

## Renewable Energy in Cities - Overview

### Cities that have renewable energy standards or goals for municipal operations

#### Large Cities (250,000+ people)

Boise	ID	250,000	New buildings built in 2030 will be net zero
Madison	WI	250,000	100% Renewable/Zero Net Carbon
Chula Vista	CA	267,000	Goal: Reduce municipal energy use by 20% by 2020 through energy efficiency and renewable energy initiatives. We are currently in the process of installing 2.4 MW in our third phase of solar on city buildings. This will bring our total solar up to 2.5 MW. There will also be three battery storage systems to help expanded the use of solar.
Toledo	OH	280,000	Expand and build on the BetterBuildings program which provides financing for energy efficiency technology. Decrease the amount of energy businesses and governments use while increasing the amount of energy they get from renewable sources such as solar and geothermal. Develop tools and programs to encourage more people to ride public transportation.
Orlando	FL	282,000	100% renewable energy by 2030. We plan to expand rooftop solar on municipal buildings and procure solar electricity through the OUC Community Solar program. Currently, Orlando's municipal operations is powered by 10.2% renewable energy.
Raleigh	NC	458,880	This goal is in our City's Comprehensive Plan - By 2030, increase the use of renewable energy to meet 20 percent of Raleigh's peak electric load, or maximum electric demand that is typically reached during normal business hours. This plan along with the Climate Energy Action Plan (CEAP) provide guidelines as to the next steps to take to ensure these goals and standards are adhered to. The current Comp Plan recommends participating in the NC GreenPower program to increase the electricity use through renewable resources. As these plans are updated and additional research and information becomes available this target will be re-evaluated.
Long Beach	CA	470,130	The Sustainable City Action Plan (2010) states a goal to facilitate 2 MW of solar energy on city facilities by 2020. Further or revised targets may be discussed in the City's upcoming Climate Action and Adaptation Plan. The Long Beach Convention Center is currently upgrading its rooftop solar sysem to a 1 MW photovoltaic (PV) system. Additionally, the new Long Beach Civic Center, currently under construction and on track to open in 2019, will have 1 MW of rooftop PV to offset 25% of the facility's electricity consumption. To exceed the original goal, a solar power purchase agreement with PFMG (Partners for Many Generations) Solar was recently approved for the install and maintenance of a 5.8 MW PV system to span up to 15 city facilities. The City will expand on it succesful strategies and adopt new policies promoting renewable energy through the CAAP.

Kansas City	MO	478,000	KC's climate protection plan (adopted in July 2008) established a goal of purchasing 5% of the City's total electricity demand for municipal operations from renewable sources. In 2017 the City Council directed staff to evaluate the feasibility of procuring 100% of the electricity for municipal operations from renewable energy. Our investor-owned electrical utility has requested state approval for a new renewable energy program. If approved later in 2018, the City intends to enter into an agreement to procure all of the electricity for municipal operations from wind energy.
Atlanta	GA	500,000	Atlanta City Council committed in May 2017 to transition to 100% clean energy for municipal operations by 2025 and commissioned a feasibility study on how to achieve that goal. The study has been completed, with a recommendation to extend that deadline to 2035 to allow sufficient time to achieve that goal through local investments in efficiency improvements and on-site renewable energy installations in municipal facilities rather than through purchase of renewable energy credits. The City Council is currently considering legislation to approve extension of that deadline.h
Baltimore	MD	621,849	Municipal Strategic Energy Management Plan for city government states the goal of increasing renewable to government facilities 20% by 2022. Baltimore purchases renewables through a 22-member local government buying consortium and directly buys 10MW from Constellation Solar. The City installed and owns 1MW of solar that operates at our waste water treatment plant. We are evaluating the solar potential of two closed city-owned landfills. We routinely evaluate the technical and financial feasibility of proposals from companies desiring to sell solar power from their own solar operations. Finally, Baltimore is evaluating ways to increase the use of biogas at waste water treatment plants. The City has both a Master Plan and Sustainability Plan that address goals and strategies related to this.
Las Vegas	NV	640,174	The City has a goal to maintain net-zero energy; it currently receives this power through a Renewable Energy Agreement with the state's investor-owned utility NV Energy: i. Most of the energy for city use is produced at Boulder Solar near Boulder City, Nevada. ii. Forty city buildings and facilities, parks, fire stations and community centers have approximately 3 megawatts of net-metered solar covered parking. iii. A three megawatt solar plant at the city's Water Pollution Control Facility provides power for wastewater treatment. o Additional power that is provided by NV Energy that already satisfies Nevada's renewable portfolio standard. o The City also applied for and will receive 5 megawatts of hydropower allocated to the City from Hoover Dam, which began in October 2017.
Portland	OR	650,000	Sustainable City Government, 2030 Environmental Performance Objective for Renewable Energy: Generate or purchase 100% of all electricity for City operations from renewable resources. From Climate Action Plan: Fifteen percent should come from onsite sources such as solar or biogas.
Boston	MA	685,094	The 2007 Executive Order on Climate Action required at least 15% of all municipal electric use come from renewable sources by

