READY FOR 100%

CITIES ARE READY FOR 100% CLEAN ENERGY

10 CASE STUDIES

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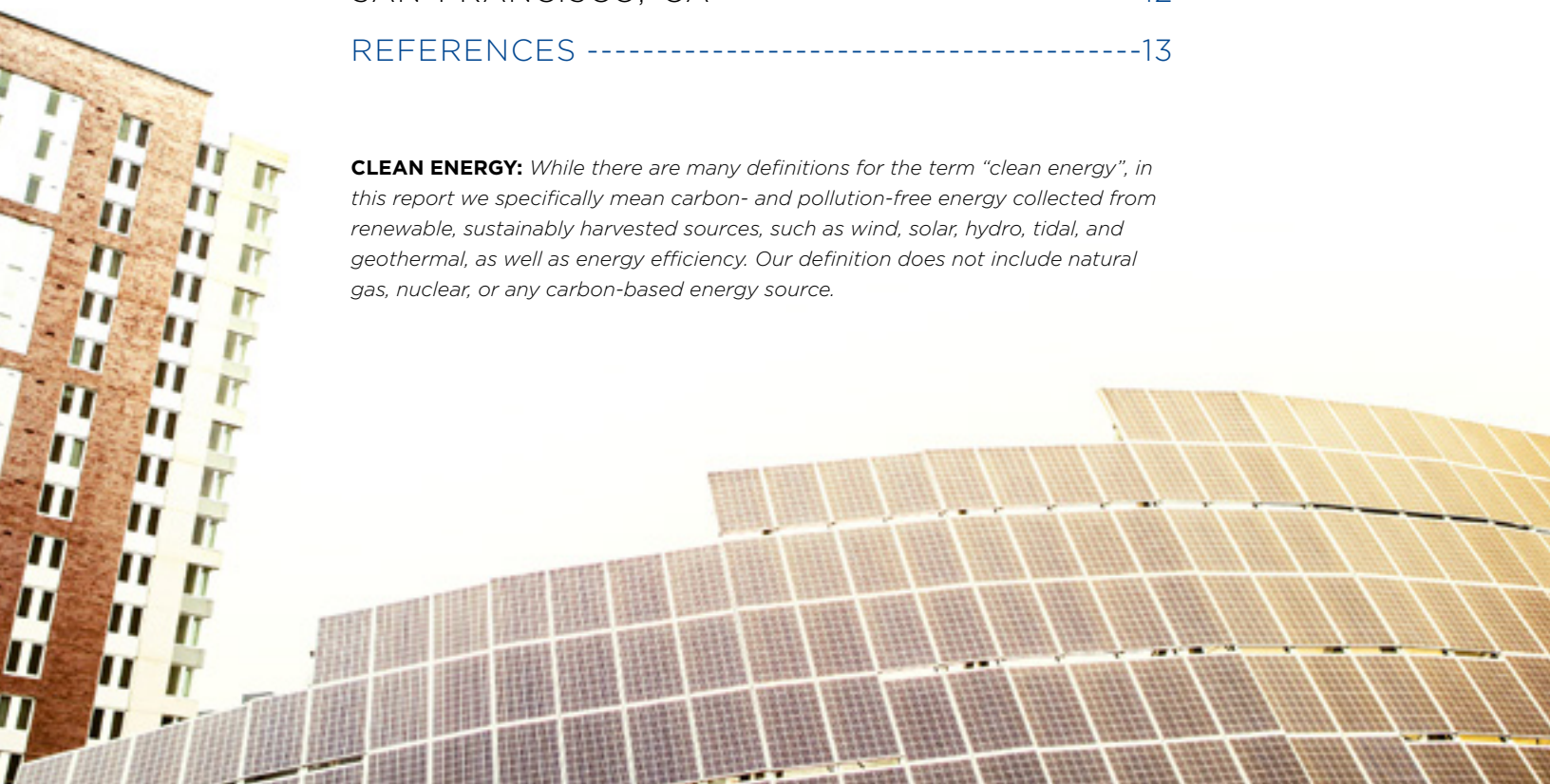
CLEAN ENERGY: *While there are many definitions for the term "clean energy", in this report we specifically mean carbon- and pollution-free energy collected from renewable, sustainably harvested sources, such as wind, solar, hydro, tidal, and geothermal, as well as energy efficiency. Our definition does not include natural gas, nuclear, or any carbon-based energy source.*



INTRODUCTION

Cities have long been the hotbed of innovation, the drivers of change, the incubators of solutions to the world's biggest challenges. Clean energy is the latest example of how leadership at the local level is pushing the envelope at a critical juncture.

This report showcases 10 U.S. cities that have made ambitious commitments to be powered by 100% renewable energy.

For a variety of reasons and in diverse circumstances, public officials and community leaders see the transition from dirty fossil fuels to clean energy not as an obligation but as an opportunity. Cities powered by 100% clean energy save taxpayer dollars, help their residents save money, create good jobs, and foster a better quality of life. They are catalysts for a new economy and clean energy future.

