



Energy Democracy and the City: Evaluating the Practice and Potential of Municipal Sustainability Planning

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While calls for, and work toward, energy democracy have been entrenched in social movements, and the concept has a burgeoning posture in academic discourse, perhaps the most significant implication for its development is the potential for its implementation at the local governance scale. In order for municipal efforts to be wholly democratic, energy policy must be accessible and responsive to the needs of all communities. This necessitates the convergence of an energy democracy paradigm with principles and practices of both energy justice and just sustainabilities that encourage communities and households' entrée to the energy planning arena, as participants in policy making and with access to renewable innovations. By using a case study as its means of analysis, this paper will evaluate municipal-scale energy programming by considering the prospects of energy democracy on a sub-state scale. In our analysis of Washington, DC's sustainable energy utility, we highlight challenges that limit the potential for energy democracy in the nation's capital, along with practices that lead DC toward energy justice and democracy. We conclude by offering indicators for democratized urban energy planning.

Keywords: energy democracy, energy justice, just sustainabilities, sustainability planning, sustainability energy utility

INTRODUCTION

Claims for energy democracy envision the emergence of energy *prosumers* who are influential at all points in the life-cycle of energy, including as designers and analyzers (Communication Institute and University of Utah, 2017). Further, it necessitates that "community residents are innovators, planners, and decision-makers on how to use and create energy that is local and renewable" (Center for Social Inclusion, 2017) and has the potential to "empower the individuals and communities that have the energy resources of the 21st century (e.g., wind and solar) to economically benefit from their use" (Farrell, 2014). Several core elements are broadly recognized as essential to energy democracy, including: system decentralization, citizen engagement in decision making, public ownership, and consequent economic benefits associated with energy (Becker and Naumann, 2017, Tarhan, 2017). However, calls for energy democracy often fail to account for the complexities associated with energy systems; particularly relating to physical structures, operations, and unique local "political, economic and social" (Burke and Stephens, 2017) characteristics that influence outcomes.

We view an urban energy democracy as the culmination of the above, while operating within the purview of municipal and sub-state policy and planning. Urban energy democracy emphasizes the role of residents as consequential actors in energy planning and design, and who are featured in prominent roles in the delivery of energy services. It stresses energy conservation and renewable energy strategies and is cognizant of all phases across the life-cycle spectrum of energy use

(including social concerns), and orients itself as a conduit for community empowerment and self-determination. An urban energy democracy should act in conjunction with broader urban sustainability planning goals, which are the totality of planning strategies centered on comprehensive development related to regional-scale environmental and ecological concerns.

Furthermore, the potential for energy democracy is intertwined with an equity and just sustainabilities (Agyeman et al., 2003) discourse, which engages in community based development while recognizing the unique characteristics of various stakeholders and groups (Reames, 2016a,b), while steeped in the principles of economic justice. In order for energy democracy to reach its potential, it must emphasize access to, and the affordability of, energy services for marginalized communities, is predicated on sustainable fuels sources in its recognition of threats deriving from global climate change and local environmental hazards that disproportionately harm marginalized communities, and offers a prominent role for all stakeholders in determining energy futures. Critical to this framework is an equity discourse built around social and economic justice, along with the distribution of environmental benefits to marginalized communities and their remoteness from disproportionate burden sharing. With social capital being a recognized element in environmental decision making that prioritizes public participatory processes (Peterson et al., 2006) argue that social capital alone, in absence of sturdy state structures will not create an enabling environment for democracy to occur and might result in less than expected environmental protection outcomes. There is also evidence of a lack of attention to equity and justice concerns within broader sustainability policy on the local scale (Teron, 2015, 2016), and due to this, it is critical that we assess not only who is at the table for local-scale energy governance, but also ensure that participants have voice in decision making and are empowered.

Considering the attention that US cities have given rise to energy policy, including the US mayors' climate change consortium and innumerable sustainability plans, the need to explore the policy/democracy nexus is pertinent. This work acts as a companion piece to earlier efforts that have evaluated municipal

sustainability plans' attention to justice concerns (Teron, 2015, 2016). We diverge from broader environmental and sustainability planning concerns here, by specifically evaluating energy policy and putting forth research that can aid energy planners as well as community based interests.

