Electricity Innovation Lab
ROCKY MOUNTAIN INSTITUTE

BUILDING THE ELECTRICITY SYSTEM OF THE FUTURE: FORT COLLINS & FORTZED

A SUMMARY REPORT HIGHLIGHTING THE FINDINGS FROM A TWO-DAY CHARRETTE ON THE FUTURE OF THE FORT COLLINS ELECTRICITY SYSTEM

colorado clean energy cluster

FORT ZED

City of Fort Collins Utilities

TABLE OF CONTENTS

ABOUT THE TEAM

01

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FORT COLLINS UTILITIES

Fort Collins Utilities is a municipal utility serving the northern Colorado city of Fort Collins. It is a member organization of e-Lab. Several members of the Fort Collins Utilities team worked alongside e-Lab to drive charrette preparations and carry-out the charrette. For more on Fort Collins Utilities, see www.fcgov.com/utilities/.

COLORADO CLEAN ENERGY CLUSTER

Launched in 2006, the Colorado Clean Energy Cluster (CCEC) is dedicated to growing primary jobs in clean energy in Colorado. The organization's member base includes a broad set of clean energy leaders. The organization focuses on developing initiatives that attract new companies to the region and enable its member companies to test and use their products and services. Two CCEC members participated on the charrette core team and provided regular feedback on the charrette agenda, as well as the preparatory materials. For more on CCEC see www.nccleanenergy.com.

FORTZED

FortZED is a collaborative effort among the city of Fort Collins, Fort Collins Utilities, the Colorado Clean Energy Cluster, and Colorado State University. FortZED aims to transform the downtown area of Fort Collins and main campus of Colorado State University into a net zero energy district through conservation, efficiency, renewable sources, and smart technologies. Members of the FortZED steering committee helped shape the charrette and provided thoughtful comments throughout the charrette development process. For more on FortZED, see www.fortzed.com.

ELECTRICITY INNOVATION LAB

The Electricity Innovation Lab (e-Lab) is a state-of-the-art forum for collaborative innovation to test our ability to accelerate the transformation of the U.S. electricity system to a more efficient, renewable, and affordable future. The Fort Collins/FortZED charrette was an e-Lab project that was driven by e-Lab's convening partner, Rocky Mountain Institute, and the charrette was attended by several participating e-Lab member organizations. For more on e-Lab, see www.rmi.org/elab.

EXECUTIVE SUMMARY

02

EXECUTIVE SUMMARY

CONTEXT:

Fort Collins Utilities is a municipal utility with low rates, good reliability and ambitious clean energy goals. The utility has been working to meet its clean energy goals by investing in a mix of energy efficiency and renewable energy programs. In addition, alongside Colorado State University, Colorado Clean Energy Cluster, and the city, the utility is developing a flagship effort, called FortZED, to build a net zero energy district in downtown Fort Collins.

CHALLENGE:

After many early successes, Fort Collins Utilities and its partners are facing some big questions moving forward. These include uncertainty about the types of resources to invest in, where the financing will come from, and the ultimate effect on the utility's business model if efficiency and renewable plans are as successful as hoped.

APPROACH:

To begin to address these questions Fort Collins Utilities and its partners worked with the Electricity Innovation Lab (e-Lab) to design and carry-out a two-day charrette on November 7th and 8th, 2012. Drawing on experts and key stakeholders from inside Fort Collins and from outside the region, the charrette team identified innovative solutions to some of Fort Collins' most difficult challenges around planning, investment, and execution of efficiency and renewable energy.

KEY OUTPUTS:

The charrette participants identified the potential to dramatically ramp up efforts to meet more aggressive efficiency and renewable energy goals. In addition, the charrette also identified the enablers to meet a more accelerated set of goals, including exciting ideas around tariff design, community engagement and goal development.

NEXT STEPS:

The charrette team generated some exciting solutions, and these solutions are being carried forward through several different channels over the next six months.

PROJECT CONTEXT

Fort Collins Utilities is a municipal utility with low rates, good reliability and ambitious clean energy goals. The utility has been working to meet its clean energy goals by investing in a mix of energy efficiency and renewable energy programs. In addition, alongside Colorado State University, Colorado Clean Energy Cluster, and the city, the utility is developing a flagship effort, called FortZED, to build a net zero energy district in downtown Fort Collins.

