

INTEGRATING EQUITY INTO CITY CLEAN ENERGY INITIATIVES

Considerations and Resources for U.S.
Local Governments

American Cities
Climate Challenge

RENEWABLES ACCELERATOR

CONTENTS

Introduction	3
Methodology	4
SECTION 1 – Approach for Integrating Equity and Key Definitions.	6
Equity Categories	6
Local Clean Energy Initiatives and Intersections with Equity Categories.	6
Using Data to Support the Development of Equitable Clean Energy Initiatives	8
Developing Goals and Targets for Clean Energy Initiatives.	9
Target-Setting in Action—An Example of an Initiative to Lower Energy Burden	10
SECTION 2 – Applying Equity Considerations to Clean Energy Initiatives	11
Clean Energy Planning	11
Clean Energy Funding.	12
Government Off-Site Power Purchase Agreements (PPA)	13
Government On-Site Solar Development	14
Clean Energy Projects	15
Residential Solar Programs	16
Community Solar Programs.	17
SECTION 3 – Tools and Resources.	18
Endnotes	20

AUTHORS AND ACKNOWLEDGEMENTS

This paper was developed by Ben Foster of Fosterra Inc. and Lacey Shaver and Zach Greene of World Resources Institute (WRI).

The authors would like to thank the community-based organizations, city staff, frontline communities, and Black, Indigenous, and people of color who are leading the way toward a more equitable and sustainable future in communities across the U.S. and who inspired this paper.

We also want to acknowledge the following individuals and organizations for their support and prior work that informed the approach used to create this paper. We thank Jon Crowe, Rich Freeh, and Kathryn Wright of the Urban Sustainability Directors Network (USDN); Jeremy Hays of Upright Consulting; Denise Fairchild of Emerald Cities Collaborative; Stephen Abbott and Matthew Popkin of RMI; and Lori Bird, Eric Mackres, Carla Walker, and Ted Wong of WRI for their guidance, insight, and peer review.

This paper was made possible thanks to the generous support of Bloomberg Philanthropies, which provides funding for the [American Cities Climate Challenge Renewables Accelerator](#), a joint project of WRI and RMI.

Cover Photo: U.S. Department of Energy/Flickr

INTRODUCTION

Cities across the United States are making commitments to transition to [100% renewable energy](#) and to [center equity](#) in city programs, policies, and services.¹ These two goals are inextricably linked, as there is no environmental sustainability without social equity. Black, Indigenous, and people of color (BIPOC) and low-income communities are [disproportionately affected](#) by climate change due to historic economic and land-use inequalities.² Clean energy initiatives provide cities opportunities to make progress toward both renewable energy and equity goals; however, to date, these initiatives have inequitably [benefited](#) whiter, more affluent neighborhoods.³

This paper offers an approach and considerations for integrating equity into city clean energy initiatives, along with case studies and resources for getting started. Section 1 provides an overview of developing equitable clean energy initiatives along with definitions and example goals, targets, and indicators that can be used for consistent and comprehensive planning and implementation. Section 2 explores seven common types of clean energy initiatives pursued or supported by city governments, with high-level observations based on equity-focused case study reviews. Section 3 shares additional resources from experts nationwide as well as recommendations for further research and actions when incorporating equity into local initiatives. Finally, a companion spreadsheet, [Selected Examples of Leading Equitable Clean Energy Initiatives](#), provides case studies from leading cities and states across the United States.

Findings from this paper are broadly applicable and indicative of the challenges and opportunities ahead:

- Key equity considerations and potential impacts of a clean energy initiative vary based on the type of initiative and the way the initiative is planned and implemented. Cities must consider how to layer clean energy initiatives to meet and maximize different equity outcomes.
- There is a general life cycle for clean energy initiatives, starting with planning and followed by program/project development and implementation. There are meaningful opportunities to center and advance procedural, structural, distributional, and transgenerational equity within each phase of an initiative's life cycle.
- Local governments cannot develop effective equity-focused clean energy initiatives alone and must work in close partnership with community-based organizations (CBOs) and frontline and BIPOC community members across an initiative's life cycle.
- Conducting a baseline data assessment is a critical first step for developing a clean energy initiative, but it is not a substitute for in-person engagement, which is necessary to develop a full understanding of frontline and BIPOC community member needs and priorities.
- Local governments, CBOs, and frontline and BIPOC community members should co-develop equity goals, indicators, and targets to define and measure the success of an initiative. Regular measurement and public communication of progress are crucial to building trust and ensuring the effective achievement of desired equity outcomes.
- Dedicated funding is essential for authentic community engagement during planning and implementation of projects and programs, as well as for direct investment in clean energy initiatives that result in positive equity outcomes.
- Integrating equity into clean energy initiatives may be new for cities, and it may be accompanied by challenges, but there are successful examples from which cities can learn and scale, as seen in the case studies and resources referenced in this paper.

METHODOLOGY

This was produced as part of Bloomberg Philanthropies’ American Cities Climate Challenge (ACCC), a program that provides more than 150 U.S. local governments with powerful new resources and access to cutting-edge support to help them meet their carbon reduction goals.

The paper was developed as a resource for local government sustainability staff and leaders, local stakeholders, utility staff, and clean energy service providers who want to center equity in local clean energy initiatives. It is intended to provide an approach to and initial considerations for integrating equity into clean energy initiatives to improve communitywide outcomes and ensure that frontline and BIPOC communities benefit from the clean energy transition.

We began our research with a nationwide screen of clean energy initiatives with community-level impact and equity-specific components. From this screen, we identified a list of leading city equitable clean energy plans, programs, and projects, as well as several state programs with lessons applicable to cities. (See Table 1 below). We grouped each initiative by type and applied an equity lens to each, identifying how each effort can contribute to four types of equity—procedural, structural, distributional, and transgenerational. Guidance in this paper is based on findings and lessons learned from these examples.

Table 1: Examples of Leading Equitable Clean Energy Initiatives

INITIATIVE TYPE	INITIATIVE NAME	BRIEF DESCRIPTION
Clean Energy Planning	Clean Energy DC⁴	The creation of Washington, DC’s comprehensive clean energy plan was unique in that it included an evaluation of the risks that technical, data-driven recommended actions present to equity. Each of the plan’s proposed actions was analyzed to see if it would exacerbate existing inequities or create new ones, and all subsequent amendments were explained in the plan’s equity section.
Clean Energy Planning	Ann Arbor A2Zero Carbon Neutrality Plan⁵	The City of Ann Arbor’s ambitious carbon neutrality plan includes transitioning to 100% renewable electricity by 2030. A weighted framework was used to prioritize the actions with the greatest co-benefits, including benefits to the most vulnerable community members.
Clean Energy Planning	Austin Climate Equity Plan 2020⁶	The City of Austin, Texas’ plan to reach net zero greenhouse gas (GHG) emissions by 2040 has a specific focus on equity and a leading approach to community collaboration.
Clean Energy Funding	Portland Clean Energy Community Benefits Fund (PCEF)⁷	The Portland Clean Energy Fund was created by a 2018 ballot measure that established a new dedicated funding source and associated grant program for climate action that advances racial and social justice. All grants must benefit certain priority populations, and funding recommendations are provided by a grant committee made up of residents who represent the priority populations.
Government Off-Site Power Purchase Agreement (PPA)	Cincinnati Off-Site PPA⁸	In 2019, the City of Cincinnati signed a large-scale solar PPA to meet municipal and communitywide renewable energy goals. Over half of the project’s 100 megawatts (MW) are set aside for the city’s community choice aggregation (CCA) program to power homes and local businesses.
Government Off-Site Power Purchase Agreement (PPA)	Chicago Request for Proposal (RFP) for Renewable Energy Supply Contract⁹	In 2020, the City of Chicago issued one of the largest and most innovative renewable energy solicitations by a city to date. The RFP promotes creative and flexible solutions with a minimum requirement for new renewables project development. It also lays out how equity and community benefits are to be included within proposals.