MATERIALS AND METHODS

While acknowledging the above complexities, this article seeks to explore the practices and looming threats to the potential of energy democracy at the municipal level. Washington, DC was chosen as a model for the case study as its energy programming goes back several mayoral administrations, thus substantiating its durability and capacity to exist beyond a singular pro-environmental administration. This is manifest by program anchoring within DC's department of energy and environment, as opposed to a mayor's office level entity, which can benefit or decline based on the intensity that any particular regime may (or not) have toward consequent issues.

We evaluated DC's energy programs by initially engaging in an overview of relevant literature, including sustainability and climate plans along with energy programming. Data collection involved consultations with planning officials from the DC sustainability energy utility, a comprehensive review of energy planning materials, from both project websites and official planning documents and the review of relevant federal legislative and energy policy documents. We used interviews and consultations to navigate the mechanisms of programs and to identify partnerships that the city fostered. Finally, based on the review of innumerable US urban sustainability and energy plans and programs from over three dozen of the most populated US cities, we developed a non-exhaustive set of indicators that show the potential for energy democracy practice in urban settings (See **Table 1**). We acknowledge limitations which include governance issues that are unique to DC, due to the city's political status (addressed below) that are not entirely replicated by standard devolution of statutory powers from US states to local entities.

TABLE 1 | Suggested energy democracy indicators for municipal energy regimes including equity, environmental, and economic categories.

| Category | Principle stakeholders | Sample indicators |
|------------------|--|--|
| Equity | Marginalized communities Future generations | <ul style="list-style-type: none"> • Energy/weatherization programs with targets/outreach for low-income households • EJ language used in programming materials • Public transportation/non-auto centrality as conspicuous part of energy planning/programming • Translation tools/document interpretation for limited English proficiency communities |
| Environment | Local ecologies Resource extraction communities Global ecology | <ul style="list-style-type: none"> • Residential energy auditing/weatherization program (commercial or residential) • GHG emissions accounting (municipal fleet and community-wide accounting) • Renewable energy production (MW installed capacity) • Residential electricity use/capita |
| Economic | Energy entrepreneurs Energy cooperative shareholders | <ul style="list-style-type: none"> • Share of household income spent directly on energy (home and transportation) • Jobs directly created for city residents via energy programs • Solvency: financial capacity to take on energy projects • Residency preference hiring programs for energy programming |
| Energy Democracy | Residents | <ul style="list-style-type: none"> • Energy planning/utility board composition representative of diverse community interests • Voter participation in state/local elections • Training programs targeted toward municipal residents • Prosumers influence on social life-cycle analysis concerns |

WASHINGTON, DC: ENERGY DEMOCRACY IN PRACTICE

With just over 680,000 residents, democratic exercise in Washington, DC is unique among US cities. As a federal district, its residents do not have voting representation in Congress (they do elect a delegate to the US House, who can vote on procedural matters), and the Constitution grants Congress “exclusive jurisdiction” over the nation’s capital. Accordingly, emboldened on DC’s license plates is the Revolutionary Era slogan “Taxation Without Representation.” There is value in framing DC’s manifestations of energy democracy, along with threats, within these contexts.

Washington, DC’s energy programs operate out of the city’s Department of Energy and Environment from which the DC sustainable energy utility (DC Sustainable Energy Utility, 2015) operates. It exists as a quasi-private entity responsible for administering the city’s sustainable energy programs, which include: reducing per capita energy consumption and increasing renewable energy generating capacity; improving energy efficiency in low-income housing, *via* weatherization, technical assistance, and financial inducements to developers and property owners (DC SEU). The DC SEU is representative of an emerging alternative to conventional energy utilities and service provision, as SEU’s are community based and grounded on the principles of energy conservation and efficiency, while placing emphasis on the use of renewable energy sources. Similar entities have sprouted up in various locales across the nation, including Pennsylvania and California.