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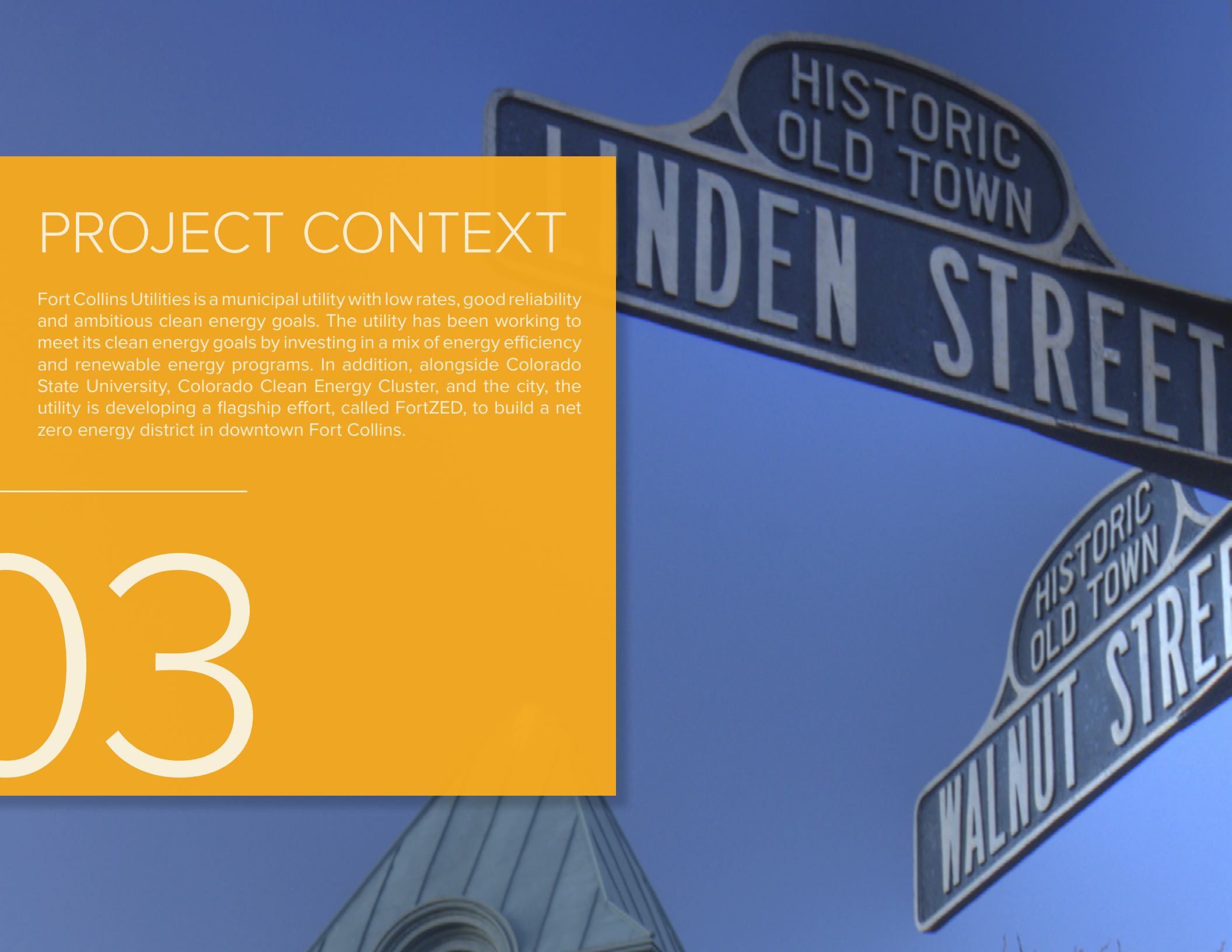


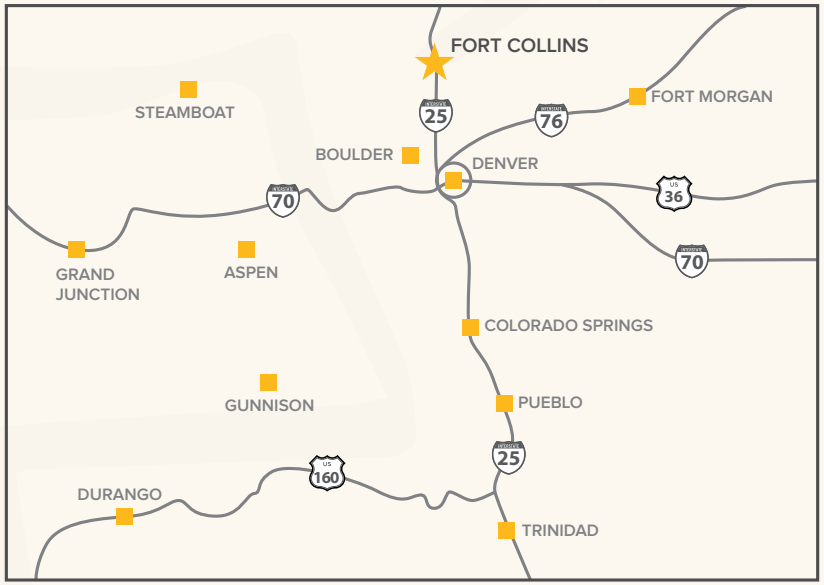
ABOUT FORT COLLINS UTILITIES

Fort Collins Utilities is a municipal utility that serves the city of Fort Collins in Northern Colorado. The utility's territory stretches for 54 sq. miles and serves a population of 146,672.

