinances [44,45,51,56,60,71,101,111], and community benefit and workforce agreements [49,54,76,107] • Immigration reform to ensure participation of migrant workers in a green economy [54,58,108,109] • Making college and vocational training financially accessible [111] • Removal of barriers to employment for individuals who have criminal records or are formerly incarcerated [45,49,58,68,71,108,109] • Long-term, predictable funding for building energy interventions for low-income, affordable, and renter-occupied housing [45,51,67,82,97,101] • Prioritizing public transit interventions over personal electric vehicle interventions [44,45,58,77,82,87–91]
Shifting the balance of power in existing forms of energy governance (Section 4.3.3)	Instituting meaningful, accessible, bottom-up avenues of participation and influence for grassroots leaders and frontline communities	• Providing intervenor funds for community members and grassroots leaders to engage in utility commission and rate design proceedings and other public meetings [40,77] • Instituting climate, environmental, energy, and transit justice boards [59,66,97,101] • Physical presence of decision-makers in communities, particularly remote communities (rather than just outreach and solicitation of feedback via phone or internet) [50,80] • Engaging communities from the onset, not after a policy solution has been devised [77] • Leveraging local knowledge by prioritizing local experts and staff over out-of-state consultants to inform energy policy [101] • Using race and social justice criteria in impact assessments [59] • Supporting and upholding unionization efforts in energy workforces [57,58,62,71,102] • Participatory budgeting [44,59,68,76,77], and designing metrics of economic success and development in alignment with community needs [55] • Budgeting for literacy and knowledge dissemination around emerging policies like electrification [49,56,57,81] • Nation-to-nation relationship is applied to projects on Indigenous lands [64,77] • Support and decriminalization of resistance, protests, direct action, and civil disobedience in response to energy and environmental injustices (e.g. pipeline expansions) [44,53,64,68,76]
Creating new, cooperative, and participatory systems of energy governance and ownership (Section 4.3.4)	Establishing cooperative, participatory, and democratized systems of energy governance and that redistribute resources and power	• Funding and supporting tenant organizing and tenant unions [44,68,115,116] • Funding and supporting cooperative land ownership and cooperatively owned housing, which can facilitate collectively owned means of energy production [44,53,59,76,82,89,117,119] • Expanding public ownership of utilities [58,68,77] • Exploring community ownership of electric vehicles [82]

Table 3 (*continued*)

Principle	Summary	Examples of associated interventions
Adopting a rights-based approach (Section 4.3.5)	Policies that affirm and secure a right to energy, labor rights, and the right to remain and build community in safe and sustainable neighborhoods	● Creating mechanisms for tribal nations to own and manage their own electric services and generation [82] ● Ending utility shutoffs [49,56,58,119] ● Protection against rising costs for electricity and heat [76,112] ● Utility bill and transportation fare assistance [68,77,87] ● Creating structures for energy production, generation, and utilities not as privately owned commodity for profit, but as a commons-held right [57,77,82] ● Energy jobs that affirm the right to a living, family-sustaining, or prevailing wage, the right to unionize and collectively bargain, the right to a safe and toxin-free working environment, and the right to accessible healthcare [45,51,54,56,58,62,71,82,93,108,113,114,120] ● Advancing a social safety net for all [68,71,93]
Rejecting false solutions (Section 4.3.6)	Rejecting climate or energy solutions that focus on carbon reduction while neglecting political, economic, or social justice, or sacrifice one community for another or for the privatization of public resources	● Opposing financing and political support for generation and extraction practices that increase the vulnerability of communities to disaster or local emissions (including nuclear generation, hydropower, fracking, "clean coal", and "bridge fuels" that are integrated with corporate fossil fuel business practices like biodiesel blends) [58,64,67,68,70,71,77] ● Opposing carbon markets and taxes as a dominant climate mitigation approach [47,52,63,64,67,68,82,83,99] ● Pre-empting environmental gentrification through increased and strengthened renter protections and anti-displacement policies [51,58,68,77,82], one-to-one replacement of efficient, affordable housing when new units are constructed [68], along with the cooperative ownership measures discussed in Section 4.3.4

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