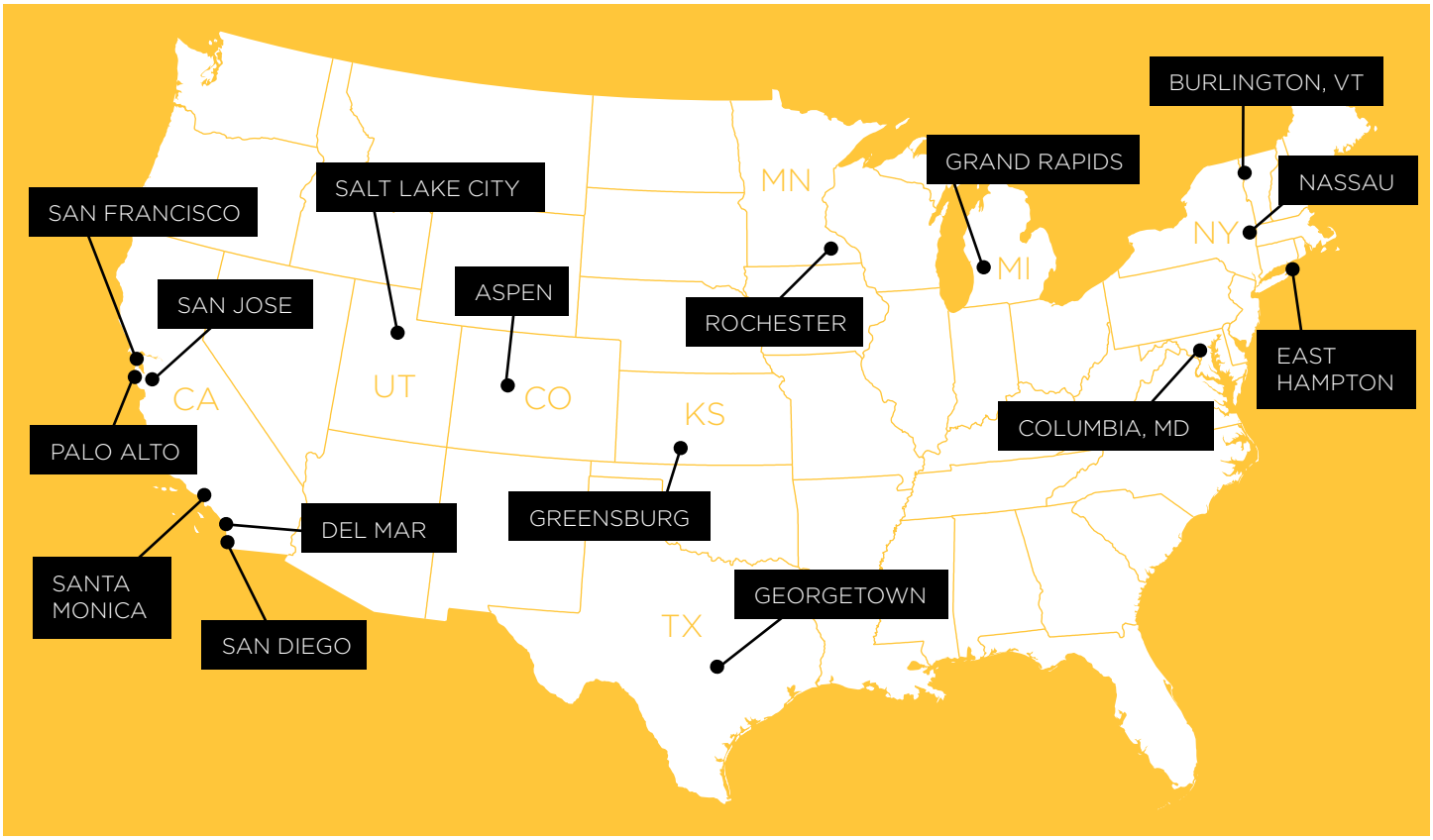
THESE CITIES SHOW US THAT

Clean energy keeps money in local government coffers. Solar prices have dropped 80% in recent years and wind 60%. Georgetown, Texas, found that renewables made sound fiscal sense as it could lock in lower rates for solar power, and renewables use far less water than fossil fuels—critical in a state accustomed to drought.

Clean energy creates local jobs. The solar industry already employs more than 200,000 people, and in 2015 job growth in the solar industry was 12 times greater than in the general economy. A just transition to a modernized, smart power grid can create millions of new, living-wage good careers. In San Diego, California, the Republican mayor was able to convince business leaders to sign on to a 100% renewables plan because of the promise of tech-sector and solar manufacturing jobs.

Clean energy saves people money. Clean energy can bring economic benefits to every American family. Stanford scientists studied this issue and concluded that the transition to a clean energy economy would save the average American family over $200 a year in energy costs and $1,500 a year in healthcare costs.

Clean energy cuts pollution and saves lives. Clean energy can address harms faced by front line communities that have suffered the worst consequences of fossil-fuel pollution. Air and water pollution emitted by coal and natural gas plants is linked to asthma, neurological damage, heart attacks, and cancer. Replacing fossil fuels with renewable energy reduces premature mortality.