Table 1: Examples of Leading Equitable Clean Energy Initiatives (Cont.)

INITIATIVE TYPE	INITIATIVE NAME	BRIEF DESCRIPTION
Government On-Site Solar Development	Localizing Buffalo's Renewable Energy Future Initiative ¹⁰	The City of Buffalo partnered with Erie County, the University at Buffalo (UB), SUNY Buffalo State, and SUNY Erie on an RFP for 100 MW of on-site solar installed on parcels throughout the community. This large-scale, collaborative on-site PPA was led by UB and included a significant local jobs component.
Clean Energy Projects	East Bay Clean Energy Peaker Plant Replacement ¹¹	East Bay Clean Energy, a community choice aggregator, replaced a gas-powered peaker plant with utility-scale battery storage in a low-income, environmental justice community in Oakland. Fossil fuel peaker plants are used to meet infrequent high electricity demand, but disproportionately emit air pollution that adversely affects health outcomes for nearby residents.
Clean Energy Projects	New York City Housing Authority (NYCHA) ACCESSolar Program ¹²	To ensure that small businesses and nonprofits benefit from NYCHA's commitment to siting 25 MW of renewables on its properties by 2025, NYCHA created a program for community solar projects built by local CBOs and installers. Projects must employ NYCHA residents, develop career-path green jobs, and enroll low- and moderate-income (LMI) customers as subscribers, including NYCHA residents.
Residential Solar Programs	Connecticut Solar for All Program ¹³	This statewide low-cost solar financing program for LMI residents is run by the Connecticut Green Bank. It provides an elevated LMI solar incentive and public support for solar providers that enter the LMI solar market.
Residential Solar Programs	DC's Solar for All Program ¹⁴	This program aims to provide 100,000 LMI families with the benefits of locally generated clean energy. Washington, DC, is partnering with organizations within the District to offer no-cost solar installations to single-family, income-eligible households and to develop community solar programs with guaranteed utility bill savings for renters and residents in multifamily homes.
Community Solar Programs	NY-Sun Solar for All Program ¹⁵	This state-administered utility bill assistance program provides free community solar subscriptions for income-qualified utility customers and bill credits of up to \$180 annually.

The results of the screen and corresponding equity assessment are available in a companion spreadsheet, titled [Selected Examples of Leading Equitable Clean Energy Initiatives](#). The spreadsheet includes descriptions with links for each initiative, information on administration and funding sources, and an assessment of how each equity focus area has been addressed or incorporated.

The authors use the following terms throughout the paper:

- “City” or “cities” to refer to a local government entity (e.g., city, county, township) or entities, respectively.
- “Local,” “community,” and “communitywide” to describe efforts designed to benefit all residents within a local government’s jurisdiction.
- “Frontline community” to describe segments of a city or county’s population that have been or will be more vulnerable to the [impacts of climate change](#).¹⁶ Frontline communities often comprise BIPOC and low-income residents because of historic and ongoing racism and classism.

SECTION 1 – APPROACH FOR INTEGRATING EQUITY AND KEY DEFINITIONS

EQUITY CATEGORIES

When designing equity-focused clean energy initiatives, the first step is to develop a shared city and community understanding and definition of the word “equity” and its various dimensions. The equity categories below build off [definitions](#) developed by the Urban Sustainability Directors Network (USDN) in consultation with cities and community organizations¹⁷:

- **Procedural Equity** creates inclusive, accessible, authentic engagement and representation in the development and/or implementation of clean energy initiatives. This includes developing comprehensive communitywide data and needs assessments and proactively including frontline and BIPOC community members in planning and program development. This also requires provision of resources and training that allow for regular and meaningful participation of these community members.
- **Structural Equity** empowers decision-making that accounts for historical, cultural, and institutional dynamics and structures that have routinely advantaged privileged groups in society and resulted in chronic, cumulative disadvantage for marginalized groups, and it institutionalizes accountability. This includes the specific design, rules, and management of programs to ensure that there is sufficient allocation of resources, opportunities, and investments to drive leadership and participation by frontline and BIPOC communities.
- **Distributional Equity** provides clean energy initiatives that result in an equitable distribution of benefits and burdens across all segments within a city, prioritizing those with the highest need. This includes the distribution of both economic and environmental benefits to frontline and BIPOC community members as well as avoiding potential negative impacts.
- **Transgenerational Equity** ensures that decisions consider generational impacts, don’t result in unfair burdens on future generations, and potentially establish long-lasting benefits in

historically marginalized community segments. This includes the creation of value across community organizations and local businesses, and frontline and BIPOC community member ownership of clean energy assets.

Cities and communities can build off these definitions and adjust them to meet local contexts. Once a shared understanding of equity has been reached, city staff and community members must consider how potential clean energy initiatives can support broader communitywide equity goals and desired outcomes and then identify targets and metrics to track progress.

LOCAL CLEAN ENERGY INITIATIVES AND INTERSECTIONS WITH EQUITY CATEGORIES

Cities have a broad menu of clean energy initiatives that they can choose to implement, such as communitywide renewable energy plans, residential solar programs, and development of renewables projects to power municipal operations. These initiatives have different equity considerations and potential impacts based upon the initiative type and the way the initiative is planned and implemented. For example, community-facing programs like residential solar programs may more directly benefit a larger number of frontline and BIPOC community members than an off-site solar installation for municipal use. Additionally, two solar installations with the same capacity can have very different community impact depending on where the project is sited and whether the contract is structured to maximize community benefits.

Clean energy initiatives tend to share common life cycles—from initial planning to implementation through long-term impact. Cities must consider how to include procedural, structural, distributional, and transgenerational equity into each life cycle phase to ensure the most equitable outcomes. Cities should also consider how to layer initiatives to meet and maximize different equity outcomes.

The timeline for realizing these outcomes will differ depending on the equity category, as well as the type of initiative and where it is in its life cycle. For example, clean energy planning can support beneficial short-term procedural equity outcomes, but plans themselves may not create distributional equity until the actions they outline are implemented, which could take years.

Each city will have its own equity priorities based on its historical circumstances, community priorities, and forward-looking goals. Because clean energy initiatives are a subset of all possible actions that cities may take, goal and target setting for these efforts should be aligned with broader

communitywide needs and equity goals. It is crucial that authentic collaboration with frontline and BIPOC community members begins at the initial development phase when problems and needs are being defined. This should include CBOs and representatives from frontline and BIPOC communities working in coordination with various city staff members and departments (e.g., sustainability, housing, community and economic development, health, and education) that may be involved in the initiative. Consistent engagement throughout initiative planning and implementation is critical to successfully overcoming challenges that may arise along the way and achieving equitable outcomes.

