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Political power and renewable energy futures: A critical review

Matthew J. Burke\textsuperscript{a,⁎}, Jennie C. Stephens\textsuperscript{b}

\textsuperscript{a} Department of Natural Resource Sciences, McGill University, Macdonald Campus, 21,111 Lakeshore Road, Ste. Anne de Bellevue, Quebec H9X 3V9, Canada
\textsuperscript{b} School of Public Policy & Urban Affairs, Global Resilience Institute, Northeastern University, Boston, MA, USA

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ABSTRACT

Inspired by the energy democracy movement, this conceptual review critically explores relationships between concentrated or distributed renewable energy and political power. Advocates assert that because the renewable energy transition is fundamentally a political struggle, efforts to shift from fossil fuels and decarbonize societies will not prove effective without confronting and destabilizing dominant systems of energy power. The objectives of this paper include: 1) theorizing and exploring the relationships between renewable energy and political power, 2) critically assessing tensions associated with an energy democracy agenda, and 3) drawing out the implications for democratizing renewable energy development in practice. Distributed energy-politics posits that distributed energy sources and technologies enable and organize distributed political power and vice versa. Efforts are underway to find ways to re-organize distributed energy flows into aggregated and concentrated stocks of energy and other forms of political power. More democratic renewable energy futures may benefit from strengthening democratic practices and outcomes, extending democratization of energy systems across all components, stages and end uses, and sharpening positions relative to dominant pressures of capitalism and market ideology, the ideology of unlimited growth, and the modernist/industrialist agenda. Renewable energy systems offer a possibility but not a certainty for more democratic energy futures.

1. Introduction

Our present era of fossil-fueled economies, societies and civilizations [1–3] has given rise to an anomalous and dangerous moment for contemporary humanity and our shared biosphere [4]. The accelerating trends of planetary warming evidenced through storms and ice melts, droughts and hunger, unrest and migration, increasingly compel a heightened sense of urgency regarding the need to rapidly end the age of fossil fuels. A growing consensus now views the transition to renewable energy systems, frequently understood as a process of fuel substitution, as a key strategy to address the climate crisis.

Despite a growing sense of urgency, the deployment of renewable energy technologies has been frustrated, it would seem, by democratic procedures. In many cases, local conflicts around renewables energy installations, especially wind power but also solar facilities, have delayed or even halted the uptake of renewables [5], mirroring the many worldwide historical conflicts around the development of technologies such as hydroelectric [6] and nuclear power [7,8]. It would thus appear an unlikely and even poorly considered time to call for greater democratic engagement with the renewable energy transition.

Within the past decade, however, renewable energy advocates and social and environmental justice activists have been organizing around a call for energy democracy. Energy democracy can be understood as a contemporary expression of decentralized grassroots movements of the 1970s, the 1980s and before. These earlier movements frequently sought to connect antinuclear activism and concerns about the geopolitical instability of fossil fuels with calls for local direct action and visions of “technological democracy” [9–11]. The origins of the present discourse around energy democracy can be traced to various activist communities within Europe and the United States who have been developing an explicit energy democracy agenda for nearly ten years. The term and notion of ‘energy democracy’ has since been taken up among climate justice activists, some trade unions and academics, and political parties, and put into practice through project-level, municipal, regional and national experiments\textsuperscript{1} [12].

Compared to fossil fuels, renewable energy offers many perceived advantages in addition to fuel switching, including the relative availability of distributed renewable resources, the access to and modularity of their enabling technologies, and the potential for new forms of ownership [13] (in this issue). These advantages have inspired a

\textsuperscript{⁎} Corresponding author.

\textsuperscript{1} The authors note a limited set of empirical research and case studies on specific examples or initiatives of energy democracy particularly within the academic literature. From academic and non-academic sources, see for example [10,17,30,31,35,41,42,99].

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movement committed to advancing social and environmental justice through a transition toward renewable energy technologies. These efforts are seen as an extension of various, widespread social movements working to address climate and economic crisis by not only resisting fossil fuel use and a market-driven green economy agenda but also by advocating for decentralized, democratized, and community-based renewable energy futures. This approach calls for reclaiming the energy sector and shifting political power to workers, households, communities, and the public, in opposition to a centralized, corporate, utility-scale renewable energy model [12,13 (in this issue),14,15–18]. Some leading organizations explicitly promoting energy democracy include the Local Clean Energy Alliance, Trade Unions for Energy Democracy, the Institute for Local Self Reliance, the Center for Social Inclusion, Transnational Institute, and the Rosa Luxemburg Foundation [12,17,19]. Energy democracy also connects with related terms such as energy justice, energy sovereignty, energy citizenship, and energy decolonization that similarly integrate political claims within agendas for energy transitions [12,13 (in this issue),14,20,21].

