HOW A FOCUSED NEVADA MUNICIPALITY LAUNCHED A PIONEERING CITY ENERGY PROJECT AND DELIVERED RESULTS THAT MAKE A DIFFERENCE

RENO’S TRAILBLAZING INITIATIVE COMBINED PHILANTHROPIC SUPPORT WITH LOCAL SPONSORSHIP, COMMUNITY COMMITMENT AND THE LEADERSHIP OF LOCAL GOVERNMENT.
RESULTS THAT RENO DELIVERED

BY 2030, AN ENERGY BENCHMARKING ORDINANCE IS EXPECTED TO DELIVER:

• $19 million in energy efficiency investments
• $75 million in energy savings (4-to-1 return)
• 152 million gallons less water consumption
• 15% CO₂ emissions from commercial electricity (373 thousand tons avoided)

CITY INVESTMENTS IN ENERGY EFFICIENCY PROJECTS IS ESTIMATED TO GENERATE:

• $48,700 in annual energy savings

2018 INTERNATIONAL ENERGY CONSERVATION CODE IS PROJECTED TO PRODUCE:

• 18% annual energy savings (2.2 billion kBtu per year)

REENERGIZE RENO BUILDING CHALLENGE IS GAINING MOMENTUM:

• 131 commercial buildings totaling 8 million square feet
• 22 educational events on building efficiency and green building
• 900 commercial real estate professionals registered for events
• 16 noteworthy commercial projects and inspirational leaders honored

RENO C-PACE PROGRAM FIRST THREE YEARS EXPECTS TO PROVIDE:

• 21 energy efficiency and clean energy projects financing
• $19.5 million in energy efficiency and clean energy investments
HOW DID A MID-SIZED CITY WITH LIMITED RESOURCES DELIVER SUCH IMPRESSIVE RESULTS?

First, a little background

As the fastest-warming city in the United States, Reno feels the threat of climate change. In recent years, the city of 250,000 at the base of the Sierra Nevada has seen decreasing snowpack, multi-year droughts, dramatic increases in flooding and more frequent wildfires.

With those threats ever-present, the City of Reno has undertaken numerous initiatives to create a climate-resilient future.

In 2015, city leaders signed the Compact of Mayors, now the Global Covenant of Mayors, and joined Reno’s commitment to the acceleration of ambitious, measurable climate and energy initiatives. Through the Global Covenant, the city committed to reduce carbon emissions by 28 percent by 2025 compared with 2008 levels.

In 2016, the City of Reno was invited to join the City Energy Project as one of 20 pioneering cities working to strengthen local economies and reduce climate pollution by reducing energy waste in large buildings.

The City Energy Project (CEP) was a joint initiative of the Natural Resources Defense Council and Institute of Market Transformation. The City of Reno benefited from the guidance, support and resources provided by CEP staff and peer-learning exchange among participating cities.

The support of the City Energy Project proved particularly important to advancement of the City of Reno Sustainability and Climate Program, an ambitious effort that had permanent funding for only one full-time manager and an annual budget of $27,500.

The supplemental funding provided by the City Energy Project allowed the city to overcome limitations on its ability to reduce climate pollution.

WHY THE CITY ENERGY PROJECT MADE SENSE IN RENO

Although carbon emissions fell by 13.6 percent in Reno from 2008 to 2014, large buildings played a relatively small role in the improvement. That created an opportunity for significant change.

The EPA estimates that as much as 30 percent of the energy used in buildings is wasted through inefficiencies. In Reno, commercial real estate generates 32 percent of community-wide emissions. That’s the city’s single largest contributor to climate pollution.

The City Energy Project identified numerous factors that stymie investment in energy efficiency in commercial buildings — limited information, misaligned incentives, lack of capital.

With the programmatic and financial assistance of the City Energy Project, the city believed that Reno could marshal the resources, both at City Hall and through the private sector, to deliver meaningful change.

BROAD-BASED PRIVATE SECTOR SUPPORT PROVED CRITICAL IN POLICY DEVELOPMENT

Green building nationwide is predominantly market-driven by client and market demand. Corporate leaders believe that leadership in sustainability differentiates their companies in the market and improves financial performance. At the same time, buildings that benchmark energy performance save energy and money, a key consideration for building owners and managers.