Although the majority of Fort Collins Utilities' customers are residential (85%), two thirds of the utility's demand comes from 10,000 small commercial customers and about 15 large commercial and industrial customers that include renowned organizations and companies like Colorado State University, New Belgium Brewing, and Woodward.

The utility owns and operates its distribution lines, but services its demand with electricity from Platte River Power Authority (PRPA), which the city of Fort Collins co-owns with three other communities that PRPA serves. Just over two thirds of Fort Collins' power comes from two coal plants and a quarter comes from regional hydro-power. Currently, only 3% of the city's power comes from renewables—mostly from big regional wind farms owned or contracted for by PRPA.

WHERE IS FORT COLLINS?



FORT COLLINS' POWER COMES FROM:

69% from two coal plants

26% regional hydro-power

3% other renewables

Fort Collins Utilities purchased renewable energy credits (not shown in chart above) that were bundled with energy generated from coal. These RECs represent 3.8% of the total generation mix.

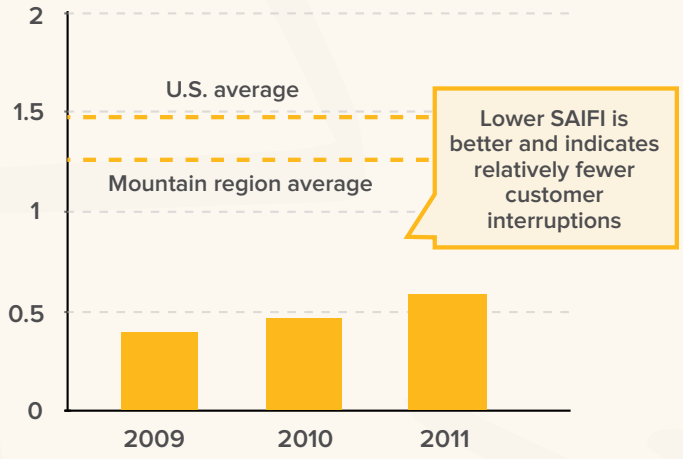
Source: Fort Collins Utilities

A HISTORY OF AFFORDABLE + RELIABLE POWER

Fort Collins Utilities provides its customers with highly affordable and reliable power. In 2012, the utility's residential customers paid average monthly bills that were lower than 46 of Colorado's 53 electric utilities and 40% lower than the national average.

The utility manages to deliver above-average reliability at these relatively low costs. Beginning in 1989, the utility started undergrounding its distribution lines. Today, 99% of all distribution lines are underground. The strategic decision to underground power lines has helped the utility outpace regional and national reliability benchmarks.

FORT COLLINS' SYSTEM AVERAGE INTERRUPTION FREQUENCY INDEX (SAIFI), 2009–2011



SAIFI=(Total # of customer interruptions) / (Total # of customers

Source: Fort Collins Utilities, "Energy Policy 2011 Annual Update";
Lawrence Berkeley National Lab, "Tracking the Reliability of the U.S. Electric System"
Image courtesy of shutterstock

AN EXCITING FUTURE IN CLEAN ENERGY

Building on its strong history for delivering affordable, reliable power, Fort Collins Utilities, with strong support from the community, has developed aggressive environmental goals that are designed to make it a leader in clean energy.

In 2009, the city and the utility set the following community-wide energy goals:

- Support the community greenhouse gas reduction goal of 20% reduction below 2005 levels by 2020 and 80% reduction by 2050;
- Achieve annual energy efficiency and conservation program savings of at least 1.5% of annual energy use (based on a three-year average history); and
- Maintain a minimum fraction of renewable energy in compliance with Colorado's Renewable Energy Standard requirements for municipal utilities to meet 10% of energy demand with renewables by 2020.

In addition, the city is part of a collaborative effort, called FortZED, to transform the downtown area of Fort Collins and the main campus of Colorado State University into a net zero energy district through conservation, efficiency, renewable sources, and smart technologies.