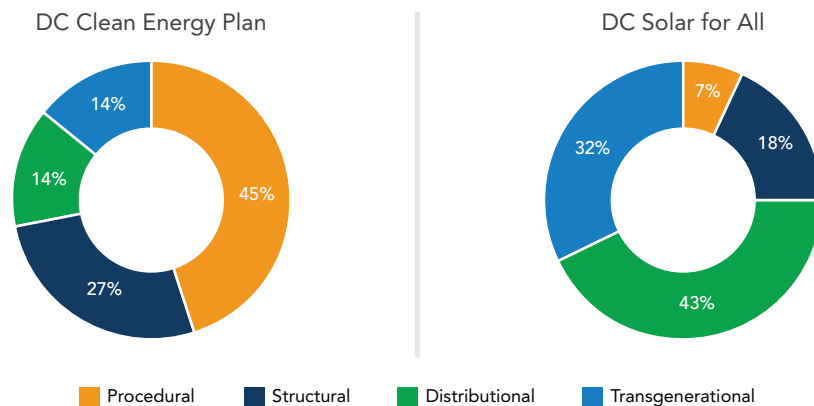
BOX 1: COMPARING EQUITY IMPACT ACROSS CLEAN ENERGY INITIATIVES

In Washington DC, [Clean Energy DC](#) created a comprehensive approach for moving the community to 100% renewable energy; to do so required extensive communitywide stakeholder engagement.¹⁸ This stage of the planning process can and should include deep procedural and structural equity components, but also sets the path for future implementation of specific programs that will provide distributional and transgenerational equity outcomes.

To help address the plan’s stated energy and equity goals, [DC’s Solar for All](#) program focuses squarely on increasing access to clean energy for low- to moderate-income (LMI) residents to advance distributional and transgenerational equity.¹⁹ The District must consider how the program is designed and managed, therefore including some elements of procedural and structural equity as well.

Both initiatives must consider and incorporate all four equity categories in their implementation, however, the relative impact of each initiative differs. The clean energy plan has a greater procedural and structural impact, while the Solar for All program has a greater distributional and transgenerational impact. The charts below demonstrate these differences.

Figure B1: Hypothetical impact across equity categories for two clean energy initiatives in Washington, DC



Note: These graphs are not based on actual data and are instead meant to be illustrative of the relational impact across each equity category for the two initiatives and to underscore how different types of clean energy initiatives will have different effects across equity categories.

Creating a shared understanding of equity and desired community outcomes early in an initiative's life cycle will help ensure alignment with frontline and BIPOC community needs. For example, local job creation and participation by minority, women, and disadvantaged business enterprises (MWDBE) can be important distributional and transgenerational outcomes when planning for clean energy initiatives. However, not all initiatives have the same potential for local impact for these labor-specific outcomes; for example, opportunities to generate local jobs might be limited if the city is purchasing clean power from large-scale remote sources.

USING DATA TO SUPPORT THE DEVELOPMENT OF EQUITABLE CLEAN ENERGY INITIATIVES

A baseline data assessment can help cities and community members assess equity needs, identify stakeholders for equitable representation, define collective goals, associated indicators and targets, and focus programs and projects to maximize impact. Typically, a city's economic development and/or planning department will have access to the information needed to build an initial demographic analysis. Although an important piece of the conversation between city staff and community organizations, data can only provide a certain level of context, and in-person engagement is necessary to develop a full understanding of needs and priorities.

Demographic data to gather in support of initial discussions may relate to the following communitywide segments:

- BIPOC
- Elderly
- Youth
- Recently arrived immigrants
- People with limited English proficiency and literacy
- People with disabilities
- People experiencing homelessness
- People with low income (unemployed/underemployed/minimum wage earners)
- People with a high energy burden (greater than 6% of annual income)

- People with chronic or severe health conditions (e.g., those suffering from asthma)
- People living near polluted sites
- People living in historically disadvantaged neighborhoods (e.g., historically redlined neighborhoods)

In addition to demographic data, cities should consider other data sets that may provide further context or visibility into local equity concerns and issues. For example, cities can overlay demographic data with data sets that paint a fuller picture of community needs and opportunities to better leverage and tailor clean energy initiatives to achieve broader benefits. Cities can consider incorporating the following data sets into their baseline assessments for clean energy planning:

- Energy burden
- Neighborhoods that were historically redlined
- Pollution exposure (e.g., the location of fossil-fueled power plants, asthma rates, and air quality data)
- Community assets (e.g., community centers, churches, libraries, and schools that may serve as community resilience hubs in times of crisis)
- Data pertaining to existing or future climate impacts (e.g., flood zones, urban heat islands, and tree cover)

Finally, cities should also consider the primary perspectives and needs that frontline and BIPOC community members might have and how they could benefit from clean energy initiatives, particularly how initiatives might be able to contribute to the health, wealth, and well-being of frontline and BIPOC communities. Working closely with local CBOs can help identify and explore various energy-related perspectives and needs, which can be used to inform program planning, target setting, indicator selection, and prioritization of resources. Perspectives and associated needs to consider include:

- Utility customers (who want affordable, reliable power)
- Underemployed and job seekers (who want a living wage)
- Community members, in general (who want a better outdoor environment, public health benefits, and education)

- Individuals interested in solar (who want access to new programs and solar ownership)
- Residential dwellers (who want comfort, reliability, and clean indoor air)
- Small business owners (who want access to clean energy project development/ownership and lower bills)

DEVELOPING GOALS AND TARGETS FOR CLEAN ENERGY INITIATIVES

City staff, CBOs, and frontline and BIPOC community members should work together to co-develop shared goals and targets based on a baseline data assessment and in-person

engagement and should be sure that indicators are measurable and appropriate for internal and external tracking. It is important to regularly track progress toward targets, review who is benefiting from an initiative, and publicly and transparently communicate findings with the community.

The table below provides examples of potential community goals, key performance indicators, and targets that can be used to measure a clean energy initiative’s progress. This should not be considered a comprehensive list of all equitable energy indicators that cities might want to consider; please see Section 3 for additional tools and resources on developing indicators.

Table 2: Potential goals, indicators, and targets for equitable clean energy initiatives

COMMUNITY GOAL	KEY PERFORMANCE INDICATORS	POTENTIAL TARGETS
Shared Decision-Making	Number of opportunities for and quality of community engagement activities	<ul style="list-style-type: none"> • [X number] of frontline and BIPOC community members in meetings • [X number] of opportunities for authentic co-decision-making with frontline and BIPOC community members • [X percent] of decision-making body is made up of frontline and BIPOC community representatives • Compensation [X dollars] and other support provided to frontline and BIPOC community members to participate in decision-making activities
Equitable Resource Allocation	City staff time and resources allocated to an initiative	<ul style="list-style-type: none"> • Staffing [X number staff-hours] and resource allocation [\$ expenditure] reflect prioritization and goal setting conducted with community stakeholders • Resources provided to community partners are equal to or greater than a certain percentage of overall resources used on the initiative
Equitable Government Contracting	Responses to and awards for government procurements	<ul style="list-style-type: none"> • [X percent] of minority, women, and disadvantaged business enterprise (MWDBE) applicants and awardees • [X dollars] in overall project expenditures with local/regional MWDBE organizations
Quality Job Creation	Number and type of jobs	<ul style="list-style-type: none"> • [X number] of total new high-road jobs²⁰ • A target segment’s share (as a percentage) of new jobs should meet or exceed the segment’s percentage composition within the community population, with potential carve-outs for full-time and/or part-time jobs for union and under-represented groups
Workforce Development and Education	Participation in education and/or workforce training opportunities	<ul style="list-style-type: none"> • [X number] of frontline and BIPOC community members are supported by easily accessible resources • [X number] of workforce training program participants within target community segments • [X number] community education opportunities
Lower Energy Bills	Annual savings per customer and as a percentage of utility costs	<ul style="list-style-type: none"> • Absolute reduction in amount spent on energy by target community segments • Energy burden (% of total income spent on energy) reduction to below the 6% national threshold for high energy burden or to parity with median percentage spent by all other community residents

Table 2: Potential goals, indicators, and targets for equitable clean energy initiatives (Cont.)