			2012. Since then, the City has procured RECs for upwards of 25-33% of our total electric load (depending on pricing/budget each year). The City also has ~300kW of solar PV capacity installed on city buildings with plans to expand through the Renew Boston Trust, a program that will finance an additional ~700kW of solar PV on city buildings through 2019.
Washington	DC	693,972	The District Department of General Services (DGS) has an ongoing policy of sourcing 100% of its own operational electricity from renewable sources. Accordingly, the District has identified and executed two main strategies to achieve this goal: wind and solar power purchase agreements (PPAs) and renewable energy credits (RECs). The District has entered into three PPAs, including two solar PV purchases summing to more than 11 MW of PV solar across 50 government sites citywide (~3.5–4% of the government's total electricity needs). The remainder of the renewable power required by DGS is achieved through the purchase of RECs.
Denver	CO	700,000	Double renewable production from city facilities from 2012 level, by 2020. Using direct installations and power purchase agreements.
Seattle	WA	705,000	We are already 100% clean via Seattle City Light's carbon neutral electricity.
Columbus	OH	860,090	20% of electricity currently used to power city buildings and operations is renewable. Our goal is to move that number to 28% by 2020 and 50% by 2023.
San Francisco	CA	890,000	For over 100 years the City's municipal owned utility has delivered GHG free electricity to municipal operations, including San Francisco's public transportation infrastructure, from its Hetch Hetchy hydropower system. San Francisco has a goal of delivering to all residents and businesses 50% RE by 2020 and 100% RE citywide, including municipal operations, by 2030. Between the City's two utilities (e.g., IOU & MOU), the grid is 44% RE today. San Francisco intends to reach its goals through expansion of its new community choice aggregation program, CleanPowerSF which currently has a Green product (currently 40% RE, in state wind, no unbundled RECs) and a SuperGreen product (currently 100% RE, in state wind, no unbundled RECs). San Francisco will continue to drive policies like its Better Roofs Ordinance which requires the installation of rooftop solar and / or living roofs on all new construction up to 10 stories. The City also plans to reach this goal through coordination with PG&E who is on track to meet their state RPS requirements.
Austin	TX	949,587	The Austin City Council passed Resolution No. 20070215-023 in 2007 to formally adopt a goal to make city operations carbon-neutral by 2020. <a href="#">Link to Resolution No. 20070215-023.</a>  City buildings currently use 100% renewable electricity from Austin Energy through their Greenchoice program. The largest remaining sources of emissions are from fleet vehicles and natural gas consumption. We are working on decarbonizing our fleet with low