Source: Fort Collins Utilities, Energy Policy 2011 Annual Update; www.fortzed.org, Image courtesy of Shutterstock

PROGRESS IN CLEAN ENERGY:

COMMUNITY-WIDE ENERGY EFFICIENCY PROGRAMS

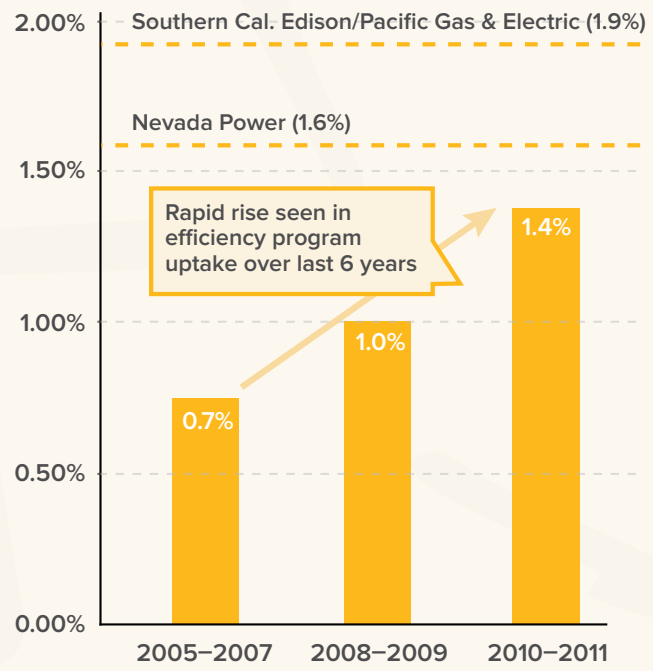
In 2011, Fort Collins Utilities fell just short of meeting its targets. Total savings from efficiency were 1.4% of annual retail electric sales.

This level of savings shows that the utility's programs continue to grow in effectiveness—program savings have grown by an average rate of 10% over the last 6 years. Moreover, it places the utility in select company. In a recent survey of efficiency programs performed by CERES, only three utility programs saved more than 1.4% of retail sales.

The utility delivers these savings through a mix of residential and commercial programs. For residential customers, the utility offers home energy audits, rebates for equipment installation and upgrades, and lighting discounts. In addition, starting in 2012, the utility began offering on-bill financing to residential customers for energy efficiency and solar PV.

Many efficiency services are also available for commercial customers. The utility offers its commercial customers a host of tools to help them manage their electricity use, including access to rebates.

FORT COLLINS' EFFICIENCY AS PERCENT OF RETAIL SALES, 2005–2011



Source: Fort Collins Utilities, "Energy Policy 2011 Annual Update"; CERES, "Benchmarking Electric Utility Energy Efficiency Portfolios in the U.S."

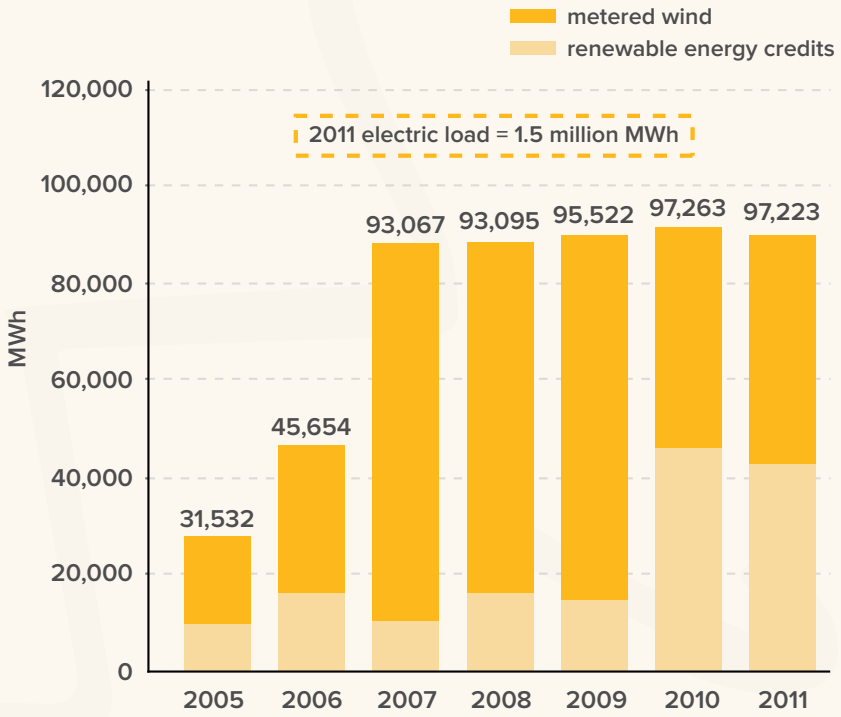
PROGRESS IN CLEAN ENERGY:

COMMUNITY-WIDE RENEWABLE ENERGY PROGRAMS

In 1998 Fort Collins Utilities became the first utility in the state to offer customers the option to purchase renewable wind power. Currently, Fort Collins purchases enough Renewable Energy Credits through its green power program to off-set more than 3% of its power generation from coal. In addition, the utility's interest in renewable sources has enabled Platte River Power Authority, its power provider, to invest in over 18 MW of wind power for Fort Collins and its other municipal customers.