U.S. CITIES WITH A COMMUNITY-WIDE 100% CLEAN ENERGY GOAL IN AT LEAST ONE SECTOR

By embracing 100% clean energy, these 10 cities are creating more equitable, healthy, prosperous and vibrant communities. It's no surprise that clean energy commitments are wildly popular with the public. According to a national survey conducted by the University of Texas at Austin in spring of 2016, 90% of American adults agree that the government should be focusing on developing renewable energy.

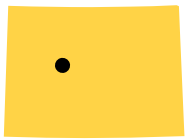
And 100% clean energy is not a not pie-in-the-sky idea. Burlington, Vermont; Aspen, Colorado; Columbia, Maryland; and Greensburg, Kansas, have already achieved 100% clean energy and are powering their cities today with entirely renewable sources. A dozen additional cities have made commitments to reach 100% clean energy in the next 15-20 years, and many others are considering similar plans.

As more cities set out on the path toward 100% clean energy, each will face different opportunities and challenges. Some cities like East Hampton, New York, and Rochester, Minnesota, are buoyed by their state's climate and energy policies. Several are finding innovative ways to deliver on their renewable energy promises, like considering Community Choice Aggregation in San Diego, San Francisco, and San Jose. Others like Grand Rapids, Michigan, see 100% renewables as the next logical step in a long journey to sustainability.

What each of their stories show us is that there is no one way to embrace a 100% renewables goal. There is not just one reason for cities to pursue this goal. And there is no single approach to achieving it. Whatever inspires a city to act, there is a way to make the switch to 100% clean energy and join a growing group of leading cities that are ushering in the clean energy economy.

The Sierra Club's Ready for 100 encourages and supports cities in the U.S. to accelerate a transition to just, clean, and renewable energy by setting aggressive 100% renewable energy targets for electricity, heating and cooling, and transportation and delivering the benefits of a local transition to clean energy to all people.

ASPEN, CO



Iconic ski town sees impacts of climate change and steps up to the plate with solutions.

100% RENEWABLE ELECTRICITY (ACHIEVED 2015)

- Population 6,658 (permanent residents)
- Legislative commitment, part of Canary Action Plan in 2007
- Colorado: Renewable Portfolio Standard (RPS) 10-20% by 2020 for municipal utilities; allows Community Choice Aggregation, Power Purchase Agreements, community solar
- Utility: City of Aspen Utilities (municipal)
- Key Entities Involved: Mayor, City Council, Utilities Department, Environmental Health Department, City's Canary Initiative
- Best known as a glamorous ski town in the Rocky Mountains
- Third city in the country to reach the 100% threshold

Residents of and visitors to Aspen know that the stunning beauty of snow-capped peaks in the winter and sun-drenched valleys in the summer supports a thriving tourism economy and enviable quality of life. The climate's role in sustaining both is undeniable. Thus Aspen has been a leader for well over a decade in solutions to global climate change and the adoption of clean, renewable energy.

PART OF THE BIGGER PICTURE

In 2005 Aspen established the "Canary Initiative," which acknowledged that mountain towns like Aspen are seeing the impacts of climate change before others—like "canaries in the coal mine"—and need a concerted effort to, in part, "protect powder days." The City Council adopted the Canary Action Plan two years later, committing to a community-wide greenhouse gas emissions reduction goal of 30% by 2020 and 80% by 2050 (below 2004 levels) along with the renewable energy target and energy efficiency initiatives. The decade between 2004 and 2014 saw a 7% reduction in community-wide emissions and 42% reduction in emissions associated with City of Aspen operations, and the city assumes an emissions "budget" that decreases 2% every year.

By 2014 Aspen was using 75-80% renewable energy and had contracted with the National Renewable Energy Laboratory (NREL) based in nearby Golden to help them assess their energy supply and demand options. NREL worked with the city to define what would qualify as "renewable" and to identify the most feasible and cost-effective opportunities to meet the 100% goal. Part of the end result was a 2015 contract with Municipal Energy Agency of Nebraska to buy wind power from Nebraska and South Dakota. That allowed wind to take the place of the remaining coal on the grid and hit the 100% mark.

Aspen's mix is now approximately 50% wind, 45% hydropower, and the remaining 5% from solar—including solar at the water treatment plant and solar thermal powering an affordable housing neighborhood—and landfill gas. Hydropower has been a source of energy in Aspen since the 19th century, when the city was the first west of the Mississippi to tap the power of water to power the electrified street lamps, which were the first in the West. Two new dams built in the 1980s have kept that energy source front and center.

IN THEIR WORDS:

"A lot of hard work, a commitment to a long-term goal and having a vision is what enabled us to get here. Nothing comes easy....20 years later, we've accomplished what we thought was impossible...I wanted to have confidence that what we're doing is more than just a measure for us to celebrate our own successes. I want to make sure that we have things that are replicable and scalable for other communities to adopt." —Aspen Mayor Steve Skadron

BURLINGTON, VT

Largest city in Vermont finds that economics of renewables align with environmental values.