			and no GHG emission vehicles and we buy offsets for any GHG emissions above our yearly targets.  <a href="#">Click here for more information</a>
Honolulu	HI	998,714	State goal/RPS standard is 100% renewable by 2045. City and County of Honolulu has endorsed that goal.
San José	CA	1,046,079	The City will be launching San José Clean Energy, a Community Choice Aggregator, to municipal accounts in the next month with 40% renewable and 100% greenhouse gas free electricity. The City has set a goal of 60% renewable energy by 2030, 87% by 2040, and 100% renewable energy by 2050 in San José Clean Energy's power mix, and is laid out in the City's first climate action plan: Climate Smart San José.
Dallas	TX	1,281,000	100%, buying RECs
Phoenix	AZ	1,600,000	100% alternative fuel by 2025, 40% reduction in carbon by 2025, 100% carbon neutral by 2050 based on plans in operations--leading by example. Pathway will be through purchase of carbon neutral electricity, and electrification of fleet.
Houston	TX	2,250,000	Goal of 100% renewable for municipal operations. Currently at ~89% (Green-E certified RECs (wind) + 50 MW solar PPA). Hope to reach 100% in 2018.
Chicago	IL	2,705,000	In April of 2017 Mayor Emanuel committed to achieving 100% renewable electricity use for City of Chicago, Chicago Public Schools, Chicago Housing Authority, Chicago Park District, and Chicago City Colleges by the year 2025. This will be achieved through a mix of onsite renewable energy generation, renewable energy certificates, and power purchase agreements. City and Sisters will evaluate the electricity portfolio on a routine basis and evaluate the best opportunities.
Los Angeles	CA	4,030,904	If yes, please describe the goal or standard and how the city plans to achieve it. LA owns the largest municipal utility in the country (DWP) which provides service to all city operations, municipal and not. DWP met the state's 40% GHG reduction target 14 years early and has goals to decarbonize its electricity grid: >> Eliminate coal from energy mix by 2025 >> Achieve 33% renewables by 2020; 55% by 2025; 70% by 2036 >> Increase total MW of local solar PV power to 900 MW by 2025; 1500 MW by 2035 >> Increase energy storage to 1654 MW by 2025 In June 2017, DWP launched a 100% Renewable Energy Study to determine investments needed to fully transition to renewable energy. Mayor Garcetti and City Council passed a motion directing DWP to undertake the study, unprecedented for a utility of this capacity (4M customers, vertically integrated, grid balancing authority), and establish a working group with academics, policy makers, local community, and technical advisers. DWP contracted with the National Renewable Energy Laboratory to lead the research. Additionally, City Council directed DWP to identify further strategies to reduce gas consumption in buildings and achieve zero emission buildings.
New York	NY	8,500,000	The City has a goal to install 100 MW of solar on public buildings by 2025. In the City's 1.5 Climate Action Plan, using the City's

			purchasing power to ultimately procure 100% renewable electricity for City operations is an action commitment to begin implementing by 2020.
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### Medium Cities (100,000 – 250,000 people)

Las Cruces	NM	101,000	25% electricity generated by RE by 2022 50% electricity generated by RE by 2030 100% electricity generated by RE by 2050
Boulder	CO	108,000	100% renewable electricity by 2030 80% reduction in city operational GHG emissions by 2030 (compared to a 2008 baseline)
Waterbury	CT	110,000	Voluntary goal to purchase 20 % from renewable energy sources by 2018. See attached letter of commitment. Fuel cell and solar are current options being implemented,
Gresham	OR	111,523	100% renewable energy use by 2030. The City has made significant progress toward this goal by making energy efficiency upgrades, achieving net-zero energy use at its wastewater treatment plant and converting all street and park lighting to LED. The City will continue to invest in energy efficiency and generation projects as financially appropriate, and may choose to purchase clean wind power from Portland General Electric to make up the difference.
Elizabeth	NJ	124,969	By implementing an Energy Efficiency and Conservation Strategy, the City of Elizabeth seeks to reduce total energy use, fossil fuels, emissions of air pollutants and greenhouse gases, lower energy costs and improve the reliability and security of its energy system. Clean energy can also spur local economic development, improve public health and quality of life, as well as help communities achieve sustainability and "green-building" goals.
Columbia	SC	133,358	We have committed to the Ready for 100 campaign and have set 2036 as our goal to be powered by 100% renewable sources.
Syracuse	NY	143,396	Goal: double renewable energy generation capacity from 2012 levels by 2020. We evaluate opportunities to add more capacity when/where financially feasible.
Torrance	CA	147,175	Focus on continued energy management through capital project budget, with a goal of 2% reduction over the next 5 years.
Fort Collins	CO	167,000	Current goal is "If funding is available, purchase 20% of energy from renewable sources by 2020 with 10% provided by onsite distributed energy. " Goals are being updated in 2018. In-house GHG analysis shows that the municipal organization is poised to go from 12% below 2005 GHG emissions in 2016 to 18.5% in 2020, simply by maintaining the momentum of ongoing operations (e.g. fleet transition to CNG). Based on carbon reductions from previously funded municipal initiatives like microhydro (the water treatment plant produces a portion of the energy needed to run the plant on site) and ongoing offers such as Municipal Energy Efficiency Fund, the City will meet its 2020 goal to reduce GHG emissions 205 below 2005 by 2020. We have focused on GHG goal and not explicitly on renewables goal.

