



## Original research article

## Energy democracy: Goals and policy instruments for sociotechnical transitions

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## ABSTRACT

Energy democracy is an emergent social movement advancing renewable energy transitions by resisting the fossil-fuel-dominant energy agenda while reclaiming and democratically restructuring energy regimes. By integrating technological change with the potential for socioeconomic and political change, the movement links social justice and equity with energy innovation. Through a policy mix lens, this research examines the energy democracy agenda in the United States to understand how and to what extent the mix of policy instruments currently proposed among energy democracy advocates corresponds to the overarching goals of the movement. This assessment compares 22 policy instruments to 26 intended outcomes for energy democracy. The mix of policy instruments holds potential for advancing renewable energy transitions based on the combined goals of resist-reclaim-restructure, although current policies relate unevenly across the set of intended outcomes. Bolstering the energy democracy agenda will likely require developing new policies, strengthening existing policies, and integrating efforts to simultaneously resist dominant energy systems while also supporting their democratic and inclusive replacement. This research increases the visibility of the energy democracy movement and clarifies and assesses the core claims and policy instruments advanced by its advocates, contributing to policy design for renewable energy transitions and energy democracy.

## 1. Introduction

The concept of *energy democracy* is increasingly being used by grassroots activists in the United States, parts of Europe and elsewhere to call for and justify integrations of policies linking social justice and economic equity with renewable energy transitions. Energy democracy is thus both a novel concept and emergent social movement that connects energy infrastructural change with the possibilities for deep political, economic and social change. The term continues to spread throughout climate justice struggles, trade unions, academic communities, and political parties, while beginning to reach regional and national level discourse [1].

Energy democracy emerges in the context of an increasing sense of urgency regarding global anthropogenic climate change. Despite growing recognition of the inherent unsustainability and injustice of fossil fuel civilization [2], an inability to adequately reduce fossil fuel dependency persists. The issue of and need for shifting away from fossil-fuel-dominant systems toward renewable-based energy has therefore become a central theme for science, politics, and public discourse worldwide [3–8]. How the decline in fossil fuel reliance plays out is

likely to be among the most contested areas of policy and politics over the coming decades [4,9–12].

Realizing opportunities for this restructuring of sociotechnical regimes [12] requires a re-imagining of energy politics [13], an effort that energy democracy advocates intend to inspire. The energy democracy movement seeks to create opportunities for destabilizing power relations [1], reversing histories of dispossession, marginalization [14,15] and social and environmental injustices [16], and replacing monopolized fossil fuel energy systems with democratic and renewable structures [17]. Above all, energy democracy offers a set of visionary organizing principles that provide guidance for democratically restructuring the energy and electricity sectors through the processes of shifting from fossil-fuel-based systems to renewable energy systems [18,19].

Drawing from sociotechnical transition theory, the energy democracy movement represents an example of a de-alignment/re-alignment transition pathway, an ideal-type pathway for energy transition that develops in response to serious contextual pressures [20]. This transition pathway is characterized by a significant presence of actors who have lost faith in existing governing systems, the emergence of new

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guiding principles, beliefs and practices, the co-existence of multiple innovations and widespread experimentation, and a shift to more local or regional-based systems and decentralized technologies and management structures [20]. Such an agenda is intentionally incongruent with the governing systems in effect in most jurisdictions, thus deliberately lacking a goodness of fit with conventional energy regimes [21]. Further, a strategy of de-alignment and re-alignment implies inherent uncertainties regarding the best path forward [20], and may lead to ineffective combinations of policy instruments that fail to achieve the desired outcomes even if adopted [22]. In such a situation, policy tradeoffs and conflicting goals are arguably inevitable [23].

Recent scholarship on sociotechnical systems change acknowledges that the urgency for transitions to sustainability requires policy mixes that combine instruments that can destabilize existing regimes while creating space for innovative alternatives, described as processes of creative destruction or disruptive innovation [24,25]. In this sense, a comprehensive agenda for energy transition demands a combination of policy instruments that simultaneously seeks to resist dominant energy systems and support their replacement. Research has not yet given sufficient attention to such comprehensive agendas for sociotechnical change, however. For example, policies for resisting or destabilizing incumbent regimes have received less attention than policies for innovation [25], and combinations of policies for simultaneous innovation and disruption have also received minimal attention [24]. By explicitly linking moves to both destabilize incumbent systems and support new alternatives, energy democracy proposes a uniquely comprehensive and potentially effective agenda for driving deep sociotechnical change [24,23]. Given its integrated social change focus, the energy democracy approach may present better prospects for achieving the renewable energy transition than more traditional energy innovation and climate mitigation efforts that are often isolated from other social issues [26,21].