100% RENEWABLE ELECTRICITY (ACHIEVED 2014)

- Population 42,282
- Vermont: RPS 75% by 2032; Allows Power Purchase Agreements, community solar
- Utility: Burlington Electric (municipal)
- Vermont's largest city
- First city in the country to cross 100% threshold

Burlington is located in a state known for maple syrup and skiing—two economic drivers that stand to suffer from the impacts of a warming climate. It's the type of progressive town you might expect to cross the 100% renewable energy finish line first. And it did just that in 2014 when it purchased the 7.4 megawatt (MW) Winooski River hydropower facility at the city's edge, a move supported by 80% of voters.

The power mix for Burlington—a city that once relied on coal and reached an almost 50% renewable energy portfolio in 2011—is now:

- Biomass from wood chips (30%)
- Landfill methane, wind and solar (20%)
- Hydropower (50%)

Buoyed by Vermont's statewide goal of 90% renewables by 2050, Burlington's push was no doubt fueled in part by the progressive, pro-environment values for which it is known. But ultimately, say city officials, it came down to economics where a shift to renewables was the "cheapest long-term financial investment…with the least amount of risk." Burlington estimates it will save $20 million over the next 20 years by moving away from fossil fuels. And customers have seen a direct benefit, too: most of the country has been dealing with gradual rate increases while Burlington's rates have not gone up since 2009.

With implementation of the 100% goal riding on power purchase agreements, one of Burlington's keys to success was to sign short-term contracts for traditional fossil fuel energy, giving the city supply stability until the right renewables opportunities presented themselves.

LAYING THE GROUNDWORK

The 100% renewables goal is easiest to achieve for cities that use less energy—which could be the result of smaller size or policies that promote energy efficiency. Burlington meets both criteria. An estimated $30 million has been invested in energy efficiency in Burlington in the last two decades—through a voter-approved bond measure in 1990 and a state energy-efficiency charge. The result is that Burlington uses only minimally more energy now than it did in 1989.

IN THEIR WORDS:

"The transition in thought from 2004 to 2008 was from 'We want to do this' to 'This actually makes economic sense for us to do this.'" —Ken Nolan, the manager of power resources for Burlington Electric

EAST HAMPTON, NY

Beach community considers offshore wind and other renewables to stave off climate impacts effects and to decrease energy costs.

100% RENEWABLE ELECTRICITY BY 2020; HEATING/ COOLING AND TRANSPORTATION BY 2030

- Population 21,500
- Legislative commitment adopted in 2014
- New York: RPS 50% by 2030 (policy under development, directive of governor); Allows Power Purchase Agreements, community solar
- Utilities: Long Island Power Authority (LIPA), the second-largest municipal utility in the country, and PSEG Long Island (municipal)
- Key Entities Involved: Town Board, Energy Sustainability Committee, nonprofit Renewable Energy Long Island
- Second homes comprise half of the housing stock, driving up peak summer demand for electricity
- Located on a peninsula among the Atlantic ocean and several sounds and bays, leaving it vulnerable to sea level rise and storms

Located on a peninsula on New York's Long Island, the Town of East Hampton is known for some of the country's wealthiest zip codes and as a summer getaway for New York City's most affluent residents—indeed, half of the homes are second homes. But money alone can't insulate communities from the effects of climate change, including sea level rise and "superstorms" like Hurricane Sandy, that walloped the area with blackouts and damage in 2012.

That, along with the New York State Executive order to reduce greenhouse gas emissions across all sectors 80% by 2050, was part of the Town's impetus to adopt a Comprehensive Energy Vision in 2013. The Vision called out potential cost savings and environmental and public health benefits and the need for specific energy efficiency and renewables goals. The town's Energy Sustainability Committee recommended the 100% renewable energy goal (for electricity by 2020 and for heating and transportation by 2030) to the Town Board which unanimously adopted the resolution in May 2014.

A draft Climate Action Plan released in October 2015 identifies a number of options for reaching the goal, including the development by an outside consultant of the "D.R.E.A.M. Plan," or Decentralized Resilient Energy Assessment and Management plan, that will specify energy efficiency and renewable energy policy options. Also called out in the plan as options for meeting the 100% goal: providing incentives in the form of rebates and tax abatements for energy efficiency and solar, and working to fast track solar and wind permitting for commercial properties.

FACTORS IN FAVOR OF RENEWABLES

- The two local utilities—Long Island Power Authority (LIPA) and PSEG Long Island—have a solar Feed-In-Tariff and several large-scale solar farms are planned for town-owned land
- A major offshore wind farm—which would be the second in the U.S.—is in the final stages of consideration, and a chunk of the power generated from the 15 turbines would go to East Hampton
- In recent years, new overhead and "unsightly" power lines have caused controversy and legal action and made renewables even more appealing
- The City has identified more than 10 municipal properties for solar and other renewable energy production and has made it easier for residents to get permits for solar installations
- The local nonprofit Renewable Energy Long Island (reLI) has helped drive the effort and generate grassroots support for plans to implement the goal, including the wind farm

IN THEIR WORDS

"Energy efficiency improvements and solar rooftop systems can save homeowners several of thousand dollars a year, while building local solar farms can generate hundreds of thousands of dollars in lease revenue for the town. Making the switch to clean energy is just the right thing to do, both for the environment and for keeping more money in the local economy and creating jobs here." —Town Supervisor Larry Cantwell

GEORGETOWN, TX

Deep in oil country, a city makes headlines for embracing wind and solar power to save money and water.

