

Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

Table of Contents

Introduction

What is a 100% Renewable Energy Community?

Guidelines for 100% Commitments

<u>Acknowledgements</u>

Appendix: Examples of 100% Renewable Energy Commitments

City Council Resolutions

Climate and Energy Plans

Introduction

The time for 100% clean, renewable energy has come. For too long, low income communities and people of color have borne the burdens of dirty energy in our communities. Rural and suburban workers are witnessing closure of coal plants due to market trends. And from mega-storms to drought and wildfires, communities across the country are beginning to experience the severe impacts of climate change. Local municipal leadership is necessary to shepherd the U.S. towards climate change mitigation and resilience. Numerous <u>studies</u> show that it is possible to eliminate fossil fuels around the globe by the year 2050. <u>Studies</u> of the U.S. align with this global finding and show it is technologically and economically possible to achieve 100% clean energy across the country by 2050 or even sooner. The challenge of this century is to transition to 100% clean, renewable energy in the United States and across the globe. Converting our energy sources to 100% renewable, sustainable energy is critical step in achieving the Greenhouse Gas reductions necessary to avoid the worst impacts of climate change. While not a simple transition, it is one we must pursue now in order to accomplish this transition in time.

What is a 100% Renewable Energy Community?

Local or regional governments can show leadership in our transition to 100% renewable energy by setting a target to move the entire community to 100% clean, renewable energy in all energy use sectors - electricity, transportation, and heating and cooling - and actively pursue a path towards implementation. A number of communities have already transitioned to 100% renewable electricity, and many others have adopted strategies to move towards meeting 100% of their electricity, transportation, and heating and cooling needs from renewable energy sources.



Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

A strong commitment to 100% clean, renewable energy is one that commits to transitioning the entire community to 100% renewable energy (in other words, it covers all energy used within a city-limits). A 100% goal is fully achieved when the amount of energy generated from renewable energy sources in the community (or brought into it) equals or exceeds 100% of the annual energy consumed within that community.

The outcomes of the 100% commitment greatly depend on who within your community signs on. A statement or proclamation in support of 100% clean, renewable energy by a city leader can mark the beginning of a city's commitment to craft a strategy that moves it off of fossil fuels. It serves as a call to action to motivate local stakeholders, begin a conversation, and build a common vision of the city's energy future. Following a statement or proclamation, the city should adopt a binding commitment that includes the guidelines outlined below. To date, cities have adopted this goal through a variety of pathways. Following a Mayoral Commitment, San Francisco, CA integrated a goal of 100% RE into their climate action plan; Pueblo, CO and Moab, UT adopted city council resolutions; and in Burlington, where the community is served by a municipal utility, the city integrated the goal into the utility's integrated resource plan.

Guidelines for 100% Commitments

As a member of the <u>Global 100% Renewable Energy Campaign</u>, our guidelines and recommended actions for achieving a 100% renewable energy align with <u>international criteria</u>, while also taking into consideration examples of community commitments adopted to-date, Sierra Club energy policies, and local and regional factors.

Summary of Guidelines

A community-wide commitment to 100% renewable energy should include the following core elements:

- 1. <u>Efficiency First</u>: Reducing the amount of energy used to power our economy and scaling up energy efficiency is essential to empowering a 100% clean energy future for all, and will make reaching that target easier and more cost effective.
- Equitable and Just: A commitment to achieving equity, affordability, and access for all members of the community in the transition to 100% renewable energy;
- 3. Clean and Renewable: A clear definition of clean and renewable resources; and
- 100% Renewable Electricity by 2035: A full transition of the electricity sector to clean, renewable energy;



Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

- 5. <u>All Energy-Use Sectors by 2050</u>: A commitment to transition other energy sectors to 100% including transportation and heating and cooling;
- 6. <u>Inclusive and Transparent Planning and Implementation</u>: A commitment to a transparent and inclusive process for planning and implementation, ensuring that the public has an opportunity to participate.
- 7. <u>Local Generation and Job Creation</u>: A goal for how much of the community's energy needs will be met by local, distributed generation;
- 8. Collaborate with Neighboring Communities: A commitment to work with surrounding communities in achieving aligned clean energy and equity goals;
- Advocate: A commitment to advocate for policies or regulations at the state, regional and/or federal level that aid the city in their transition, and negotiate with existing utility service providers.
- Demonstrate Immediate Progress: Build, support or incentivize clean energy projects in your community, and prioritize projects that benefit low-income residents and/or communities impacted by fossil fuels.