The City of Reno embarked on an effort to establish an energy benchmarking policy to drive investment in energy-efficient buildings. As the city developed an energy benchmarking and transparency policy for commercial buildings, it relied on the expertise of a technical committee that included representation from more than 50 organizations — developers, property owners and managers, contractors, industry associations, nonprofits, government agencies and others.

The technical committee stepped up and helped shape a policy that includes varied no-cost and low-cost pathways to encourage energy efficiency, particularly in lower-performing buildings.

An ordinance adopted in early 2019 details benchmarking and transparency requirements for energy efficiency in commercial buildings larger than 30,000 square feet. The measure is expected to deliver cash savings of $75 million to building owners through 2030, almost a 5-to-1 return on projected energy investments of $19 million.

Water consumption is projected to decline by 152 million gallons, and carbon dioxide emissions associated with energy production for commercial buildings are projected to fall by 13 percent. Lower levels of nitrous oxide and sulfur dioxide also are projected to improve air quality as a result of the ordinance.

The strong and enthusiastic support of stakeholders delivered important momentum to the City of Reno initiative.
LEADING BY EXAMPLE HELPED TO BUILD TRUST AND DELIVER RESULTS

The City of Reno in 2017 joined the U.S. Department of Energy’s Better Buildings Challenge and committed to improve the efficiency of municipal buildings by 20 percent by 2025. Even with a limited capital improvement budget, the initiative was strongly supported by the decisions of stalwart city officials who began to make modest investments in improving the energy efficiency of city buildings.

A LED lighting retrofit at City Hall, for instance, trimmed energy and demand costs by $15,200 annually. A similar retrofit at the neighboring parking garage will save taxpayers about $9,900 a year.

A retro-commissioning grant from the Nevada Governor’s Office of Energy allowed the city to perform analysis and make adjustments that found relatively simple, fast-payback energy improvements at city recreation centers, swimming pools and fire stations.

Through sharing the results of its own work, the City of Reno demonstrated cost-effective pathways to energy efficiency in all types of commercial buildings.

A COMMUNITY-WIDE BUILDING CHALLENGE CREATED MOMENTUM

The City of Reno understood it needed the commercial building sector to create positive change for the community. So it launched a community-wide and locally-branded Better Buildings Challenge and challenged leading corporate and university executives, state and local government leaders, building owners, and multifamily housing developers to join in “ReEnergize Reno.” The city committed to supporting their efforts through education, technical support, and recognition.

Participants committed to reduce energy and water consumption in their buildings by 20 percent by 2025. Again, the response was enthusiastic. Participants include owners of 131 buildings totaling more than 8 million square feet.

Leaders who took up the challenge included owners of large and medium-sized office buildings, industrial buildings, casinos, schools and multi-family complexes. These building owners and managers are also helping to secure Reno’s clean energy future.

INCREASING KNOWLEDGE HELPED TO EXPAND LOCAL EXPERTISE

Most owners and managers of large buildings want to do the right thing to improve the efficiency of their properties — especially if a strong business case exists.

The commercial real estate sector enthusiastically received an industry education program created by the City of Reno to increase local expertise in green building and energy efficiency. Nearly 900 registrants have participated in a series of monthly educational events that began in December 2017. The 22 events included half-day workshops that provided deeper opportunities for learning about green building and energy-efficiency in commercial buildings. Deeper trainings covered a range of topics from LEED products for new construction and major renovations, interior design and construction, and operations and maintenance, to green affordable housing and sustainable historic preservation.

Even more intensive training was undertaken by 13 building and energy professionals during a city-sponsored, two-day course that covered topics such as history of green-building policy, the use of environmentally friendly cleaning products and boiler and HVAC maintenance. At the completion of the course, participants were awarded the GPRO: O+M certification through the Urban Green Council. The City of Reno hopes to offer similar trainings in the future.