Although the utility has not seen much expansion in renewable energy adoption beyond 2007 levels, it is actively working to change this with new programs that support solar investment. Beginning in 2013, Fort Collins Utilities will implement a solar garden program and a modified feed-in-tariff to support the development of 5–7 MW of solar PV in the next two years.

FORT COLLINS' CUMULATIVE RENEWABLE ENERGY ADOPTION, 2005–2011



Source: Fort Collins Utilities, Energy Policy 2011 Annual Update

PROGRESS IN CLEAN ENERGY:

LOCATION-SPECIFIC PILOT—FORTZED

Recognizing that individual efforts in efficiency and renewables might not be sufficient to achieve Fort Collins' goals, the Colorado Clean Energy Cluster and the non-profit UniverCity Connections launched a new idea they called FortZED in 2007. FortZED has become a collaborative effort among the city, the utility, Colorado Clean Energy Cluster, and Colorado State University to "transform the downtown area of Fort Collins and the main campus of Colorado State University into a net zero energy district."

The area encompasses two square miles and 45 MW of peak electricity demand or approximately 10–15% of Fort Collins Utilities' distribution system.

The FortZED effort is governed through a steering committee made of members from the city, the utility, the Colorado Clean Energy Cluster, Colorado State University, and the community.

Initial efforts in FortZED have centered around four projects:

- Renewable and distributed system integration—Represents the largest project and focuses on coordinating distributed resources to reduce peak electricity demand;
- New Energy Communities Grant—Reduces energy demand in city buildings and installs renewable energy technologies;
- Community Energy Challenge—Grassroots outreach effort to reduce home energy use; and
- Green Restaurant Initiative—Encourages local restaurants to conserve energy.

For more on FortZED, go to: www.fortzed.com

FORTZED PARTNERSHIPS

FortZED has attracted a diverse group of companies interested in actively engaging in the design and construction of FortZED. Partner organizations include:

New Belgium Brewing, Advanced Energy, Eaton, Woodward, brendle group, Spirae

Source: www.fortzed.org, "FortZED Partners."

CHALLENGE

After many early successes, Fort Collins Utilities and its partners are facing some big questions moving forward. These questions include uncertainty about the types of resources to invest in, where the financing will come from, and the ultimate affect on the city and the utility if efficiency and renewable plans are as successful as hoped.

04

CHALLENGES

Fort Collins developed a clear vision to create a net zero energy district to show what is possible and to eventually lead the entire city's transition to efficiency and renewables. In addition, it has a wide array of programs already in place to help the city meet its goals; however, the city is currently facing several very important strategic, financing, and executional questions.

VISION AND STRATEGY

- Are current programs enough to get the city to its goals? If not, what mix of resources holds the greatest promise to meet FortZED's and Fort Collins' goals?
- When is the optimal time to invest in these resources and how does that affect when the city can meet its goals?
- How do strategies that support the Fort Collins 80% carbon reduction goal and timeline support the FortZED goals, and vice versa?
- What are the barriers to investing in these resources?
- What types of approaches and programs can the city implement to overcome barriers to investment and attract enough interest from residential and commercial customers to meet community goals?

FINANCING

The city's recent FortZED Renewable and Distributed System Integration (RDSI) project shows that it can attract investment capital from novel places. The RDSI project pooled funding from the federal government, the state government, the city, foundations, and local companies. Meeting its vision will require the city to leverage this creativity. Addressing several financing questions will help the city devise how it will finance its ambitious vision.

- How much investment will it take to meet the city's goals?
- What are all the sources the city can draw from?
- What is the ideal mix of these financing sources?

EXECUTION

- Through initial efforts in FortZED, the city developed powerful partnerships, how can it continue to leverage these partnerships to reach its environmental goals?
- What are the business model implications for Fort Collins Utilities if it meets its energy and environmental goals?

APPROACH

To begin to address these questions Fort Collins Utilities and its partners worked with e-Lab to design and carry-out a two-day charrette on November 7th and 8th, 2012. Drawing on experts and key stakeholders from inside Fort Collins and from outside the region, the charrette team crafted innovative solutions to some of Fort Collins most difficult challenges around planning, investment, and execution of efficiency and renewable energy.