Tempe	AZ	170,000	100% renewable energy by 2035 (adopted March, 2018)
Newport News	VA	181,825	The City's "Roadmap to Sustainability" identified three goals for Energy Efficiency and Conservation; Promote green businesses and energy independence and search for renewable energy opportunities; Promote energy efficiency and conservation practices and technologies in City facilities and vehicles; and Promote energy efficiency and conservation awareness in the community.
Salt Lake City	UT	192,672	50% renewable electricity by 2020   100% renewable electricity by 2032
Des Moines	IA	210,000	25% by 2020; 50% by 2030; Carbon Neutral by 2040
Fremont	CA	230,000	The California Renewables Portfolio Standard (RPS) requires that the local investor-owned utility, Pacific Gas & Electric, provide an electric power content of 33% qualified renewables by 2020 and 50% by 2030. PG&E's 2016 power mix already consisted of 33% qualified renewable power content, and 69% GHG-free electricity (qualified renewables plus large hydro and nuclear power). In terms of local generation, between 2015 and present, Fremont has installed 1.65MW of solar PV systems. These include carport structures of 872kW at the Police Complex, 226kW at the Water Park, 349kW at the Maintenance Center, and 80 kW at the Irvington Community Center, as well as (3) 40kW PV + 95kWh battery storage microgrid energy systems at City Fire Stations. The City will continue to analyze the potential for additional solar PV systems. Finally, under East Bay Community Energy (EBCE), Alameda County's new community choice aggregation (CCA) program launched in 2018, is offering a default "Bright Choice" rate of 38% renewable and 85% GHG-free power. Fremont City Council passed a Resolution on April 17, 2018 to opt up from the default rate of "Bright Choice" to the cleaner and more renewable "Brilliant 100" so that all municipal electric power would be 40% renewable and 100% GHG-free at the time of launch.
Reno	NV	240,000	The goal is incorporated in the city's draft Sustainability & Climate Action Plan that is scheduled to go before City Council in October 2018 for adoption. The goal is: Meet 100% of Energy Needs for City Operations from Clean, Renewable Energy by 2019.

### Small Cities (< 100,000 people)

Aspen	CO	6,870	In 2007, The City of Aspen committed to reducing greenhouse gas emissions 30% by 2020 and 80% by 2050
Hermosa Beach	CA	19,772	Net zero energy for all new facilities.
Riverbank	CA	25,000	All new housing will have solar built into the units
College Park	MD	30,000	Generate 20 percent of electricity for City facilities using renewable sources by 2018 per Council Resolution 13-R-27 (See Appendix 3). The City has installed solar panels on two City buildings.
Easton	PA	30,000	50% in all municipal buildings

West Hollywood	CA	35,000	City has a goal of 100% renewable energy for municipal operations by 2035. Plan to achieve this goal by participating in Los Angeles County Community Choice Aggregation (LACCE) starting this year.
Culver City	CA	38,883	On December 11, 2017, the City Council decided to join the Los Angeles Community Choice Energy Authority -- later renamed the Clean Power Alliance of Southern California (CPA). The City will begin using 100% renewable energy through this program.
Rancho Palos Verdes	CA	43,000	Reduce CO2 by 25% by 2025
Everett	MA	43,340	Goals include replacing all street lights with new LED bulbs, fulfilling goals of City wide energy audit, installing municipal solar panels.
San Bruno	CA	44,000	Pending as part of the Climate Action Plan (in draft)
Saint Louis Park	MN	49,029	100% renewable electricity by 2030 -net zero energy construction; fuel switching to cleaner electric grid; adding renewable energy
Sheboygan	WI	49,203	25% reduction in fossil fuels by 2025
Queen Creek	AZ	50,400	The Town's General Plan includes a strategy to implement programs that encourage sustainable building and development practices in new and existing development.
East Hartford	CT	52,000	20% of the electricity we use must come from renewable sources like solar or water. We've achieved this annually since 2006
West Sacramento	CA	53,163	Municipal reduction target of 282 MTCO2e by 2020 through installation of solar PV.
Margate	FL	53,284	The City is currently participating in Department of Energy's Better Buildings Challenge where we have committed to reducing our energy consumption by 20% in targeted buildings and facilities by 2020.
Normal	IL	54,284	The Town had a goal of 25% renewable by 2010, which was established back in 2008. The Town was unable to meet that goal; however, we are now working toward the State of Illinois goal of 25% by 2025. We have built in steady progress toward this goal and are now at 13%.
Fairfield	CT	55,000	40% green power by 2020. Combination of PV, fuel cells, methane co generator and conservation
Revere	MA	55,000	The goal is to achieve high efficiency ratings through energy efficient vehicles and housing certifications.
Corvallis	OR	56,000	Adoption of the Corvallis Climate Action Plan sets targets for reduction through 2050. Implementation is underway with organizational ghg inventories conducted every other year to track progress.
San Rafael	CA	58,000	Switch all city electricity accounts to 100% renewable purchasing through our CCA.
Woodland	CA	59,068	The city's Climate Action Plan establishes a goal to increase energy efficiency and use of renewable energy for municipal operations to reduce emissions from municipal electricity