COMMUNITY GOAL	KEY PERFORMANCE INDICATORS	POTENTIAL TARGETS
Affordable Access to Clean Energy Programs	Number of program participants	<ul style="list-style-type: none"> • [X number] of frontline and BIPOC community members who are supported by easily accessible resources • [X percent] of program participants from target community segments, which should meet or exceed the segment's percentage composition within the community population. Alternatively, there could be a 100% carve-out for a specific segment • [X number] of clean energy programs available for free, discounted, or through targeted financing mechanisms
Energy Democracy and Ownership of Solar Assets	Renewable resources locally owned by individuals and CBOs	<ul style="list-style-type: none"> • [X number] of assets owned by frontline and BIPOC community members • [X megawatts] of on-site renewables projects located in and owned by frontline and BIPOC communities
Equitable Infrastructure Investment	Expenditure on infrastructure projects	<ul style="list-style-type: none"> • [X dollars] invested/spent on community-supported infrastructure in under-resourced locations • [X percent] of new infrastructure investment within under-resourced locations
Pollution Reduction and Improved Health Outcomes	Reduction in pollutants and sources, by type and location, and improvement in associated health outcomes	<ul style="list-style-type: none"> • [X percent] reduction in pollutant concentrations within frontline and BIPOC communities, to no more than communitywide averages or best-in-region concentrations • [X percent] of population residing within defined radius of polluting facilities and sites • [X percent] improvement in respiratory health outcomes, with reduction in disparities between target community segment and the population as a whole

TARGET-SETTING IN ACTION—AN EXAMPLE OF AN INITIATIVE TO LOWER ENERGY BURDEN

In an example city, the average electricity bill is 3.5% of household income. But residents in the city's frontline communities spend an average of 6.8% of household income on electricity bills. Based on this data, city staff and community members come together to define a shared goal of reducing energy burden (percentage of income spent on electricity) within its frontline and BIPOC communities and set a target for the reduction of energy burden in frontline and BIPOC households to reach parity with the broader community.

Based on this target and with community support, the city reviews different potential clean energy initiatives and decides to work with CBOs and frontline and BIPOC community members to develop a highly subsidized community solar

program for income-eligible households and an expanded energy efficiency program to help lower electricity bills within the community. The city will track the program and its effects throughout its implementation and publicly release quarterly progress reports to be transparent about whether the program is meeting its targets. Ideally, the program participants would see a reduction in the percent of their household income spent on electricity to 3.5% or less, so that it is at or below the average for the broader community.

SECTION 2 – APPLYING EQUITY CONSIDERATIONS TO CLEAN ENERGY INITIATIVES

This section provides summaries of typical clean energy initiatives pursued by city governments across the United States. In the boxes below are things to consider when looking at the potential equity impact of different initiative types, challenges that may arise during implementation and ways to address them, and resource needs. Also included are examples of key performance indicators that

correspond to the community goals and targets for measuring equitable implementation presented in Table 2 in the previous section. To learn more about the case studies that underpin these considerations, readers are encouraged to refer to the companion spreadsheet, [Selected Examples of Leading Equitable Clean Energy Initiatives](#).

CLEAN ENERGY PLANNING

DESCRIPTION	Clean Energy Planning includes citywide or regional sustainability and/or GHG emissions reduction plans, clean energy or climate impact plans, and specific local energy-related planning efforts.
EQUITY IMPACT OVERVIEW	Clean Energy Planning can enable deep engagement with frontline and BIPOC communities, including bringing to the surface and addressing specific community needs (procedural and structural equity). Planners and facilitators should allocate staffing and resources to proactively recruit and support participation and leadership from frontline and other marginalized community members throughout the planning process to ensure that they are fully engaged in decision-making and prioritizing future clean energy programs and projects (structural equity). Distributional and transgenerational equity are typically addressed as outcomes to be achieved by implementation of clean energy-related plans but are not directly affected by creation of a plan.
POTENTIAL CHALLENGES	<ul style="list-style-type: none"> • Cities often lack staff with expertise to recruit and authentically engage key frontline and BIPOC communities and/or resources to provide staff with training and support. • Planning processes require understanding of technical concepts, so authentic engagement should include the education necessary for meaningful participation. Planners should also strive to reduce the use of technical jargon and frame scenarios and options in vivid, meaningful language that is understandable by all participants. • Planning timelines are sometimes accelerated, which limits the time allowed for authentic inclusion of community stakeholders. • City contracting processes can restrict the ability to provide compensation to CBOs and individual participants. • Most cities don't have established procedures for shared decision-making or delegating true decision-making authority to non-city staff. • Proposed actions may have unintended negative equity consequences. Planners and other stakeholders should undertake an analysis of how proposed actions may affect equity. This analysis can be used to prioritize and adjust actions before inclusion in a final plan.
RESOURCE NEEDS AND POTENTIAL FUNDING SOURCES	<ul style="list-style-type: none"> • Cities need to allocate sufficient time and budget for initial outreach, engagement, training, stipends, and meetings for deep, authentic engagement with frontline and BIPOC community members. • Some options for incorporating staff time and budget needs include building engagement into existing planning budgets (i.e., comprehensive/general plan updates), pursuing state and federal planning grants, and leveraging existing efforts by local CBOs and national nongovernmental organizations.
KEY PERFORMANCE INDICATORS	<ul style="list-style-type: none"> • Number of opportunities for and quality of community engagement activities • City staff time and resources allocated to planning • Participation in education and/or workforce training opportunities

CLEAN ENERGY FUNDING

DESCRIPTION	Clean Energy Funding includes efforts to attract or allocate funding for implementation of Clean Energy Projects and Solar Programs and/or funding-related programs that finance projects, technology, and installations for residents and businesses.
EQUITY IMPACT OVERVIEW	Clean Energy Funding can have a major impact across all equity areas, but specific goals and targets must be built into the design from inception and include frontline and BIPOC community participation. Understanding individual and communitywide hurdles for project financing along with behavioral economics, risks, demand, and costs will help funding-related programs deliver equitable outcomes.
POTENTIAL CHALLENGES	<ul style="list-style-type: none"> ● Effective creation and implementation of equitable funding-related programs can be complex due to requirements stemming from funding sources and financial oversight. ● Frontline and BIPOC communities face financial challenges related to historic racial and economic discrimination, such as lower incomes or lack of access to credit, which may influence their ability to participate in incentive and/or rebate programs. As a result, funding may not always reach the intended audience. ● Authentic engagement with frontline and BIPOC community stakeholders is essential to ensure that funding goes to projects and solutions that align with community needs, but this step is often overlooked. ● Most cities don't have established procedures for shared decision-making that can be used in making funding allocation decisions. ● Many clean energy funding opportunities are from time-limited or one-time sources, and cities struggle to identify long-term, dedicated funding that would allow for projects and programs with greater impact.
RESOURCE NEEDS AND POTENTIAL FUNDING SOURCES	<ul style="list-style-type: none"> ● Access to and expertise with various funding sources. ● Staff with experience and expertise in engaging CBOs and supporting their funding initiatives. ● Potential funding sources for larger-scale programs include activity-driven assessments or fees, utility settlements, green banks, and issuing green bonds.
KEY EQUITY PERFORMANCE INDICATORS	<ul style="list-style-type: none"> ● Number of opportunities for and quality of community engagement activities ● Number of program participants ● Participation in education and/or workforce training opportunities ● Savings per year per customer and as a percentage of utility costs ● Expenditure on infrastructure projects ● Renewable resources owned by individuals and CBOs

GOVERNMENT OFF-SITE POWER PURCHASE AGREEMENTS (PPA)