Guideline 1: Efficiency First

Reducing the amount of energy used to power our economy and scaling up energy efficiency is essential to empowering a 100% clean energy future for all, and will make reaching that target easier and more cost effective. Determining the potential for energy efficiency and energy savings are a critical first step to implementing a 100% clean energy strategy. Before determining how much renewable energy is needed, first assess how the present energy demand can be reduced significantly. Strategies to enhance energy efficiency and energy savings technologically include weatherization, cogeneration, district heating and cooling, decentralized electricity generation and smart grids/microgrids, the use of industrial waste heat, building controls, automated lighting, and solar-powered hot water heaters and heat pumps. Cities should also pursue non-technological measures that enable behavior shifts (e.g. electricity saving campaigns) and creating a culture of energy saving behavior.

For research, policy analysis, and expert guidance on energy efficiency go to the <u>American Council for an Energy-Efficient Economy</u> (ACEEE), which also provides a <u>toolkit</u> for local governments on how to boost energy efficiency.

Guideline 2: Equitable and Just

The transition to 100% renewable energy can bring a wealth of community benefits, particularly to those who are most vulnerable. Transitioning our energy systems entirely to renewable energy presents an unprecedented opportunity to address inequity and lift up those most



Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

impacted by climate change and fossil fuel extraction, infrastructure, and combustion. The transition to renewable energy can be a vehicle to decentralize and democratize our energy infrastructure, reduce and stabilize costs, create jobs, improve grid reliability, and distribute the economic benefits of generating energy more equitably. For example, cities have been able to reduce electricity cost to consumers by integrating solar panels into their electrical generation mix. In order to achieve these benefits, we must be intentional and steadfast in integrating solutions to these challenges into the transition plan.

A transition to 100% renewable energy should include policy mechanisms and financial incentives that enable the following principles:

- Create Quality Careers for all people employed in clean energy industries. Local clean
 energy transitions must create local jobs that are self-determined by community
 members and community needs. Jobs created from cities transitioning to clean energy
 should be quality, family-supporting or unionized jobs that prioritize employing the often
 non-traditional workers in clean energy programs, and people from traditionally
 marginalized backgrounds.
- Provide a Just Transition that protects the livelihoods and well-being of fossil fuel workers and communities. Communities whose primary economic driver has been the fossil fuel industry, that have borne the brunt of the pollution related to fossil fuel production and/or workers currently employed by the fossil fuel industry deserve protection, support and right to first access of new economic opportunity during a nationwide energy and economic transition to 100% renewables. Cities should address the needs of workers by engaging community-leadership and voices throughout the design and implementation of the transition plan.
- Ensure Equitable Access to clean-energy-related economic opportunities (including careers, wealth, and clean energy infrastructure) for vulnerable communities and individuals especially working class and low-income people, people of color, women, and youth. Regulatory models should prioritize ownership and benefits of the new energy system for people of identities that have been historically marginalized by the fossil-fuel economy.
- Provide Affordable Clean Energy Options, especially for members of vulnerable communities. A city transition plan should prioritize financing models that enable all income brackets and business sizes to choose 100% clean energy renewable energy. The transition plan should secure community benefits and cost affordability of utility-scale renewable energy alongside growth in locally-owned, affordable options for distributed energy. Public financing programs should redirect money saved from energy efficiency measures to fund more community-owned clean energy and transportation projects, especially in communities with greater financial need.



Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

Guideline 3: Clean and Renewable

Clean, renewable energy resources include carbon and pollution-free energy sustainably generated from renewable sources including wind, solar, tidal, and geothermal. Low-impact, small hydroelectric and some forms of biomass may be included after being evaluated for sustainability and environmental justice implications. Nuclear, natural gas, coal, oil based, or any other forms of carbon-based energy production are not included as clean or renewable sources of energy.¹

Existing renewable energy sources, including hydroelectric, currently in your community's energy resource mix can contribute to a community's 100% renewable energy goals. However, community commitments to 100% are intended to drive investments in new renewable energy generation. A commitment to 100% should include a commitment to replace fossil fuels and nuclear energy currently in use, and meet any projected growth in energy demand with energy efficiency and/or new clean and renewable resources.

Guideline 4: 100% Renewable Electricity by 2035

Cities commitments to 100% renewable energy are already driving new renewable energy investments, and are critical to catalying the momentum we need in order to transition the U.S. to 100% renewable energy in all energy sectors by 2050. The following are examples of the investment routes that other cities that pursued to achieve their goal of 100% renewable electricity. In order to achieve 100%, it is likely that your community will pursue a mix of the options outlined, and may also help to develop investment and partnership models not yet in practice.

- **Direct Investment in local, distributed solar and wind:** There are a range of ways the city can meet its 100% goal through local, distributed wind or solar:
 - Power at least a portion of municipal operations with on-site generation
 - Adopt city policies that enable residents and small businesses to install on-site renewable projects and/or invest in community solar or wind projects
 - Incentivize commercial, industrial, and other large-energy consumers in utilizing roof and parking-lot space for on-site solar and wind through building codes, simple permit processes and/or local tax incentives.
 - Participate in cooperative buying pools with other municipalities or large energy customers to aggregate your buying power.

Updated 12/1/2017 5

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¹ This is a summary of the Sierra Club's energy policy. The full policy can be found at: https://www.sierraclub.org/sites/www.sierraclub.org/files/Energy-Resources-policy_0.pdf



Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

Check out the US Department of Energy <u>SolSmart Program</u> for more information and examples of case studies of cities like Hartford, CT, Columbia, MO, and Milwaukee, WI, just a few of the cities that have been designated as gold leaders in making it faster, cheaper, and easier to go solar.

- Power Purchase Agreements (PPA) PPAs offer an avenue for communities to build commercial or utility-scale renewable energy projects to power municipal operations, hospitals, public schools and other energy users by contracting directly with an independent electricity generator or system owner to finance and implement renewable energy installations. Benefits of PPAs include the delivery of predictable, lower cost energy, long-term pricing, renewable energy certificates and tax credits, without large upfront costs. See NREL and SEIA for more details on PPAs.
- Work with your Current Utilit(ies): Most electric utilities in the U.S have invested in some level of renewable energy in their resource mix, and many are mandated by state renewable portfolio standard to source a percentage of their energy portfolio to renewable resources. Community-wide, you will likely represent a significant percentage of their total customers and load, and therefore have leverage to push the utility to pursue more ambitious renewable energy investment plans. Opportunities where cities can pursue the conversation on 100% renewable energy include the utility's integrated resource planning process, public utility commission dockets on utility rates, net metering, and via the franchise agreement between the community and the utility which grants the utility right-of-way for transmission and distribution infrastructure. Shortly following Salt Lake City's commitment to 100% Renewable Energy, the city announced a new agreement with their utility, Rocky Mountain Power, in which the utility committed to working with the city to achieve their energy goals.
- Existing Cooperative and Municipal Utilities: Many of the communities that have successfully transitioned to renewable electricity including Burlington, VT, Aspen, CO and Georgetown, TX are served by a municipal or cooperative electric utility that owns the power generation sources or engage in Power Purchase Agreements for their electricity customers. In places where a local community is already served by a municipal or cooperative utility, the local government can direct the utility to increase their use of renewable energy sources and implement programs that incentivize residential and commercial action on energy efficiency, rooftop solar, and electric vehicle infrastructure.



Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

- Community Choice Aggregation (CCA) Community Choice Aggregation allows local governments to pool (or aggregate) their electricity load in order to purchase and/or develop power on behalf of their residents, businesses, and municipal accounts. CCA is an energy supply model that works in partnership with the region's existing utility, which continues to deliver power, maintain the grid, provide consolidated billing and other customer services. Historically, local governments have pursued CCA's in order to secure lower electricity rates for their residents. Recently in California CCA programs have launched that offer both lower rates and a cleaner electricity mix than what is offered by the existing utility.² CCA's are currently legal in CA, NJ, IL, MA, OH, RI, NY and under consideration in MN, DE, and UT. For more detail check out the Local Energy Aggregation Network.
- Municipalization: Municipalization is when a city or county takes control of its electric or gas generation, transmission and/or distribution from an Investor Owned Utility (IOU) or Rural Electric Cooperative (Co-op). In addition to enabling a community to source its energy needs from renewable energy, forming a municipal utility can lower rates, improve reliability, and create more community control over how the utility is operated. In recent years, Boulder, CO, Thurston County, WA, and Daytona Beach, FL have all pursued municipalization. For more detail check out the Community Power Network.

A Note on Unbundled Renewable Energy Credits (RECs). We do not recommend this as an investment primarily because RECs do not provide a potential for energy-costs savings, local job creation, nor a guarantee of new renewable energy online. However, if a city does purchase RECs to offset the current electricity mix, you should ensure that the RECs meet the EPA's guidance on purchasing RECs and are from projects that create "additionality," adding new renewable generation that did not exist prior to the commitment. Where other investment pathways are available, we advise that the city to phase down the purchase of RECs, and replace them with direct investments in renewable energy projects as quickly as possible.

Guideline 5: All Energy-Use Sectors - Electricity, Heating and Cooling and Transportation - by 2050

A community's 100% commitment should aspire to transition all energy sectors, including electricity, heating and cooling, and transportation. It is likely your community will be able to transition one sector faster than others, though the vision for the transition to 100% should encompass all types energy use in the city. One recommended approach is to set a goal of

² http://www.ebce.org/app_pages/view/41



Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

transitioning all energy sectors by 2050, with shorter-term targets for the sectors that can be transitioned sooner. If it is not feasible to set a goal for all energy sectors, begin by establishing a goal to transition the electricity sector.

Transportation

For the transportation sector, we recommend that the community pursue the following actions:

- Incentivize use of public transit, carpooling, walking and biking: Establish policies
 that reduce vehicle miles traveled by shifting passengers and freight to more efficient
 modes of travel, including transit, walking and biking, and creating an integrated
 transportation system.
- **Infrastructure:** Establish policies that build infrastructure for electric cars, buses, and trucks
- Commit to 100% Electric Vehicles for Municipal Fleets: Establish vehicle fleet mandates that eventually require 100% of municipal vehicles (cars, garbage trucks, etc.)
- Commit to 100% Electric Vehicles for Public Transportation: Establish vehicle fleet mandates that eventually require 100% for transit vehicles (buses and non-revenue fleet cars) are electric, with interim targets created.
- **Public Education**: Promote a widespread switch among the public to electric vehicles through programs such as educational outreach, excise tax waivers, rebates, EV car-sharing programs, etc.
- **Budget Prioritization** Prioritize smart land-use planning, public transportation and clean, alternative modes of travel in local transportation budgets
- Reallocate funds to support integrated multi-modal public transportation infrastructure and clean modes of transportation (high capacity vehicles, rail, light rail and subway systems, walking, biking, and bus, as appropriate), as well as judiciously prioritized road and infrastructure repair.

Buildings: Heating and Cooling

For the buildings sector, we recommend that the community pursue the following actions:

- **Reach building codes:** Establish policies that require renewable all-electric water and space heating in new construction and major retrofits. (We have a draft ordinance on renewable water heating that could be expanded to all thermal loads. Do you want this?)
- Infrastructure: Establish policies that discourage the expansion of gas services in new construction. Require "electric-ready" homes and buildings at the point of sale. Electric-ready requirements can facilitate future electrification by removing barriers and reducing costs for transitioning the building stock to clean energy.



Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

- Incentivize purchase of super-efficient electric technologies, including electric heat pump space heaters, electric heat pump water heaters, electric induction stoves/convection ovens, and electric heat pump clothes dryers. Instant rebates lower the upfront costs of switching from fossil fuels to all-electric appliances. City taxes for expanding gas infrastructure (like hook ups to the distribution system) can create a new revenue stream to fund energy efficiency and incentives for electrification.
- Workforce development: Create or support workforce development, training, and
 certification programs for plumbers, electricians, HVAC installers, contractors, architects,
 and building and safety staff. Offer upstream incentives to encourage contractors,
 plumbers, and electricians to support fuel-switching to high-efficiency heat pump
 appliances. The Northwest Energy Efficiency Alliance has excellent guidance and
 studies on upstream incentives and how they can support market transformation.
- **Public education**: Promote a widespread switch from fossil fuels to electric heating and cooking through public education and communication efforts to demonstrate the economic, health, safety and climate benefits of all-electric homes.
- **Financing:** Establish innovative financing programs (like on-bill financing and PACE) to lower the upfront costs of installing new high-efficiency electric appliances
- Bulk-buy programs: Partner with other cities to secure group discounts on purchase and installation high efficiency electric appliances. These programs often lead to increased consumer uptake because of the lower costs and 3rd party vetting of participating companies.
- **Permitting:** Update permit protocol to expedite fuel-switching/electrification while maintaining needed safety standards
- Commit to 100% electric municipal buildings: Establish a building mandate that requires 100% of municipal buildings to be all-electric and powered by rooftop or community solar
- All-electric pilot projects: Work with local CCE or municipal utility to establish all-electric residential and commercial pilot and demonstration projects

Useful resources:

- RAP webinar on Environmentally Beneficial Electrification
- City of Palo Alto Heat Pump Water Heater Pilot

Guideline 6: Inclusive and Transparent Planning and Implementation

In order to successfully achieve an equitable and just transition to 100% clean, renewable energy, it's critical to develop and implement the commitment through inclusive and transparent processes. Individual citizens, local community organizations, public institutions, and small and



Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

large businesses must work in tandem to form the new system. Realizing just solutions requires inclusive policy processes and soliciting input from all of a community's diverse stakeholders on their needs and ideas. It also requires assessing and defining those populations most likely to be impacted by environmental problems and related climate and energy policies. This involves prioritizing a range of public participation opportunities and listening to and learning from people under-represented in decision-making processes and those who experience forms of discrimination and inequality.

Cities have more authority over their community's energy resources than you may realize. Each city should do an individual assessment of the options currently available based on regional and state laws.

As a first step in your roadmap, we recommend that you assess your baseline energy use, greenhouse gas emissions, and socioeconomic factors.

- Energy: Important indicators to track for energy include total annual electricity
 consumption, total greenhouse gas emissions, the utility's current electricity resource
 mix, percentage of rooftops with solar installed, and the average cost of electricity per
 ratepayer. There are a number of energy and GHG baseline planning tools including
 ICLEI, NREL, and Project Sunroof.
- Equity: Socioeconomic indicators that you can track include the number of local clean energy jobs created, money saved from the avoidance of energy imports, economic benefits to local businesses and industries, decrease in energy costs, especially for low-and moderate-income households, avoided pollution and related health costs, and ensuring that a minimum percentage of all investments in clean energy infrastructure benefits disadvantaged communities, with a minimum of projects located directly in those communities. Meister Consulting has develop a framework for integrated equity into a city's implementation plan and summary report of how cities are integrating equity into their planning and implementation. The UC Berkeley Labor Center and the Energy
 Democracy Alliance both have detailed guidance on this topic.
- Policy and Regulatory Landscape: It is also critical to assess the local, state and
 federal policy landscape on energy what are the current laws in place to enable the
 transition, what successful policies have other local or state governments implemented.
 The <u>State Policy Opportunity Tracker</u> and the <u>Database for State Incentives for</u>
 Renewable Energy are both excellent resources to determine what existing energy laws
 and regulations are in place in your state.