			use by 80% or more. The city's solar project, completed in May 2017, installed six solar arrays with a total capacity of 2.3 MW benefiting six city facilities. The electricity generated by the solar arrays offsets approximately 80 to 90% of the energy demand of five of the six facilities. Additionally, the city joined a CCA, Valley Clean Energy (VCE), in May 2017. VCE launched in June 2018 and offers a standard service option of at least 42% renewable energy and an alternative service option of 100% renewable energy.
Burnsville	MN	61,290	City of Burnsville has a greenhouse gas reduction goal for city operations that mimics the State of Minnesota goal of using 2005 as a baseline and reducing greenhouse gas emissions by 15% by 2015, 30% by 2025, and 80% by 2050. The City of Burnsville met the 2015 goal and as of 2017 has reduced greenhouse gas emissions by 28% in city operations. Using renewable energy has helped us get to this goal.
Eden Prairie	MN	63,151	Recently achieved 20% increase in facilities energy efficiency and a 40% increase in fuel efficiency after 10 years.
Schenectady	NY	64,913	In June of 2017, Mayor Gary McCarthy signed the Mayors for 100% Clean Energy Endorsement (this includes the City as a whole). The City is also committed to meet the REV 2030 goals for the State of New York: 40% reduction in greenhouse gas emissions from 1990 levels, 50% of electricity generated must come from renewable sources, and 23% reduction in energy consumption of buildings from 2012 levels.
Encinitas	CA	65,000	The Climate Action Plan includes City Action MRE-1 which facilitates the supply of municipal facilities with onsite renewable energy to achieve Net Zero Electricity municipal operations.
North Port	FL	66,300	Resolution No. 2013-R33
Walnut Creek	CA	70,018	The City has joined MCE, a community choice energy program, and all of its facilities are using the "Light Green" default option, which is currently 50% renewable.
Evanston	IL	75,000	Commitment to 100% clean energy by 2035 as a part of the Mayor's for 100% Clean Energy pledge. 100% renewable electricity for residents and small businesses through Community Choice Electricity Aggregation since 2012. Working to develop a strategy to get large employers to increase or begin their purchase of renewable energy. We are also working to get solar installations on numerous public buildings as a way of demonstrating the feasibility of onsite solar generation on multiple facilities.
Bethlehem	PA	75,000	Bethlehem is planning to use 100% renewable energy.
Fayetteville	AR	80,000	100% Clean Energy for City operations by 2030 100% Clean Energy for entire City by 2050 We plan to work with our Utility Companies to achieve this.



Napa	CA	80,000	The City goal as outlined in the City's Sustainability Plan for energy use is a reduction of 15 percent below 2005 levels by 2020 which is consistent with the statewide greenhouse gas reduction goal set forth in AB 32. Actions to be taken by the City to help achieve this goal include retrofitting streetlights with LEDs, replacing HVAC units with energy efficient models, energy efficiency improvements within the information technology division, supporting staff behavior changes that reduce energy use, adding more renewable energy systems to support city services, and opting up to 100% renewable energy options through the City's energy provider.
Avondale	AZ	82,881	Produce 1.1 million kWh per year through the Waste Water Treatment Plant solar system and offset close to 39% of the plants energy use with renewable energy.
Santa Fe	NM	83,000	Carbon neutral by 2040. Currently, city facilities receives 25% of its electricity from solar power, and is undergoing an energy performance contract to improve energy efficiency in its facilities.
Newton	MA	84,000	25% reduction in GHG emissions by 2020
Clifton	NJ	85,000	Mostly in building uses
Duluth	MN	86,000	Decrease ghg 80% by 2050 as a municipality. We will achieve this by investment in solar farm for our electric needs, change from coal to natural gas to renewable fuel oil as we transform steam plant to district energy system, LED lights, electric fleets and making improvements to all facilities.
Santa Barbara	CA	90,000	50% renewable by 2020 100% renewable by 2030
Carmel	IN	92,000	To become carbon neutral by 2040.
Santa Monica	CA	92,000	100% green power, achieved through Direct Access and Community Choice Aggregation
New Bedford	MA	94,845	Original goal was 10mw in 5 years. City currently has 16.2mw in solar power and 2mw wind under contract with the city.
Carson	CA	95,000	The City of Carson has joined a local Community Choice Aggregation Authority called Clean Power Alliance of Southern California (CPA). The City Council has also set the renewable default rate to 50% renewable by 2019.