DESCRIPTION	Government Off-Site PPAs are large-scale contracts for clean electricity and/or renewable energy certificates (RECs) produced by a resource not located on government property and typically, but not always, remote from the local community.
EQUITY IMPACT OVERVIEW	Government Off-Site PPAs can have some impact on distributional equity and transgenerational equity through the intentional siting of new renewable resources and inclusion of equity criteria, like requirements for MWDBE participation and job creation in RFPs and resulting contracts. Typically, these PPAs are planned as part of a renewable power supply target for municipal operations and should incorporate overall communitywide impact, economic benefits, and potential tradeoffs. Long-term environmental benefits are also possible depending on the location of existing fossil fuel power plants to be retired or remediation and reuse of polluted areas.
POTENTIAL CHALLENGES	<ul style="list-style-type: none"> • PPAs are typically pursued as a low-cost clean energy option by city operational and/or procurement staff who may not be familiar with approaches to increase equity impact within their contracts. • The underlying renewable projects may be remotely located and have minimal impact on the local community or equity targets; however, cities can incorporate equity aspects into PPA contracting requirements through requirements for local or MWDBE hiring, job training programs, or requiring community engagement in project planning stages. • Certain equitable project criteria may raise the cost of a project. This can be an issue: (1) if a city is required to go with the lowest cost provider and that provider doesn't offer the desired benefits or (2) if these additional costs increase the project costs above a break-even price or the price that the city is willing and able to pay.
RESOURCE NEEDS AND POTENTIAL FUNDING SOURCES	<ul style="list-style-type: none"> • Cities can benefit from reaching out to peers to learn about best practices and engaging with renewables procurement experts and legal counsel, as needed. • Staff time should be allocated appropriately, and a budget is needed for legal, financial, and technical support during contracting. • Cities can consider modifying municipal procurement requirements to better align with and support equity and climate goals (e.g., requiring local hiring in municipal contracts).
KEY EQUITY PERFORMANCE INDICATORS	<ul style="list-style-type: none"> • Responses to and awards for government procurements • Expenditure on infrastructure projects • City staff time and resources allocated to an initiative • Number and type of jobs • Participation in education and/or workforce training opportunities • Reduction in pollutants and sources, by type and location, and improvement in associated health outcomes

GOVERNMENT ON-SITE SOLAR DEVELOPMENT

DESCRIPTION	Government On-Site Solar Development includes projects that are co-located with government facilities and may be either directly purchased systems or financed over a long period.
EQUITY IMPACT OVERVIEW	Government On-Site Solar Development of projects can directly support distributional equity via local job training and employment with strong MWDBE participation. New construction on municipal properties provides opportunities for investment in facility upgrades along with training and interaction with new technologies. On-site projects can be part of clean energy project prioritization with the involvement of frontline and BIPOC community stakeholders, helping to address procedural and structural equity.
POTENTIAL CHALLENGES	<ul style="list-style-type: none"> ● On-site solar projects are typically managed by facilities and/or procurement staff that may not be familiar with approaches to increase the equity impacts from construction projects. ● Selecting experienced MWDBE development partners and ensuring local job creation can be challenging for many reasons, including but not limited to legal limitations around using race as a consideration in contracting and a smaller pool of eligible BIPOC solar professionals, due to historic discrimination.
RESOURCE NEEDS AND POTENTIAL FUNDING SOURCES	<ul style="list-style-type: none"> ● Cities can benefit from reaching out to peers for best practices and engaging with solar construction and procurement experts to learn how to tailor RFPs to attract the desired bidders. ● Up-front planning and procurement resources are essential, and staff time needs to be allocated appropriately. ● For the full construction costs of new solar systems, various funding options may be available, including facility upgrade capital budgets, state or federal grants, third-party financing (for loans, leases, and PPAs), and municipal/green bonds.
KEY EQUITY PERFORMANCE INDICATORS	<ul style="list-style-type: none"> ● Responses to and awards for government procurements ● Number and type of jobs ● Participation in education and/or workforce training opportunities

CLEAN ENERGY PROJECTS

DESCRIPTION	Clean Energy Projects include any efforts to increase deployment of clean energy technologies (e.g., energy efficiency, electrification, demand response, battery storage, etc.) for residential homes and businesses, but excluding solar-related technologies, which are covered separately on the following page.
EQUITY IMPACT OVERVIEW	Clean Energy Projects are often pursued during the implementation of Clean Energy Plans and can provide significant opportunities for distributional and transgenerational equity. To address procedural and structural equity in the community, cities must engage with frontline and BIPOC residents from the beginning to understand their needs and craft appropriate project goals and prioritization. The development and deployment approach must be designed collaboratively to ensure the benefits reach frontline and BIPOC community segments and increase the likelihood of success with opportunities for asset ownership and direct environmental benefits (distributional and transgenerational equity).
POTENTIAL CHALLENGES	<ul style="list-style-type: none"> ● Identifying suitable project sites, viable funding options, and experienced partners are frequent challenges during clean energy project development. ● City staff and community stakeholders may not be familiar with complex or new technologies, operational characteristics, and the risks for deployment on a large scale. This can lead to missed opportunities to creatively deploy technology in new ways to achieve community co-benefits. ● Many clean energy projects, especially those that involve tax incentives or rebate programs, have benefited more affluent community members, so projects intended to support LMI and frontline and BIPOC communities need to be tailored to meet these communities' unique challenges and needs.
RESOURCE NEEDS AND POTENTIAL FUNDING SOURCES	<ul style="list-style-type: none"> ● Frontline and BIPOC community engagement from inception through completion is necessary, but it is often overlooked and under-resourced. ● Projects need sources of funding, which can come from a variety of options, including state or federal grants, utility programs or settlements, third-party financing (for loans, leases, and PPAs), and municipal/green bonds.
POTENTIAL METRICS	<ul style="list-style-type: none"> ● Number of program participants ● Expenditure on infrastructure projects ● Savings per year per customer and as a percentage of utility costs ● Participation in education and/or workforce training opportunities ● Number and type of jobs ● Reduction in pollutants and sources, by type and location, and improvement in associated health outcomes

RESIDENTIAL SOLAR PROGRAMS

DESCRIPTION	Residential Solar Programs include any effort to increase deployment of solar on residential homes, including “Solarize” community bulk purchase campaigns, incentives, and special programs (but not including Community Solar).
EQUITY IMPACT OVERVIEW	Residential Solar Programs have high levels of direct engagement and impact on participating individuals and can address distributional equity and transgenerational equity. Frontline and BIPOC communities tend to live in older, less efficient housing and face higher energy burdens , so Residential Solar Programs have the potential to make a significant impact when well-structured. ²¹ Procedural and structural equity should be incorporated into the planning and program design phases. There may be a subset of frontline and BIPOC community members who live in homes that cannot effectively participate (e.g. multifamily housing, rented units, or homes with roofs unsuitable for hosting a solar array). To address these concerns, Residential Solar Programs can be paired with Community Solar Programs to enable a broader base of participation.
POTENTIAL CHALLENGES	<ul style="list-style-type: none"> • Analysis of community demographic data, housing stock, and barriers to adoption are important in tailoring program design for frontline and BIPOC community participation, but these are often overlooked in favor of a budget-driven approach (e.g., allocating the available money on a first-come, first-served basis rather than understanding communitywide needs then targeting outreach.) • Frontline and BIPOC residents often face financial barriers to participating in and benefiting from incentive or rebate-based Residential Solar Programs (e.g., limited access to credit, lower credit scores and/or income, and limited tax equity).²² • Frontline and BIPOC communities may have been the victims of predatory lending schemes, which could result in hesitations around participating in programs that sound “too good to be true.” • Even controlling for income, frontline and BIPOC communities have lower uptake of solar and should be prioritized for Residential Solar Programs.²³
RESOURCE NEEDS AND POTENTIAL FUNDING SOURCES	<ul style="list-style-type: none"> • Cities need to understand barriers to frontline, BIPOC, and LMI participation in Residential Solar Programs and develop programs to specifically address local barriers. Deep engagement with CBOs is essential to success. • Resources are needed for city staff and trusted local partners to conduct effective marketing and outreach to increase awareness of and participation in programs. • Funding sources are needed to provide program incentives and/or financing. Fully subsidizing participation for LMI households may be needed to achieve the desired impacts. • Potential funding sources include leveraging existing utility programs (often funded by state-approved use of ratepayer funds), franchise agreements, settlements, green banks, community-based funding programs, and state or federal grants.
KEY EQUITY PERFORMANCE INDICATORS	<ul style="list-style-type: none"> • Renewable resources owned by local individuals and CBOs • Savings per year per customer and as a percentage of utility costs • Number of program participants • Reduction in pollutants and sources, by type and location, and improvement in associated health outcomes • Expenditure on infrastructure projects • Number and type of jobs • Participation in education and/or workforce training opportunities