Track and assess your progress towards 100% and evaluate ways to improve, refine and build upon the initial projects pursued. There are a number of well respected tracking tools for cities



Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

that are implementing climate and energy solutions including <u>Star Communities</u>, <u>ICLEI's</u> <u>HeatPlus</u>, and <u>CDP</u>.

Guideline 7: Develop an Ambitious Target for Local and Distributed Energy

There is a tremendous amount of untapped renewable energy potential on rooftops and underutilized open space within the city-limits of our communities. Local, distributed energy provides a number of benefits to the community. It increases grid security and reliability, grows the local economy, creates new jobs, and provides an opportunity to increase local ownership of these assets and spreads the economic opportunities of transition to clean energy across the community. A community's 100% commitment should incentivize a diversity of local investment and procurement options, and be coupled with standards for local hiring, workforce development, and options community ownership.

Guideline 8: Collaborate with Neighboring Communities

The path to 100% is still being built. We do not have all the answers to how we will accomplish this transition today. In fact, a number of the solutions that will enable this transition have yet to be developed or refined. Further each community's unique geography, history, demographics, and socio-economic characteristics will shape and influence the solutions each city pursues.

Cooperation among cities, towns, and rural areas can provide advantages and efficiencies for all parties since most cities cannot meet this transition within their city boundaries, and rural communities. ICLEI's 100% Renewable Energy Cities & Regions Network provides guidance, tools and a **network of experts** that can aid you in developing a plan to transition your community. USDN is a network of Sustainability Directors in U.S. Cities. Over 2500 cities from across the globe are also sharing their progress and lessons learned through the UNFCCC's Global Climate Action tracker.

Guideline 9: Advocate

A transition that achieves all of the principles and guidelines outlined in this document will require each community to become strong advocates for policies at the state and federal level that encourage rapid deployment of renewable energy. It will also be critical to engage in ongoing dialogue and negotiations with the companies that currently provide electricity, transportation, and heating services for your community.



Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

Guideline 10: Demonstrate Immediate Progress

Build, support or incentivize clean energy projects in your community, and **prioritize projects that benefit low-income residents and/or communities impacted by fossil fuels.** Public buildings can also serve as locations for clean energy projects. Its critical that these projects are built at-scale, and not just small demonstration projects that generate a small portion of the building's energy needs.

Another excellent action to demonstrate immediate progress is to transition municipal electricity to 100%. A number of communities have set (or achieved) goals to supply all the energy used by their municipal facilities or operations with renewable electricity. Powering municipal operations with 100% renewable energy can be an important milestone on a city's path to 100% clean energy, but a municipal target alone does not achieve the scale necessary to address the social and environmental threats facing us.

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Creating an Equitable and Just Transition to 100% Clean, Renewable Energy

Appendix: Examples of 100% Renewable Energy Commitments

City Council Resolutions

- 1. Atlanta, GA
- 2. Orlando, FL
- 3. Portland, OR
- 4. Pueblo, CO
- 5. St Louis, MO
- 6. Sample Resolutions

Climate and Energy Plans

A roadmap can help your community to define concrete, funded activities with assigned accountability for research, development and implementation. It is critical to underpin the city's transition roadmap with plausible policy measures that integrate this commitment with existing fiscal, energy, economic and infrastructure policies. Below are some examples of city climate and energy plans that include roadmaps to achieving 100% renewable energy:

- San Francisco, CA: Renewable Energy Task Force Recommendations Report
- Greensburg, Kansas: Sustainable Comprehensive Master Plan
- Burlington, VT: Climate Action Plan
- San Diego, CA: Climate Action Plan
- Salt Lake City: Communities Renewable Energy Study
- Denver, CO: 80x50 Report
- Long Island, NY: Clean Electricity Vision
- Vancouver, British Columbia: 100% Strategy