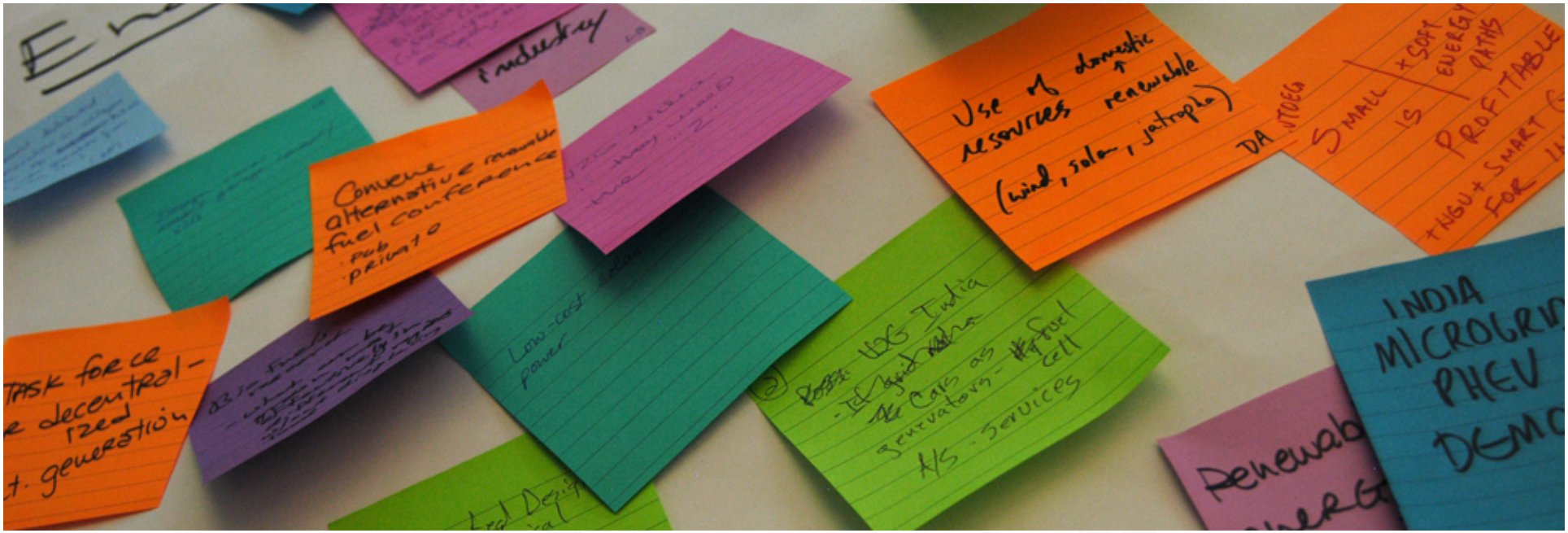
05

CHARRETTE DEFINITION AND OBJECTIVES

A charrette is a holistic, collaborative planning process that allows teams working together to develop myriad scenarios, design cross-functionally, communicate in short feedback loops, study the details and the whole system, and produce feasible plans with input from many perspectives. It takes its inspiration from the tradition of “design charrettes” that are used in architecture, planning, and other design professions to accelerate and enrich the design process. Participants come to the charrette with a “beginner’s mind,” recalling Zen master Sunryu Suzuki’s admonition that “in the beginner’s mind there are many possibilities; in the expert’s mind there are few.”

OBJECTIVES

1. Develop a shared understanding of the current state and future possibilities for FortZED and Fort Collins;
2. Bring new ideas and resources to the table;
3. Identify lessons learned from previous projects and identify opportunities to build on those successes to move toward FortZED’s and Fort Collins’ goals; and
4. Work out next steps to capture these opportunities.