This paper focuses on the energy democracy agenda in the United States and asks, how and to what extent does the set of policy instruments currently proposed among energy democracy advocates correspond to the overarching goals of the energy democracy movement? A policy mix lens offers a useful approach for drawing attention to sets of policies rather than individual policy tools, designed to achieve proposed societal outcomes [27]. A policy mix lens further provides a framework for considering specific tradeoffs and potential conflicts within and between sets of policies, and for understanding how these different policies may interact to influence the achievement of goals and intended outcomes [28,23]. Drawing from a review of both activist and academic literature on energy democracy, our aims include increasing the visibility of the energy democracy movement, clarifying and assessing the core claims and policies advanced by energy democracy advocates, and contributing to integrated policy designs for energy democracy.

In the following section, we describe our approach to assessing energy democracy goals and policies based on a review of recent sources on energy democracy. In Section 3, we present the results of the review of goals and policy instruments for energy democracy. Here we synthesize and present the core energy democracy goals and summarize specific policy instruments associated with the energy democracy agenda for renewable energy transitions. Section 4 presents the results of this assessment comparing energy democracy goals and policy instruments. In Section 5, we discuss the significance of the review and assessment in terms of the value of integrating a policy mix approach with an energy democracy agenda. This integration offers insights for understanding policy mixes in the context of urgently needed sociotechnical systems change, as well as for strengthening the energy democracy agenda. We address limitations of this research, suggesting areas for further research on the design of effective energy democracy policy mixes to advance renewable energy transitions. In Section 6, we summarize our main conclusions and their implications for scholarship and practice.

## 2. Conceptual lens and methods

In this paper, we initiate an assessment of whether and how the mix of policy instruments proposed within the energy democracy movement advances the overarching goals of the movement. To conduct this assessment, we first undertook a conceptual review of energy democracy to identify the goals and policy instruments associated with this social movement. This assessment requires some clarity on how the term energy democracy is used in practice. We then operationalized each broad energy democracy goal as a set of intended outcomes to enable a comparative assessment with each individual policy instrument.

This preliminary assessment of energy democracy policy instruments draws from a policy mix perspective, in which policy mixes are understood broadly as “complex arrangements of multiple goals and means which, in many cases, have developed incrementally over many years” ([22], p. 395). This basic definition differs from the more comprehensive policy mix concept as proposed by Rogge and Reichardt ([29], p. 24) but largely suits the purposes here by emphasizing the generalized notions of goals as desirable ends and policies as the means to achieve these ends over time. Nevertheless, we do follow Rogge and Reichardt [29] to further specify our meaning of goals and policy instruments as applied here. In this work, the term *goal* refers to the set of intended effects or outcomes of policy instruments ([29], p. 9). The term *policy instrument* refers here to the specific tool or technique used to address policy problems, including programs and measures ([29], p. 9). The units of analysis for this initial assessment include each individual policy instrument and ultimately the constituting set of energy democracy policy instruments, described as an *instrument mix* ([29], p. 3).

The aim then is to contribute to understanding connections between goals and policy instruments. Conceptually, we assess the *congruence* of the relationship between goals and policy instruments as a means for evaluating the predicted success or failure of these efforts for energy transition ([22], p. 395). While much of the policy mix literature focuses on coherence of goals and consistency among existing policies, this assessment centers on the congruence of a set of existing and proposed policy instruments with a broad and emerging set of goals. We emphasize that the present assessment involves energy democracy goals as intended outcomes rather than actual impacts. An empirical assessment of impacts of specific policy instruments is beyond the scope of this paper due to the recent emergence of energy democracy and the complexity of both the policy instruments and the factors influencing the realization of their goals [23]. Rather, this inquiry assumes that the large-scale sociotechnical transformation demanded by the energy democracy movement requires that the appropriate mix of policy instruments are actively and sufficiently proposed.

For the conceptual review, iterative searches were performed beginning in October 2015 using academic libraries and popular search engines publicly available in Canada and the United States. Search terms used included “energy democracy” and “energy AND democracy” and were directed at all source content, yielding an initial set of approximately thirty English-language reports, articles, websites and videos. This set of sources was expanded through November 2016 using searches of activist group websites, notifications from relevant listservs and participation in webinars, as well as inclusion of references frequently cited within source materials. These sources were coded first according to definitions of terms and concepts, findings and conclusions, and calls for further research. This process was followed by repeated topical sorting of coded material according to researcher-generated topics including origins and contextual factors, energy democracy actors, purposes and goals, guiding principles and values, core policy tools, and barriers. The sorted materials were organized within a conceptual outline that was used to guide the initial drafting of the review of energy democracy. This initial procedure to review the concept of energy democracy revealed a breadth of topical categories that inspired two supporting lines of inquiry, ultimately producing two

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