Energy democracy as yet defies specific definition [22]; while a multitude of priorities are embraced within the movement, several commonalities hold the energy democracy agenda together. Energy democracy is a part of the process of ongoing struggles for economic and political democratization as expressed through the practical project of energy transitions [17,22,23]. Seeing opportunity in renewable energy technologies, especially solar and wind technologies, energy democracy targets energy systems as key sites of political-economic contests, shifting power over diverse aspects of these sectors, including generation, distribution, finance, technology and knowledge [22], and pursuing a goal of high levels of deployment of renewable energy [19]. In particular, energy democracy seeks to empower low-income communities and communities of color [18,19,24,25], embracing the idea that those most marginalized are well-positioned to envision and lead toward different energy futures [19].

The energy democracy agenda seeks to advance democratization and participation through democratically-planned and public- and community-owned and -operated renewable energy systems that serve the public interest and deliver tangible community benefits, such as decent and stable employment, public space and transportation, and new public institutions. Energy democracy eschews not only centralized commodity-based energy models based on fossil fuels and nuclear energy but also historical inequalities, neoliberal ideologies, alliances with large corporate profit interests, privatization, market-driven and growth-based approaches and concentrations of economic and political power [14,15,18,22,26–31]. Energy democracy also means ensuring fair access to energy, taking responsibility for the quality of ecological systems, and changing attitudes about energy consumption toward conservation and sufficiency [10,15,18,29,30]. Ultimately, energy democracy redefines individual consumers as citizens, energy commodities and provisions as public goods, and infrastructure as public works or common resources [16,23,32,33].

Advocates are not blind to the significant barriers confronting this agenda. Community ownership may be constrained by persistent structural exclusions such as unfavorable systems of tax incentives [28,34] and lack of investment in marginalized communities [35]; historical rules and governing institutions favoring centralized electricity infrastructures and utilities [33,36]; inadequate and deeply undemocratic systems of financing involving fund managers concentrated in the global north who make key decisions about energy futures for the benefit of impatient investors with expectations of high rates of return [37]; and resistance from the incumbent interests, including the fossil fuel industry [38], nuclear and large-scale hydroelectric [37], and globally mobile capital [12].

Nevertheless, energy democracy advocates point to a variety of approaches that can help to overcome these obstacles and advance an energy democracy agenda. Most broadly, energy democracy would ensure public and community control and ownership of the energy sector, while policies and programs would seek to build capacity for communities to inclusively and effectively exercise this control for purposes identified by and accountable to the communities themselves [18,26]. Re-establishing this control is viewed as an essential first step [31]. Democratic ownership and control can take many forms, and creating diverse and flexible ownership structures of generation resources is central to the energy democracy agenda [18,26,27]. The need for large-scale coordination, re-distribution and investment requires that governments occupy a key role for facilitating, planning and owning energy systems, although the public sector itself requires a re-democratization following widespread corporate capture [12,14,17,22,39]. The state, municipalities, trade unions, and cooperatives are all recognized as critical arenas of contestation for energy democracy, offering no assurances of greater democracy but widely seen as promising approaches, particularly at the local and municipal level [12,23,31,39–43].

Finally, energy democracy advocates recognize that energy systems are inseparable from larger social and ecological patterns and relationships, and therefore energy democracy requires careful, inclusive and strategic construction of alliances [31,37]. Despite a sense of urgency around renewable energy transition, building collective political power and organization is viewed as a necessity, requiring short-, medium- and long-term goals and strategies [18]. Building alliances could begin by learning from other movements working toward a deeper transformation through energy transitions [22,37]; increasing collaboration among potential allies, for example, ecological and social movements, labor unions and energy sector workers, public managers and administrators, low-income communities and communities of color, and small businesses and research institutions [12,18,23,31,37,40,44]; and strengthening local institutions [23].

Energy democracy may provide a shared discourse and unifying vision for building alliances and institutions, and synthesizing values and struggles within a common agenda for reclaiming and restructuring energy systems as well as broader economic and political systems [15,22]. This call for energy democracy is strategic: democracy implies a broadly appealing agenda for greater inclusivity, equity, and influence among communities involved with renewable energy transitions. The call is also pragmatic: a massive shift of technologies within the modern energy sector presents innumerable challenges as well as potential benefits. Greater democratic engagement would offer communities a means to steer energy transitions and shape the development of renewable energy futures.

Energy democracy and energy transitions are also fundamentally political [45,46]. Given the seemingly pervasive grip that fossil fuel industries and their financial and political allies command over contemporary political life, energy democracy activists seek to make visible within the public sphere the hidden infrastructures, privatized decisions and distant consequences of modern energy systems. The instinct to politicize renewable energy transition reflects an implicit understanding that the transition from fossil-fuel dominant systems to those based on renewables offers an unprecedented yet potentially unrepeateable opportunity. As with new forms of media communications, new energy technologies present an opportunity to more deeply engage with questions of technological determinism [47]. Through selection and construction of these large-scale infrastructural technologies, the world will again be re-ordered: decisions and investments will be made, groups of actors will be politically re-positioned, and material structures as well as social and ecological patterns will be established that may endure for generations [48]. The form of politics used to steer renewable energy transitions will greatly influence the possibility for more democratic futures [49].

In other words, if governed largely to preserve existing power relations, the renewable energy political economy may replicate existing dynamics of power, continuing to strengthen the powerful and weaken...
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