100% RENEWABLE ELECTRICITY BY 2017

- Population: 54,898
- Texas: RPS 10,000MW by 2025; Allows Power Purchase Agreements, community solar
- Utility: Georgetown Utility Systems (municipal)
- Key Entities Involved: Mayor, City Council, Utility Board, Electric Department staff, private sector partners
- Located in one of the fastest growing regions in the country, 25 miles north of Austin

"I'm probably the furthest thing from an Al Gore clone you could find. We didn't do this to save the world—we did this to get a competitive rate and reduce the risk for our consumers." Jim Briggs, Interim City Manager for Georgetown Texas, shared that oft-quoted perspective on the City's plan to buy 100% renewable energy by 2017. It was in one of dozens of stories that made the headlines in 2015 when the City-owned utility, Georgetown Utility Systems, inked a 25-year deal with SunEdison to buy 150 MW from solar plants to be constructed in West Texas. That was after a 2014 deal with EDF to buy 144 MW from the Spinning Spur 3 wind farm in West Texas over the next two decades.

It all started in 2008 when the Utility Board and the City Council approved a Renewable Portfolio Standard of 30% by 2030 and then in 2012 asked the utility to find new contracts that met four criteria:

1. Low-cost resources
2. Long-term contracts with fixed prices
3. Mitigate as much financial and regulatory risk as possible
4. Achieve, at a minimum, the 30% renewable by 2030 goal

The result was a combination of wind and solar bids that beat out the fossil fuel prices, so the Council bumped the RPS up to 100%.

Some of the factors that made this bold move not just possible for a town in Texas, but also smart and savvy:

Ample Resources: Long known for its abundant supplies of oil, Texas is now the country's renewable energy capital. Texas produces more wind power than any other state and is home to a significant solar reserve that is just beginning to be tapped. The combination wind-solar portfolio will let the utility utilize solar power during peak daytime hours and then switch to wind sources during the night which is when wind is most abundant

State Support: Texas invested $7 billion in a Competitive Renewable Energy Zone program that paid for the transmission lines—often a barrier for renewables projects—that can get wind and solar energy from production points in hotspots like West Texas to all over the state—including Georgetown.

Cheap and Stable: The deals with big renewable companies gave Georgetown cheaper rates than their previous wholesale contracts. Plus, the city signed long term contracts with fixed costs, giving them a buffer against market volatility and allowing them to offer customers predictable rates.

Drought Tolerant: Texas has been ravaged by drought in recent years, and fossil fuels require huge amounts of water that renewable energy production does not.

IN THEIR WORDS:

"This was a business decision and it was a no-brainer. This is a long-term source of power that creates cost certainty, brings economic development, uses less water, and helps the environment." —Georgetown Mayor Dale Ross

GRAND RAPIDS, MI

A decade of pursuing clean energy under a robust sustainability umbrella.

100% RENEWABLE ELECTRICITY BY 2020 (STATUS: 25% IN 2013)

- Population: 192,000 (2013); More than 1.3 million in metropolitan area
- Legislative commitment, part of Sustainability Plan
- Michigan: RPS 10% by 2015 (met); Allows Power Purchase Agreements, community solar
- Utility: Consumers Energy (investor owned)
- Key Entities Involved: Mayor, Office of Energy and Sustainability, Renewable Energy Team
- Second largest city in Michigan
- Located on the Grand River east of Lake Michigan

A decade ago Grand Rapids set a goal of powering the city 20% renewable energy by 2008—a goal it met a year early. That's when the city and its former mayor, George Heartwell, got even more ambitious with a 100% renewables goal by 2020. As of 2014 Grand Rapids had hit 25% and along the way racked up a host of accolades like the 2012 U.S. Conference of Mayors Climate Protection Award, the 2010 Siemens Sustainable Community Award, and the moniker "America's Greenest City" by Fast Company magazine in 2008. It was also recognized by the U.S. Environmental Protection Agency as one of the top 20 local government purchasers of green power.

WHO IS INVOLVED

Mayor for 12 years before he was term-limited in 2015, Heartwell was the leading driver for Grand Rapids' clean energy push. But support from the Board of Commissions was critical—and strong. Heartwell's successor, current Mayor Rosalynn Bliss, has carried the torch as the city strives to meet the 100% goal.

The clean energy goal falls under the Office of Energy and Sustainability and is included in Grand Rapids' comprehensive Sustainability Plan. The City also has a Renewable Energy Team comprised of the Mayor, two City Commissioners, and key City staff and stakeholders. Grand Rapids also benefits from a Community Sustainability Partnership, formed in 2005, of more than 200+ local businesses and organizations supporting sustainability initiatives.