COMMUNITY SOLAR PROGRAMS

DESCRIPTION	Community Solar Programs allow residents and businesses to subscribe to a solar installation located within or nearby to their community and receive the renewable electricity generated. This type of initiative includes any efforts to increase deployment of community solar systems (locally or regionally) and encourage residents and businesses to subscribe (or purchase shares).
EQUITY IMPACT OVERVIEW	Community Solar Programs overcome many LMI barriers to adoption in Residential Solar Programs, such as a lower homeownership rate or limited access to credit, and thus can reach a larger segment of frontline and BIPOC communities in most cities. Distributional equity benefits are realized primarily by subscribers in the form of cost savings and access to a form of solar ownership. Structural equity can be addressed with a collaborative, frontline and BIPOC community-driven approach to program development and outreach efforts.
POTENTIAL CHALLENGES	<ul style="list-style-type: none"> ● Community solar projects require enabling legislation (e.g., virtual net metering) at the state level, which means it is not an initiative available to all cities. ● Some community solar projects are developed in more remote regions outside city limits, which could limit local job creation. ● Existing utility tariffs, regulatory structures, and cost-sharing methodologies can decrease potential access to community solar programs. ● Participation in a community solar project may cost a premium, and there may be hidden fees associated with joining or leaving. ● Members of the community may not own the asset if it is a utility-owned program, which will potentially diminish both the benefits to residents and energy democracy.
RESOURCE NEEDS AND POTENTIAL FUNDING SOURCES	<ul style="list-style-type: none"> ● Community solar program design can be complex. Effective policy and program design require experienced partners and project developers. ● Outreach to and engagement of subscribers in frontline and BIPOC community segments requires an informed and sustained effort by trusted CBOs and stakeholders. ● Potential funding sources for planning and outreach efforts can come from community solar developers, utility programs, community development financial institutions (CDFIs), philanthropy, state funds, and equity-based grant programs. Other innovative ways to reduce the costs of a system can be implemented, such as monetizing shaded parking provided by a solar parking canopy.²⁴
KEY EQUITY PERFORMANCE INDICATORS	<ul style="list-style-type: none"> ● Savings per year per customer and as a percentage of utility costs ● Number of program participants ● Participation in education and/or workforce training opportunities ● Expenditure on infrastructure projects ● Number and type of jobs ● Renewable resources owned by local individuals and CBOs

SECTION 3 – TOOLS AND RESOURCES

City leaders are increasingly incorporating equity and inclusive frontline and BIPOC community participation into clean energy planning and program decisions. At each step along the way—from initial discussions and prioritization through program implementation—there are opportunities to integrate equity and maximize community co-benefits to those who need them most. Cities

can leverage an increasing body of knowledge and community of practice to improve their focus on equity and accelerate progress.

Below is a selection of tools and resources for cities looking to integrate equity into clean energy initiatives, mapped alongside the step in the process when they might be most useful.

Table 3: Selected tools and resources for incorporating equity into city clean energy initiatives

STEPS TO INCORPORATE EQUITY IN CITY CLEAN ENERGY INITIATIVES	SELECTED TOOLS AND RESOURCES
Build city government capacity to incorporate equity into clean energy initiatives	<ul style="list-style-type: none"> • WRI article 3 Hurdles to Racial Justice in Clean Energy²⁵ • USDN Equity Foundations Training modules²⁶ • USDN report Equity in Sustainability²⁷ • USDN/Cadmus' Guidebook on Equitable Clean Energy Program Design for Local Governments and Partners²⁸ • Initiative for Energy Justice's The Energy Justice Workbook²⁹
Incorporate equity into climate and energy planning	<ul style="list-style-type: none"> • Greenlining Institute's Making Equity Real in Climate Adaptation and Community Resilience Policies and Programs: A Guidebook³⁰ • WRI, Greenlink Analytics, and USDN's Broadly Beneficial Clean Energy Planning three-part webinar training series³¹ • American Planning Association's Planning for Equity Policy Guide³² • USDN's Guide to Equitable, Community-Driven Climate Preparedness Planning³³
Authentically include the community in decision-making and target-setting	<ul style="list-style-type: none"> • USDN's From Community Engagement to Ownership³⁴ • Emerald Cities Collaborative's Energy Democracy Scorecard and Flipbook³⁵ • Greenlink Analytics' Process Guide for City-Community Collaboration³⁶ • Sierra Club's Shared Accountability Guide and Framework³⁷
Use data and analytics to support the understanding of community needs	<ul style="list-style-type: none"> • The appendix of Sierra Club's Shared Accountability Guide³⁸ • The Center for Neighborhood Technology's H+T Index includes neighborhood-level GHG emission estimates³⁹ • WRI/USDN/Greenlink Analytics' Broadly Beneficial Clean Energy Planning examples for 12 cities with calculator tools⁴⁰ • Greenlink Analytics' Equity Map (subscription required)⁴¹
Develop indicators and set targets with the community	<ul style="list-style-type: none"> • Emerald Cities Collaborative's Energy Democracy Scorecard⁴² • The Initiative for Energy Justice's Justice in 100 Metrics Report⁴³ • Sierra Club's Shared Accountability Guide⁴⁴ • American Council for an Energy-Efficient Economy' (ACEEE) Local Energy Self-Scoring Tool⁴⁵ • Zero Cities Project and Race Forward's Equity Assessment Tool⁴⁶

Table 3: Selected tools and resources for incorporating equity into city clean energy initiatives (Cont.)