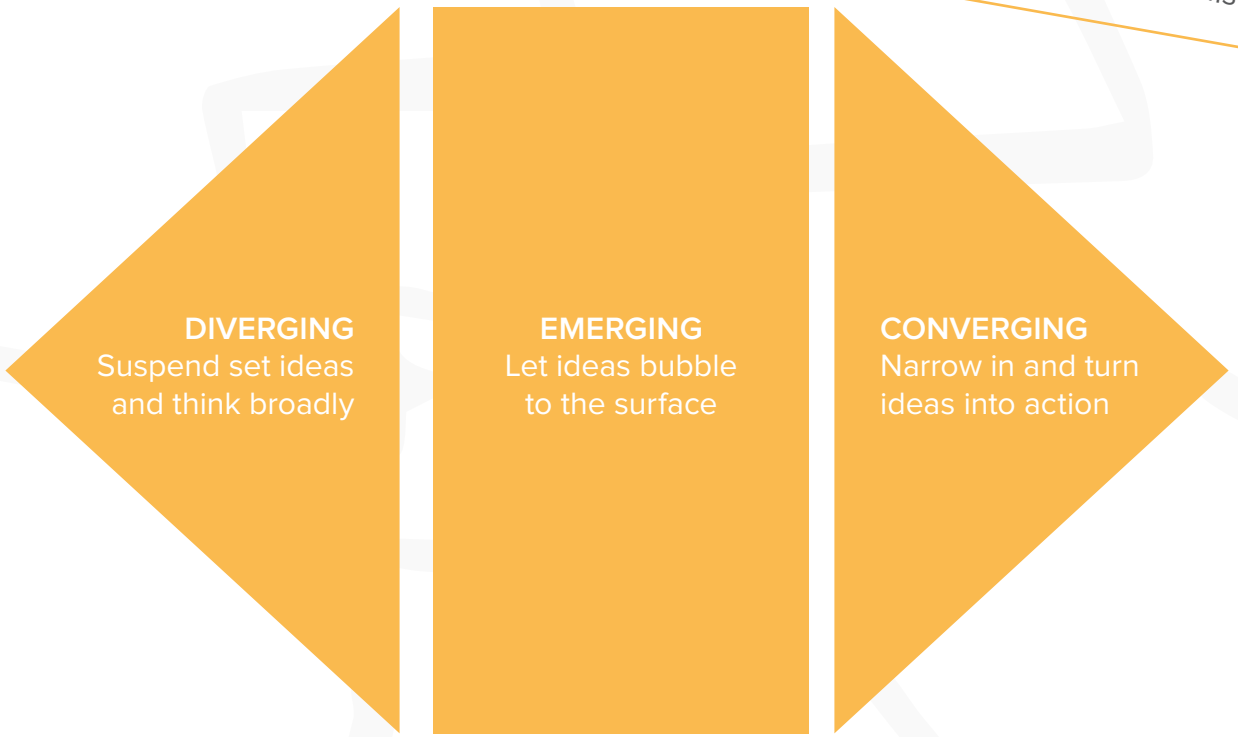


CHARRETTE METHOD: DIVERGE, EMERGE, CONVERGE

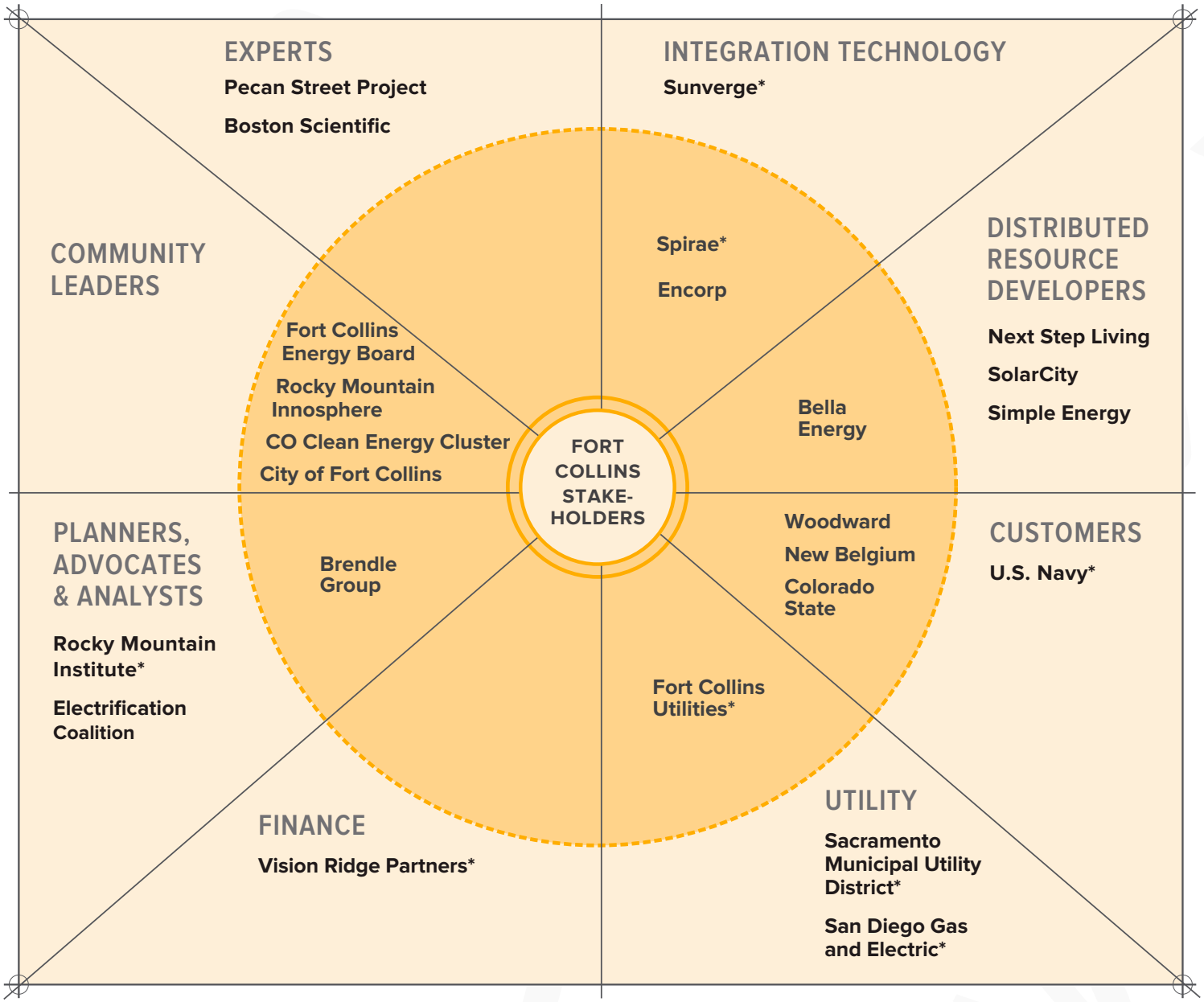
The charrette process includes three phases that can be conducted within a session over the course of the meeting or across multiple months.