With a goal of reducing 2006 greenhouse gas emissions by 50% by the year 2030 and a target of 80% by 2050, DC has among the most aggressive targets in the nation. Concurrently, it has some of the highest per capita emissions rate in the US. In 2015, Washington, DC ranked 35 out of 50 states (plus DC) for per capita energy consumption with 267 million Btu per capita (US Energy Information Administration, 2017c). It ranked last in total CO₂ emissions in 2014 with three million metric tons (US Energy Information Administration, 2017a). SEU initiatives have led to reduced electricity consumption. In FY 2015, electricity consumption was reduced by 57,000 MWh and led to a reduction of nearly 87,700 Mcf of natural gas (DC SEU). The aforementioned has substantive environmental benefits along the entirety of the life-cycle spectrum, including reduced pressures for fossil fuel extraction, the reduction of natural gas leakage, fewer power plant emissions, and waste byproducts. Consequently, the environmental implications, both locally and beyond, are meaningful.

AN IMMINENT THREAT TO THE SEU’S POTENTIAL

The potential for DC’s ambitious energy policy faces external obstacles that along with the claims above regarding voting representation, serve to further disenfranchise Washingtonians. It is critical here to consider Congress’ jurisdiction over the city, coupled with right-wing domination in both houses of Congress, along with conservative antipathy toward progressive climate policy (and climate science more generally). This is in addition to

an ensemble of threats from the 115th Congress regarding other matters relevant to DC and “home rule,” including: euthanasia, undocumented immigrant defense, welfare reform, gun-control, and abortion legislation (Davis and Jamison, 2017). While the text of the House’s 115th Congress’ Oversight and Government Reform Plan, as pertains to DC, focuses on school choice and tuition assistance, the last line of this section ominously states the Committee’s intention to “strengthen Congress’s oversight of DC’s and exercise of its plenary legislative authority granted by the Constitution.” (US House of Representatives, 2017) It is not a leap to view potential threats to DC’s renewable energy strategies, considering the attention that the House’s authorization gives to energy and the environment with regards to: (i) a heightened focus on pursuing hydraulic fracturing, (ii) prospective easing of the oil and gas pipeline permitting process, (iii) increased efforts to develop coal exporting facilities, and (iv) heightened scrutiny of clean air and water rules’ implications on the “economic well-being of American families, job creation, [and] energy security” (US House of Representatives, 2017).

ANALYSIS

Considering the complimentary existence between urban energy democracy and justice, practices and outcomes must emphasize marginalized populations. This includes outcomes which are committed to community empowerment, contain critical life-cycle analysis, and include programming that is targeted to low-income groups, along with the capacity for residents to be involved with the design and delivery of renewable energy services. Consider DC’s successful green jobs program as a critical piece of its energy strategy within the larger context of citywide resident job preference programming. Notwithstanding a 10-point residency preference bonus, a majority of workers in overall city government jobs are not city residents—of 35,302 in qualified positions, only 15,191 were DC residents (King, 2016). By contrast, 100% of SEU employees—including upper management—are DC residents and the city’s green jobs program, which mandated that all employees receive (including those working through government contractors) a minimum wage of \$13.80. This was enacted years before a citywide \$13.40 minimum wage that would go into effect in 2018. Another entry point is Solar Works DC, a joint job training and solar installation project, which is representative of an approach to converge renewable energy goals with workforce development and consideration for low-income households. The SEU’s green jobs program created over 185,000 green job hours for over 240 residents in 2015. This suggests a capacity for Washingtonians to play roles covering the range of project planning and design phases of energy project development all the way through the delivery of services. While green jobs are critical, they should not be the economic end point. Beyond training and guaranteed wages, energy programs must make concerted efforts to advanced marginalized communities beyond the employee stage, but give attention to contracting with businesses from these same groups¹.

¹As an example of how this would manifest in DC or elsewhere, the city of Seattle has contracting goals that target 13% of purchasing and 17% of consulting

While the city was lauded earlier, for facilitating community access to planning and design phases of energy policy, the city has significant room to improve in other areas of emphasizing the role of residents as consequential components of energy design, particularly those from linguistically isolated communities. The extent of its outreach in this area is website-based translation tools to make online materials accessible for limited English proficiency communities. This is a rudimentary step that does not provide residents entrée to networks and programs that are not on the web, who may need resources beyond web materials or who wish to be involved at public meetings.² We identify “translation tools/interpreters access for residents/consumers” as a critical indicator of urban energy democracies. In designing and implementing energy programs at the city level, municipalities need to be cognizant of potential language barriers among residents. In failing to do so, approximately 10,000 adult DC residents, who are self-identified as speaking English as less than “very well” (Teron, 2016) are locked out of the energy sphere.