STEPS TO INCORPORATE EQUITY IN CITY CLEAN ENERGY INITIATIVES	SELECTED TOOLS AND RESOURCES
Find others that are traveling along the same path	<ul style="list-style-type: none"> ● Selected examples of Leading Equitable Clean Energy Initiatives⁴⁷ ● Clean Energy States Alliance's Directory of State Low- and Moderate-Income Clean Energy Programs⁴⁸ ● Clean Energy States Alliance's Solar with Justice: Strategies for Powering Up Under-Resourced Communities and Growing an Inclusive Solar Market⁴⁹ ● Race Forward's Building the We: Healing Informed Governing for Racial Equity in Salinas⁵⁰ ● USDN's listing of equity resources⁵¹ ● ACEEE's Energy Equity Initiative scorecards⁵² ● National League of Cities' (NLC) Repository of City Racial Equity Policies and Decisions⁵³
Use templates and tools for equitable implementation	<ul style="list-style-type: none"> ● WRI/RMI's American Cities Climate Challenge Renewables Accelerator procurement guidance with examples of how to include community benefits in renewables RFPs and contracts⁵⁴ ● Yale Environment360 articles on energy equity and solar power for low-income communities⁵⁵
Maintain focus on equity goals in program implementation	<ul style="list-style-type: none"> ● Emerald Cities Collaborative resources to ensure that minority businesses are beneficiaries of clean energy projects⁵⁶
Identify partners and potential funding sources	<ul style="list-style-type: none"> ● WRI/RMI American Cities Climate Challenge Renewables Accelerator Federal Funding Opportunities for Local Decarbonization (FFOLD) tool⁵⁷ ● U.S. Department of Energy's Environmental Justice resources⁵⁸ ● B-Corp Climate Justice resources⁵⁹ ● Rockefeller Foundation commitments⁶⁰

ENDNOTES

- 1 “Committed,” Sierra Club, accessed September 2021, <https://www.sierraclub.org/ready-for-100/commitments>; “Repository of City Racial Equity Policies and Decisions”, National League of Cities, accessed September 2021, <https://www.nlc.org/resource/repository-of-city-racial-equity-policies-and-decisions/>
- 2 “Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts,” U.S. Environmental Protection Agency, September 2021, www.epa.gov/cira/social-vulnerability-report
- 3 Jeremy Hsu, “Solar Power’s Benefits Don’t Shine Equally on Everyone,” Scientific American, April 4, 2019, <https://www.scientificamerican.com/article/solar-powers-benefits-dont-shine-equally-on-everyone/>
- 4 “Clean Energy DC: The District of Columbia Climate and Energy Action Plan,” Government of the District of Columbia, August 2018, https://doee.dc.gov/sites/default/files/dc/sites/ddoe/page_content/attachments/Clean%20Energy%20DC%20-%20Full%20Report_0.pdf
- 5 “A²Zero Carbon Neutrality Plan,” City of Ann Arbor, Michigan, April 2020, https://www.a2gov.org/departments/sustainability/Documents/A2Zero%20Climate%20Action%20Plan%20_3.0.pdf
- 6 “2020 Austin Climate Equity Plan,” Office of Sustainability, City of Austin, Texas, September 2020, <http://www.austintexas.gov/edims/document.cfm?id=347852>
- 7 “Portland Clean Energy Community Benefits Fund (PCEF),” City of Portland, Oregon, Accessed September 2021, <https://www.portland.gov/bps/cleanenergy>
- 8 “Cincinnati to Construct Nation’s Largest City-Led Solar Project,” Office of the Mayor, City of Cincinnati, Ohio, November 21, 2019, <https://www.cincinnati-oh.gov/mayor/news/cincinnati-to-construct-nation-s-largest-city-led-solar-project/>
- 9 “City of Chicago Announces \$200 Million RFP For Renewable Energy Supplier for All City-Owned Buildings,” Mayor’s Press Office, City of Chicago, Illinois, September 2, 2020, https://www.chicago.gov/city/en/depts/mayor/press_room/press_releases/2020/september/RenewableEnergyRFP.html
- 10 “Localizing Buffalo’s Renewable Energy Future,” UB Sustainability, University at Buffalo, accessed September 2021, buffalo.edu/sustainability/SustainabilitySpots/Energy/localizing-buffalo-s-renewable-energy-future.html
- 11 “Vistra Announces Expansion of Previously Announced Oakland Battery Energy Storage Facility,” East Bay Community Energy, April 15, 2020, <https://ebce.org/news-and-events/vistra-announces-expansion-of-previously-announced-oakland-battery-energy-storage-facility/>
- 12 “ACCESSolar: Community Solar Gardens at NYCHA,” New York City Housing Authority, accessed September 2021, <https://www1.nyc.gov/site/nycha/about/accessolar.page>
- 13 “Solar For All Program,” Connecticut Green Bank, accessed September 2021, <https://www.ctgreenbank.com/solarforall/>
- 14 “Solar For All,” Department of Energy and Environment, Government of the District of Columbia, accessed September 2021, <https://doee.dc.gov/node/1226501>
- 15 “Solar For All,” New York State Energy Research and Development Authority, accessed September 2021, <https://www.nyserda.ny.gov/All-Programs/Programs/NY-Sun/Solar-for-Your-Home/Community-Solar/Solar-for-All>
- 16 “Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts,” U.S. Environmental Protection Agency, September 2021, www.epa.gov/cira/social-vulnerability-report
- 17 Angela Park, “Equity in Sustainability: An Equity Scan of Local Government Sustainability Programs,” Urban Sustainability Directors Network, September 2014, https://www.usdn.org/uploads/cms/documents/usdn_equity_scan_sept_2014_final.pdf; Sona Mohnot, Jordyn Bishop, and Alvaro Sanchez, “Making Equity Real in Climate Adaptation and Community Resilience Policies and Programs: A Guidebook,” The Greenlining Institute, August 2019, <https://greenlining.org/wp-content/uploads/2019/08/Making-Equity-Real-in-Climate-Adaption-and-Community-Resilience-Policies-and-Programs-A-Guidebook-1.pdf>

- 18 “Clean Energy DC: The District of Columbia Climate and Energy Action Plan,” Government of the District of Columbia, August 2018, https://doee.dc.gov/sites/default/files/dc/sites/ddoe/page_content/attachments/Clean%20Energy%20DC%20-%20Full%20Report_0.pdf
- 19 “Solar For All,” Department of Energy and Environment, Government of the District of Columbia, accessed September 2021, <https://doee.dc.gov/node/1226501>
- 20 “Building the High Road,” COWS, University of Wisconsin, accessed September 2021, <https://cows.org/>
- 21 Ariel Drehobl, Lauren Ross, and Roxana Ayala, “How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden across the United States,” American Council for an Energy-Efficient Economy, September 2020, <https://www.aceee.org/research-report/u2006>
- 22 Lacey Shaver and Ryan Shea, “Solarize Campaigns: Helping Communities of Color Access Rooftop Solar,” RMI, July 28, 2020, <https://rmi.org/solarize-campaigns-helping-communities-of-color-access-rooftop-solar/>
- 23 Jeremy Hsu, “Solar Power’s Benefits Don’t Shine Equally on Everyone,” Scientific American, April 4, 2019, <https://www.scientificamerican.com/article/solar-powers-benefits-dont-shine-equally-on-everyone/>
- 24 Dr. Cris Eugster, “CPS Energy Solar Programs Overview,” CPS Energy, February 1, 2020, <https://txses.org/wp-content/uploads/2020/02/AM-CPS-SolarPrograms.pdf>
- 25 Ted Wong, et al., “3 Hurdles to Racial Justice in Clean Energy – and 3 Ways U.S. Cities Can Overcome Them,” World Resources Institute, September 2, 2020, <https://www.wri.org/insights/3-hurdles-racial-justice-clean-energy-and-3-ways-us-cities-can-overcome-them>
- 26 “Equity Foundations Training,” Urban Sustainability Directors Network, accessed September 2021, <https://www.usdn.org/equity-foundations-training.html>
- 27 Angela Park, “Equity in Sustainability: An Equity Scan of Local Government Sustainability Programs,” Urban Sustainability Directors Network, September 2014, https://www.usdn.org/uploads/cms/documents/usdn_equity_scan_sept_2014_final.pdf
- 28 Julie Curti, Farrah Andersen, and Kathryn Wright, “A Guidebook on Equitable Clean Energy Program Design for Local Governments and Partners,” The Cadmus Group and Urban Sustainability Directors Network, September 2018, <https://cadmusgroup.com/wp-content/uploads/2018/09/Cadmus-USDN-Equitable-Clean-Energy-Guidebook.pdf?hsCtaTracking=e6fb884f-79d2-4cf9-ba28-63c8d5b64bc5%7C0271547b-346d-49a4-83f5-186b13702d8d>
- 29 Shalanda Baker, Subin DeVar and Shiva Prakash, “The Energy Justice Workbook,” Initiative for Energy Justice, December 2019, <https://iejusa.org/wp-content/uploads/2019/12/The-Energy-Justice-Workbook-2019-web.pdf>
- 30 Sona Mohnot, Jordyn Bishop, and Alvaro Sanchez, “Making Equity Real in Climate Adaptation and Community Resilience Policies and Programs: A Guidebook,” The Greenlining Institute, August 2019, <https://greenlining.org/wp-content/uploads/2019/08/Making-Equity-Real-in-Climate-Adaption-and-Community-Resilience-Policies-and-Programs-A-Guidebook-1.pdf>
- 31 “Equitable Clean Energy Planning,” World Resources Institute, accessed September 2021, <https://www.wri.org/initiatives/equitable-clean-energy-planning>
- 32 Lynn Ross, et al., “Planning for Equity Policy Guide,” American Planning Association, May 2019, https://planning-org-uploaded-media.s3.amazonaws.com/publication/download_pdf/Planning-for-Equity-Policy-Guide-rev.pdf
- 33 Tina Yuen, et al., “Guide to Equitable, Community-Driven Climate Preparedness Planning,” Urban Sustainability Directors Network, May 2017, https://www.usdn.org/uploads/cms/documents/usdn_guide_to_equitable_community-driven_climate_preparedness_high_res.pdf
- 34 “From Community Engagement to Ownership Tools for the Field with Case Studies of Four Municipal Community-Driven Environmental & Racial Equity Committees,” Urban Sustainability Directors Network, et al., https://www.usdn.org/uploads/cms/documents/community_engagement_to_ownership_-_tools_and_case_studies_final.pdf