HOW THEY PLAN TO DO IT

- **Reduce:** The less energy the City uses from any source the better, plus it saves money. Energy efficiency measures include: new energy efficient windows at City Hall; geothermal heating at fire stations; solar panels on City buildings; LEED-certified public schools and City buildings; and LED street lighting (planned)
- **Purchase:** Buy Green-e Certificate renewable energy credits (RECs) from the local utility Consumers Energy
- **Produce:** Two planned solar facilities, including one at the former Butterworth landfill that would help power a wastewater treatment facility

IN THEIR WORDS

"I say to colleague mayors, 'Start something. Start small. Put solar panels on your city hall building. Stick some money away and do a geothermal project on one of your buildings. Or simply buy the RECs or buy the power from your public utility and get certification that it's green power. But start some place. Once you get started, it actually feels pretty good.'" —Former Grand Rapids Mayor George Heartwell

GREENSBURG, KS

Nearly wiped out by a tornado, this rural town reinvented itself with "Green" at the center.

100% RENEWABLE ELECTRICITY (ACHIEVED 2013)

- Population 785 (down from 1,400 pre-tornado)
- Legislative commitment, as part of Sustainable Comprehensive Plan
- Kansas: RPS 20% by 2020 (voluntary); allows community solar
- Utility: Greensburg Utilities (municipal)
- Massive tornado in 2007 damaged or destroyed 95% this town in south central Kansas
- Adopted the motto "Rebuilding…Stronger. Better. Greener." With sustainability at the core of the town's economy and identity

When Greensburg was nearly wiped off the map after a massive tornado in May of 2007, the community didn't pack up and move away. Instead, they rallied together at meetings in a big tent outside of the ravaged town and hatched a plan—one that redefined the town and the way the country thinks about sustainability and energy at the local level.

Those meetings gave birth to the Sustainable Comprehensive Plan, which was developed alongside the Long-Term Recovery Plan, that called for 100% renewable energy—both were passed by the City Council in December 2007 just months after the tornado. The nonprofit Greensburg Green Town was formed to help educate and empower residents on sustainability and clean energy, and considerable community dialogue took place that fostered a better understanding of and support for the clean energy transition.

Greensburg has been able to meet this goal with energy efficiency (the town also adopted a requirement that all buildings greater than 4,000 square feet must be LEED Platinum), small-scale solar and geothermal—but the resource that Greensburg has harnessed with the most impact is the wind. As Mayor Bob Dixson says, "The wind that destroyed Greensburg is also the wind that would make us energy sustainable."

The 12.5 MW Greensburg Wind Farm is located just outside of town and can provide more energy than the town needs. Indeed, two-thirds of the power in Greensburg is excess and sold back as Renewable Energy Credits—initial purchasers of the carbon offsets included Ben and Jerry's and Clif Bar. In a sign of the times, the John Deere dealership—housed in a LEED Platinum-certified space—now doubles as a wind turbine distributor serving Greensburg and the surrounding region.

GOING GREEN FROM SCRATCH

The decision to build the town back based entirely on green principles ran far deeper than rebranding. And the vision wasn't seen as cheap at first—rebuilding in an eco-friendly way was estimated to cost 20% more. But that investment, which includes the following features, is already paying off—Greensburg is saving $200,000 annually in energy costs for 13 of its largest buildings.

HERE ARE SOME WAYS THEY'RE DOING IT:

- Net metering ordinance to make renewable energy more affordable for all residents
- Most LEED certified buildings per capita in the country
- First city to use all LED streetlights
- Wind turbines atop the arts center, hotel, hospital and school

IN THEIR WORDS

"We did not just want to be a surviving community. We wanted to be a thriving community. As our ancestors built a community for us, we needed to build a community for future generations." —Mayor Bob Dixson

ROCHESTER, MN

Major economic development initiative and community engagement key to city's energy future.

100% RENEWABLE ELECTRICITY BY 2031

- Population 100,000
- Administrative commitment
- Minnesota: RPS 25% by 2025 (municipal utilities); allows community solar
- Utility: Rochester Public Utilities (largest municipal utility in the state)
- Key Entities Involved: Mayor, City Council, Energy Commission, Destination Medical Center representatives
- Hub for the healthcare industry, with a massive new Destination Medical Center under development

Major changes are underway in Rochester, a city that is home to healthcare powerhouses like the Mayo Clinic. Development has started on the multi-billion dollar Destination Medical Center (DMC), a project that would revamp downtown in an effort to position the city as the "world's premier destination for health and wellness." The project will have a massive footprint—an additional 12 million square feet of office space and more than 35,000+ jobs—and the push is on to ensure it is done with energy efficiency, renewables, and overall sustainability principles at the core.

In December 2015 the Center for Energy and Environment and Ever-Green Energy released a report outlining how the DMC can be a net zero energy user, including the creation of a Sustainable Energy Zone, maximizing energy efficiency and renewables in building design and promoting the health benefits of sustainability.

Meanwhile, Mayor Ardell Brede signed a proclamation in 2015 that Rochester would strive to run on 100% renewable energy by 2031.