CELEBRATING THE ACCOMPLISHMENTS OF INDUSTRY LEADERS ELEVATED THE STANDARD OF PRACTICE

The City of Reno launched its Green Building Awards program in 2018 honoring private and public organizations that made significant contributions to green building and building efficiency. The program raised awareness of their efforts. Among the honorees in 2019 were a major hotel-casino that developed geothermal resources on its property, an older office building that made significant investments in energy efficiency, a homebuilder committed to the National Green Building Standard, school districts that undertook wide-ranging energy-related projects to achieve high ENERGY STAR ratings, and the developers of LEED-certified new construction.

Each honoree received a custom-made award created by a local artist from reclaimed materials.
LEADERSHIP ISN’T TALKING. LEADERSHIP IS DOING.

The City of Reno demonstrated its commitment to the City Energy Project through careful analysis of energy use in its own municipal buildings. And the results demonstrated to the owners of private-sector buildings that substantial savings — in dollars as well as energy consumption — are available with only modest investments.

Working with the consulting firm of McKinstry Co. LLC, the city’s retro-commissioning program took a close look at the operation and maintenance of building operating systems. The goal: Improvement of the buildings’ entire performance.

The city’s work showed the owners of private commercial buildings that retro-commissioning is among the lowest-cost approaches to saving energy. For instance, the analysis found that the net investment of $6,505 in energy conservation measures at a neighborhood community center would generate savings estimated at $10,815 a year. That’s a seven-month payback.

Energy improvements carrying net cost of $9,915 at one city-owned swimming pool would generate estimated savings of more than $7,000 a year. At another pool, an investment of $5,125 would generate savings estimated at $2,544 annually.

Analysis of six city fire stations also found cost-effective opportunities for improvements. At one station, for instance, the retro-commissioning team found abandoned ductwork that caused air leaks and boosted heating costs. In all, relatively modest energy-conservation measures at the fire stations are expected to generate savings of about $3,200 a year on a net investment of about $7,500.

ENERGY CONSERVATION MEASURES (ECM) OPPORTUNITIES IDENTIFIED

<table>
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<th>Retro-Commissioning Projects</th>
<th>ECM Cost</th>
<th>Est Annual Savings</th>
<th>NE Energy Rebate</th>
<th>Net ECM cost</th>
<th>Simple Payback</th>
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(Rebates available from NV Energy, the area’s electric utility, reduce the net cost and improve the return on investment of energy-conservation measures.)

Along with financial savings that accompanies reduction of its energy usage, the city’s commitment to retro-commissioning demonstrated to private-sector building owners that some improvements are entirely cost-free. Optimizing the setpoints for heating and air-conditioning systems in fire stations, for instance, required no investment at all to improve building performance and increase the comfort of its occupants.
SIMPLE-TO-USE TOOLS SUPPORT ENERGY CODE COMPLIANCE

As the City of Reno adopted the 2018 International Energy Conservation Code (IECC) in the midst of a frenetic rush of industrial construction, compliance wasn’t a big issue for the major local contractors and design firms, and the national and international builders and design firms that have flocked to the city. Their teams of professionals, after all, are well acquainted with the 2018 IECC through their daily work on big projects in Reno and other markets across the United States.

But for builders and design teams on smaller industrial projects — projects involving 5,000 to 20,000 square feet — the city’s adoption of the 2018 IECC from the 2012 IECC posed the potential for widespread compliance issues. A focus on compliance, however, is paying off.

Compliance with the new code now is estimated to produce an 18 percent annual energy savings in Reno — reflecting a reduction of more than 2.2 billion kBTu of energy use per year. Those savings won’t just happen with adoption of the new code. Often, industry professionals who aren’t familiar with IECC requirements simply don’t know where to start.

Creation of simple-to-use Prescriptive Compliance Forms, however, promises to substantially reduce compliance issues on smaller construction and tenant-improvement projects. A two-page form composed largely of straightforward questions walks the owner, builder and designer of a small or mid-sized industrial or distribution facility through the requirements of the 2018 IECC. A similar form walks building-permit applicants through compliance with lighting requirements of the new IECC.