While municipal energy planning rightfully give considerations to a range of issues, including: renewable energy portfolios, green jobs, and energy efficiency and conservation, given that in the US the transportation sector accounts for nearly 30% of all energy used, with a majority coming from light-duty vehicles (US Energy Information Administration, 2017b), it would behoove local energy planners to explore how this sector can be better integrated into policy. We view the disconnect between transportation planning and energy policy as a critical nexus for DC to forge. While the SEU gives considerable attention to building emissions and residential power sources, ample concern should be given to the amalgamation of transportation and energy policy. It is shortsighted for DC, and many other municipal energy regimes, to overlook this. We urge a more holistic framework which captures the transportation sector’s emissions and fuel use as a pathway toward more robust energy and transportation policy along with greater sustainability goals. We urge that public transportations/non-automodality be included as a measure of energy democracy in cities. In Washington, DC, while approximately 39.5% take a private vehicle to work, a nearly equal number of commuters (38%) take public transportation to work, and another 16.9% either bike or walk to work. This is in contrast to the national picture, in which over three-quarters of the population rides a private vehicle alone to work and just over 5% rely on public transportation (McKenzie, 2015). When considering the environmental benefits (both local and beyond) along with the diverse residential interests involved in urban transit planning, this is an opportunity for DC to take further leadership on,

and also to have a better accounting of, the entire suite of energy services and processes that are fundamental to urban life.

CONCLUSION

We contend that Washington, DC, notwithstanding limitations in its energy programs, is an emerging urban energy democracy. Indeed, there are critical areas of improvement that the city must consider as its policies evolve, including: governance concerns, equity, and outreach to the linguistically isolated and the incorporation of transportation into the body of renewable energy strategies. Other indicators are favorable for DC’s evolution as a functioning energy democracy. This includes the presence that city residents have in program development and delivery and renewable strategies that target renters. Furthermore, its projects are steeped in efforts based on truncating the city’s and its residents’ collective environmental footprints. These and similar programs are done with specific programmatic language stressing environmental justice, and is embodied by the diverse array of community interest that are represented across the energy planning spectrum, including skill-based green jobs training programs, an energy advisory board that represents a cross-section of community interests and energy/weatherization programming that features extensive outreach to low-income households.

We recognize that a vast majority of energy consumers across the US receive services from conventional fossil fuel-based energy regimes. However, considering the perilous energy futures associated with carbon intense energy systems, and their contribution to both local and global environmental instability, alternative strategies that are based on energy conservation, efficiency, and renewable, while embedded within a just sustainability paradigm are necessitated. Therefore, while this study is a seminal look at the behaviors and possibilities of only a sole emerging democracy, it offers perspectives and outlooks for other local energy regimes to consider in their movements toward more democratic, just, and sustainable behavior. It is critical for Washington, DC and other urban entities to have both democratic and just orientations, in order to capture the widest swath of residents in the desired outcome of becoming more sustainable cities. This will involve further work among researchers, planners, community based interests, and residents to expand upon best practices and indicators and also design pragmatic tools for communities and residents to engage with planning regimes and to strengthen networks for engagement with all communities to have a greater footprint in energy services.

AUTHOR CONTRIBUTIONS

The authors fulfilled the following criteria: substantial contributions to the conception or design of the work, or the acquisition, analysis, or interpretation of data for the work. Drafting the work or revising it critically for important intellectual content. Final approval of the version to be published. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

designated to women owned and person of color owned enterprises, for the year 2017 (Locke, 2017). While the percentages leave ample for improvement, the use of specific targets allows for goals to be assessed and dissected.

²We recommend DC to follow the lead of the San Francisco Bay Area’s planning outfit, which provides comprehensive translation and interpretations services, for documents and public meetings respectively. Though DC’s LEP population is significantly smaller than the Bay Area’s—nearly 18% of San Francisco’s population self-identifies as speaking English less than “very well,” compared to only 2% for DC—the nation’s capital still has roughly 10,000 residents who fall into this category and are effectively locked out of participation (Teron, 2016).

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