PUBLIC SUPPORT AND ENGAGEMENT

While meeting the goal will be a challenge, Rochester isn't starting from scratch. Rochester's City Council created an Energy Commission in 2009 and charged it with: conducting a baseline greenhouse gas emissions inventory; recommending how to lower energy use and emissions; and develop, implement and track a local Energy Action Plan as part of the city's Comprehensive Plan. The Commission is expected to release that Action Plan in 2016 and hosted a public forum as part of a community-wide discussion on the DMC in November 2015. Rochester also enrolled in the Minnesota Green Step Cities program in 2013, a voluntary challenge, assistance and recognition program to help cities achieve their sustainability and quality-of-life goals, and has been reporting progress on a variety of sustainability and clean energy metrics.

Forces outside of Rochester could buoy the renewables push. Minnesota has a statewide goal of 80% reduction of greenhouse gas emissions by 2050. Rochester Public Utility has announced that—due to economics, customer feedback, and infrastructure limitations—it will not renew its contract with Southern Minnesota Municipal Power Authority in 2030, essentially meaning it will be "coal free" and able to add more clean energy sources. This is after the utility retired the coal-fired Silver Lake Plant in 2015.

So far support from the community is strong. Conservation Minnesota conducted a survey of Rochester residents in 2014 that included a question as to whether they would support a City Council resolution requiring energy to be sourced from renewables: 68% supported the notion (47% of them strongly). Similarly RPU's annual customer survey in 2015 found that half of respondents would pay more to help efforts to reduce greenhouse gas emissions and 83% of residential customers and 70% of commercial customers supported investigating solar power options.

IN THEIR WORDS

"I think we have a good step forward on a lot of things. It'll be a challenge, but…if we don't have a goal then you'll never get it." —Mayor Ardell Brede

SAN JOSE, CA

Center of Silicon Valley embraces solar solutions and innovative approaches in Green Vision quest.

100% RENEWABLE ELECTRICITY BY 2022 (STATUS: 24% 2013)

- Population: 960,000
- Legislative commitment, adopted as part of Green Vision in 2007
- Utility: Pacific Gas & Electric
- Key Entities Involved: Mayor, City Council, Environmental Services Department, Transportation and Environment Committee, nonprofit San Jose Community Energy
- First large city in the U.S. to push 100% goal

Located in the heart of Silicon Valley and the home of the clean tech industry, San Jose is a natural born leader when it comes to innovation and clean energy. It was the first large city in the country to adopt the 100% renewables goal in 2007 as part of a 10-point Green Vision proposed by then Mayor Chuck Reed and adopted by City Council. The 15-year vision had other game-changing goals such as: reducing energy use per capita by half; planting 100,000 new trees; 100% recycling of wastewater; 60 miles of new trails; and creating 25,000 clean tech jobs. Yet it was the 100% renewables goal that made the most waves and has been hardest to achieve.

Solar power has been central to San Jose's clean energy progress. The city has used power purchase agreements to install solar at city facilities and supported their use in the community, removed a building permit requirement for rooftop solar to make it easier for residents, and enabled Property Assessed Clean Energy (PACE) financing for residents and businesses to finance solar and energy efficiency upgrades. Reducing energy use has also been a priority with initiatives such as the Step Up and Power Down program to help businesses save energy and money.

CROSSING THE FINISH LINE

Despite some of these bold moves, San Jose recognized that it is still shy of its goal with sizable roadblocks in the way. Perhaps the biggest impediment is the energy the city can source: PG&E offered 27% renewables in 2014 and is only projected to be at 33% by 2020, per state mandate.

One solution for the City to quickly scale up its clean energy portfolio is through Community Choice Aggregation, whereby the City essentially becomes a utility that buys power wholesale directly from producers. These programs, operating in several California communities already, let the cities offer up to 100% renewable power packages.

Thus, the Environmental Services Department recommended that San Jose pursue Community Choice Aggregation through a request for proposal (RFP) that would identify a private partner to develop, finance and operate a CCA program. The City's Transportation and Environment Committee supported the move unanimously, and in March 2016 the full City Council did as well. The move has plenty of behind-the-scenes and community support, including the nonprofit San Jose Community Energy that is dedicated to bringing the CCA model to the area.

IN THEIR WORDS

"Our 'green vision' is a road map to becoming the center of innovation in clean technology," —Mayor Chuck Reed.

SAN DIEGO, CA

Sun splashed city sets renewable energy pace with unanimous, bipartisan support.

100% RENEWABLE ELECTRICITY BY 2035 (STATUS: 33% IN 2014)

- Population: 1.37 million
- Legislative commitment, part of Climate Action Plan introduced in 2015
- California: RPS 50% by 2030 (33% by 2020 for utilities procurement); allows Community Choice Aggregation, Power Purchase Agreements, and community solar
- Utility: San Diego Gas & Electric (investor owned)
- Key Entities Involved: Mayor, City Council, Economic Development Department, Environmental Services Department, Climate Action Plan Implementation Working Group, sustainable Energy Advisory Board
- Eighth largest city in the U.S. and second-largest in California
- First large city in U.S. to commit to legally binding 100% renewables goal

They say the sun is always shining on San Diego, and right now the spotlight is also shining on this bustling coastal town in southern California. And not for the beaches and surfing, but for its trailblazing move to make a legally binding commitment to 100% renewables in the next two decades—the strongest clean energy plan in the country.