Because the forms require applicants to provide documentation in their application for a building permit, an applicant who has completely provided the information detailed on the forms can walk away with the assurance that the project meets IECC requirements. The Prescriptive Compliance Forms dovetail with the COMcheck tool developed by the U.S. Department of Energy.

A streamlined process that leads to assurance that a project complies with IECC has proven to be a major selling point for contractors and owners eager to move quickly in the booming construction market. The Prescriptive Compliance Forms also support the extensive industry educational efforts — including multiple workshops and Webinars — the city undertook with partners as it rolled out the new IECC in 2019.

INNOVATIVE FINANCING WILL IMPROVE ACCESS TO CAPITAL

In 2017, Nevada authorized Commercial Property Assessed Clean Energy (C-PACE) financing programs to encourage investment in green building, energy efficiency and renewable energy by allowing loan repayments through a voluntary assessment on property tax bills.

C-PACE programs provide a useful financial tool to investors in commercial real estate through longer-term financing of improvements as well as the ability to transfer the repayment obligation to the next owner when the building is sold. Funding for C-PACE loans in Reno is available through traditional financial institutions and private-equity investors.

The City of Reno was invited to be a part of the U.S. Department of Energy’s Local Government C-PACE Working Group, which aims to streamline local government C-PACE programs and share best practices. Learning from the best practices of other municipalities, the City of Reno contracted with a firm to design and manage Reno’s C-PACE program. The program launched in September 2019.

The Reno C-PACE program expects to provide financing for 15 retrofit projects totaling $7.5 million and 6 new-construction projects totaling $12 million in the program’s first three years. The program also expects to train 90 contractors in use of C-PACE during the next three years.
STAYING CURRENT WITH ENERGY CODES MAKE A BIG DIFFERENCE

Since 2011, the City of Reno has adopted the International Energy Conservation Code (IECC) and its updates. As a result Reno’s newer buildings are at least 30 percent more efficient than buildings constructed before 2012 when the IECC went into effect in Northern Nevada.

The City of Reno now has adopted the 2018 IECC, which became mandatory on July 1, 2019. The city expects to see an additional 3 percent improvement in the energy efficiency of new buildings and major renovations as a result of adoption of the updated code.

FOCUS ON CODE COMPLIANCE WILL PROVIDE STRONG RETURNS

The City of Reno in early 2019 began developing a robust process to support compliance with the newly adopted 2018 IECC.

Some researchers estimate that code-compliance initiatives result in $6 in energy savings for every $1 spent on compliance enforcement. With the development of full compliance, Nevada building owners could save as much as $2.8 million annually within the next decade.

Again, the City of Reno chose to work with key partners to expand educational efforts with the design and construction industries to create a cooperative, rather than confrontational, approach. The city also developed technical resources to better facilitate code compliance efforts from permit applicants.

THE COMMITMENT REMAINS STRONG

The City Energy Project may be winding down, but for the City of Reno it’s only the beginning.

The project set in motion numerous initiatives that will bear fruit for decades. Reno grows more strongly committed to green building and energy efficiency practices with each passing month. The number of energy-efficient large buildings across the city grows each year. The cadre of trained professionals who understand and care about green building in Reno will serve as mentors to generations to come.

The work of the City Energy Project resolutely moves forward. On July 1, 2019, the City transitioned the grant-funded City Energy Advisor to a permanent position. The city will build on successes and spearhead new initiatives to continue to accelerate investments in green building and energy efficiency in Reno’s commercial building sector.

WHO MADE THIS HAPPEN?

The City of Reno offers a special thank you to the City Energy Project staff at the Natural Resources Defense Council and Institute for Market Transformation. The City Energy Project is a national initiative to create healthier and more prosperous American cities by improving the energy efficiency of buildings. Working in partnership, the City Energy Project and participating cities support innovative, practical solutions that cut energy waste, boost local economies, and reduce harmful pollution. The pioneering actions of the 20 cities involved in the City Energy Project serve as models for communities nationwide and around the world.

The City of Reno also offers gratitude to our generous funders and local sponsors. The City of Reno’s accomplishments through this project were possible only through their investment in Reno. Thank you!

CITY ENERGY PROJECT FUNDERS

Bloomberg Philanthropies
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