- 35 “Energy Democracy Scorecard & Flipbook,” Emerald Cities Collaborative, et al., February 3, 2020, <https://weown.it/resource/energy-democracy-scorecard-flipbook>
- 36 Rosa González and Minna Toloui, “Process Guide for City-Community Collaboration,” April 2021, <https://www.equitymap.org/process-guide>
- 37 Kelly Lynch, et al., “Shared Accountability Guide,” December 2020, <https://drive.google.com/file/d/1x9IZ5bNijx7QbPmv8qSYzwpk-hYJdtuv/view>; Kelly Lynch, et al., “Shared Accountability Framework,” December 2020, <https://drive.google.com/file/d/1Ht8uXYXAhSXBUIsUTRcnkFa8cUwxHqHN/view>
- 38 Kelly Lynch, et al., “Shared Accountability Guide,” December 2020, <https://drive.google.com/file/d/1x9IZ5bNijx7QbPmv8qSYzwpk-hYJdtuv/view>
- 39 “H+T Affordability Index,” Center for Neighborhood Technology, accessed September 2021, <https://htaindex.cnt.org/map/>
- 40 “City Energy Equity Maps and Energy Pathway Calculators,” Greenlink Analytics, Urban Sustainability Directors Network and World Resources Institute, July 2020, <https://files.wri.org/s3fs-public/uploads/broadly-beneficial-clean-energy-planning-maps-calculators.pdf>
- 41 “Greenlink Equity Map,” Greenlink Analytics, accessed September 2021, <https://www.equitymap.org/>
- 42 “Energy Democracy Scorecard,” Emerald Cities Collaborative, et al., accessed September 2021, https://emeraldcities.org/wp-content/uploads/2021/04/FINAL_Scorecard.pdf
- 43 Talia Lanckton and Subin DeVar, “Justice in 100 Metrics Report,” Initiative for Energy Justice, January 2021, <https://iejusa.org/wp-content/uploads/2021/03/Justice-in-100-Metrics-2021.pdf>
- 44 Kelly Lynch, et al., “Shared Accountability Guide,” December 2020, <https://drive.google.com/file/d/1x9IZ5bNijx7QbPmv8qSYzwpk-hYJdtuv/view>
- 45 Kate Tanabe, et al., “Local Clean Energy Self-Scoring Tool, Version 5.0,” American Council for an Energy-Efficient Economy, January 2021, <https://www.aceee.org/toolkit/2021/01/local-clean-energy-self-scoring-tool-version-50>
- 46 “Equity Assessment Tool,” Race Forward and Center for Social Inclusion, 2018, https://www.michigan.gov/documents/mpsc_old/Equity_Assessment_Tool_FINAL_1-17-19_681345_7.pdf
- 47 “Selected Examples of Leading Equitable Clean Energy Initiatives,” American Cities Climate Challenge Renewables Accelerator, December 2021, <https://cityrenewables.org/resources/selected-examples-of-leading-equitable-clean-energy-initiatives>
- 48 “Directory of State Low- and Moderate-Income Clean Energy Programs,” Clean Energy States Alliance, accessed September 2021, <https://www.cesa.org/projects/state-energy-strategies-project/directory-of-state-lmi-clean-energy-programs/>
- 49 “Solar with Justice: Strategies for Powering Up Under-Resourced Communities and Growing an Inclusive Solar Market,” Clean Energy States Alliance, et al., December 2019, <https://www.cesa.org/wp-content/uploads/Solar-with-Justice.pdf>
- 50 Jamilah Bradshaw Dieng, Jesús Valenzuela and Tenoch Ortiz, “Building the We: Healing-Informed Governing for Racial Equity in Salinas,” Race Forward, 2016, <https://www.raceforward.org/system/files/pdf/reports/BuildingTheWe.pdf>
- 51 “Innovation Products – Equity,” Urban Sustainability Directors Network, accessed September 2021, <https://www.usdn.org/products-equity.html>
- 52 “Leading with Equity: Centering Equity across ACEEE’s Scorecards,” American Council for an Energy-Efficient Economy, accessed September 2021, <https://www.aceee.org/energy-equity-initiative>
- 53 “Repository of City Racial Equity Policies and Decisions,” National League of Cities, accessed September 2021, <https://www.nlc.org/resource/repository-of-city-racial-equity-policies-and-decisions/>

- 54 "Tools & Resources," American Cities Climate Challenge Renewables Accelerator, accessed September 2021, <https://cityrenewables.org/tools-resources/>
- 55 Maria Gallucci, "Energy Equity: Bringing Solar Power to Low-Income Communities," Yale Environment 360, April 4, 2019, <https://e360.yale.edu/features/energy-equity-bringing-solar-power-to-low-income-communities>
- 56 Emerald Cities Collaborative, accessed September 2021, <https://emeraldcities.org/>
- 57 "Federal Funding Opportunities for Local Decarbonization (FFOLD)," American Cities Climate Challenge Renewables Accelerator, accessed September 2021, <https://cityrenewables.org/resources/federal-funding-opportunities-for-local-decarbonization-ffold/>
- 58 "Environmental Justice," Office of Legacy Management, US Department of Energy, accessed September 2021, <https://www.energy.gov/lm/environmental-justice>
- 59 "What is Climate Justice," B Corp Climate Collective, accessed September 2021, <https://www.bcorpclimatecollective.org/climate-justice-bccc>
- 60 "The Rockefeller Foundation Commits USD1 billion to Catalyze a Green Recovery from Pandemic," The Rockefeller Foundation, October 26, 2020, https://www.rockefellerfoundation.org/news/the-rockefeller-foundation-commits-usd1-billion-to-catalyze-a-green-recovery-from-pandemic/?utm_source

American Cities Climate Challenge

RENEWABLES **ACCELERATOR**