Championed by a Republican mayor with unanimous, bipartisan support from the City Council, the commitment was unveiled as part of an ambitious and binding Climate Action Plan in 2015—one that was developed by his Democratic predecessor and kept largely intact. The Plan was pitched in part as a way to address climate change and, in doing so, improve public health, support the economy, and protect the region's quality of life. The Mayor sold the plan to business leaders and conservatives by highlighting the economic and jobs benefits including the potential growth of the City's cleantech sector with jobs in the manufacturing and installation of solar panels. There was also a dose of local pride, as the Plan shot San Diego to the head of the class among cities nationwide embracing climate and clean energy solutions.

GETTING FROM HERE TO THERE

The devil will be in the details for San Diego, but right now a host of visionary options are on the table to get the City to 100%. This includes the big-ticket goal of exploring Community Choice Aggregation whereby the City essentially becomes a utility, buying power wholesale directly from producers. Other pieces that would help complete the puzzle:

- Implement through policies, ordinances, and programs to facilitate the adoption of solar power by residences and businesses
- Aim for 90% of the City's fleet to be electric vehicles
- Expand the conversion of landfill gas to biogas and run waste and recycle trucks on that fuel
- Provide funding for youth and veteran training in solar energy careers

IN THEIR WORDS

"Today San Diego took a landmark step toward securing a greener and more prosperous future. We've done something remarkable, bringing business and environmental interests together in a bipartisan manner to support a cleaner community and a stronger economy. We've struck the right balance with this plan, and San Diegans can look forward to more clean technology, renewable energy and economic growth." —Mayor Faulconer

SAN FRANCISCO, CA

Leading green city uses Community Choice Aggregation to give consumers a choice and seal the deal on renewables goal.

100% RENEWABLE ELECTRICITY BY 2030

- Population 864,000
- Administrative commitment
- California: RPS 50% by 2030 (33% by 2020 for utilities procurement); allows Community Choice Aggregation, Power Purchase Agreements, and community solar
- Utility: Pacific Gas & Electric (investor owned), SF Public Utilities Commission (CCA administrator, municipal power)
- Key Entities Involved: Mayor, Board of Supervisors, Mayoral Task Force, Department of the Environment, SF Public Utilities Commission
- Second most densely populated city in the country with 18,400 people per square mile
- Community Choice Aggregation program brings renewable energy options to homes and businesses

The list of "greenest city" accolades for San Francisco would fill many pages and go back decades, so it's no surprise that the city is among the leaders in adopting and implementing a 100% renewable electricity goal. It stems in part from the City's landmark Climate Action Plan in 2004, with a goal of reducing greenhouse gas emissions 80% by 2050.

As Mayor Gavin Newsom prepared to leave City Hall as the new Lieutenant Governor of California in 2010, he made the 100% renewable electricity commitment official. His successor, Mayor Ed Lee, convened a Mayoral Task Force led by the City's Department of the Environment with local renewable energy leaders and key stakeholders to determine the pathway for success. With $250,000 in grant funding to develop an implementation plan, they released their report in 2012 with the following six strategies among many recommendations for meeting the 100% goal:

1. Energy efficiency, including the promotion of audits and retrofits, and use of building energy data
2. Encourage local renewables like solar, including: streamline solar permitting; support net metering; develop a feed-in-tariff
3. Break down barriers for renters
4. 100% renewable power purchasing options, including Community Choice Aggregation (CCA), whereby the City controls energy supply for participating customers, buying power wholesale directly from producers
5. Encourage private investment, including clean energy financing
6. Expand access to renewables for residents of all income levels

THE NEW UTILITY IN TOWN

California and San Francisco, in particular, are places where innovative ideas—especially when it comes to environmental protection and clean energy—are born and perfected.

The item in the task force report that has garnered the most attention is Community Choice Aggregation (CCA) in the form of CleanPowerSF. It was originally adopted in San Francisco in 2004, and after a few iterations, Mayor Lee asked the San Francisco Public Utilities Commission to launch the program with the requirements that it must:

- Create local jobs
- Be municipally owned and located
- Be rate competitive with PG&E
- Protect low-income residents

CleanPowerSF started enrolling commercial customers in early 2016 and will be rolled out to residences starting in the fall. Customers can choose the basic "Green" package which is a 35% renewable energy blend, pay $6 more a month for the "Super Green" 100% renewable blend, or opt out and stay with PG&E. CleanPowerSF expects to enroll 55,000 customers by the end of 2016.

IN THEIR WORDS

"We know that we are in a national city, a popular city, but we also want to be a city that contributes to the challenges of climate change and improves our world," said San Francisco Mayor Ed Lee. "If we can do that here, I suggest that we can do that anywhere."

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