Charrette Ground Rules

1. Think broadly
2. Have a beginner's mind
3. Question assumptions
4. Think across disciplines



CHARRETTE PARTICIPANTS



National Experts

Fort Collins Stakeholders

* Denotes e-Lab Members

KEY OUTPUTS

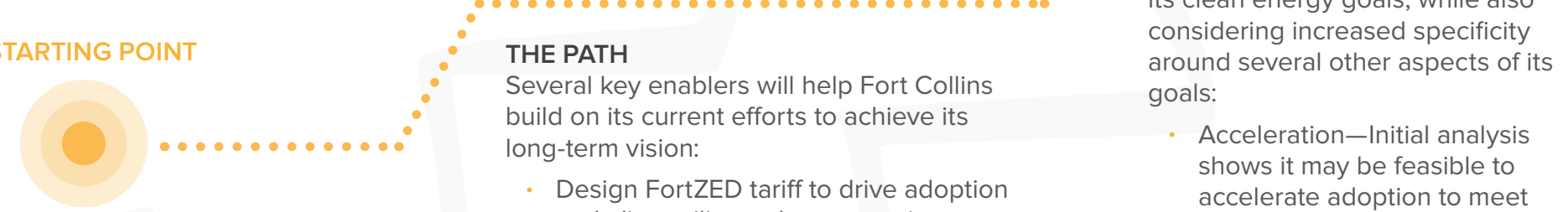
The charrette participants identified the potential to dramatically ramp up efforts to meet more aggressive efficiency and renewable energy goals. In addition, the charrette also identified the enablers to meet a more accelerated set of goals, including exciting ideas around tariff design, community engagement and goal development.

06

INTRODUCTION TO CHARRETTE OUTPUTS

Over the course of the charrette, participants focused their attention on three key areas:

- What is the current status of efforts in Fort Collins and FortZED?
- Where do Fort Collins and FortZED aspire to head in the future?
- How are Fort Collins and FortZED going to achieve their vision?



STARTING POINT

THE CURRENT STATE

Fort Collins already has many of the right resources and elements in place:

- Strong Leadership
- Rich renewable resources
- Strategic partnerships
- Progressive and engaged citizenry
- Technology backbone

THE PATH

Several key enablers will help Fort Collins build on its current efforts to achieve its long-term vision:

- Design FortZED tariff to drive adoption and align utility and customer interests
- Revisit approach to community engagement to support adoption and generate new ideas from community
- Accelerate adoption through novel marketing and financing models

FUTURE STATE

THE VISION

Fort Collins could feasibly accelerate its timeline for achieving its clean energy goals, while also considering increased specificity around several other aspects of its goals:

- Acceleration—Initial analysis shows it may be feasible to accelerate adoption to meet the city's vision by 2020
- Energy type—The vision could include different components, e.g., transportation
- Innovation—The city could make explicit its ambitions to be a test bed for new energy technologies

THE CURRENT STATE

FORT COLLINS ALREADY HAS MANY OF THE RIGHT INGREDIENTS TO REALIZE ITS ENERGY VISION

Like any design project, the charrette began by surveying the site's foundation. This process found that Fort Collins already has many of the essential ingredients in place for meeting its FortZED and Fort Collins-wide energy goals, but that there are also important questions about many of the key ingredients or elements. The most discussed elements are highlighted below:

LEADERSHIP AND INSTITUTIONAL STRUCTURE

Leadership is aligned around ambitious energy goals. The city is set up for success and in control of its energy future with a municipally owned utility, but its energy provider (Platte River Power Authority) must be engaged.

COST

Electric rates are low, so the city is working from a good starting point. However, as a result, the city council and others have real concerns about how ambitious plans may affect the cost of electricity.

TECHNOLOGY

The essential communications and control infrastructure to manage a distributed renewable system is installed and tested as part of RDSI. Moreover, Fort Collins Utilities planned smart meter rollout to all customers, which it is completing this year, provides another layer of necessary technology.

ENERGY RESOURCES

Fort Collins has access to a rich variety of supply and demand-side resources, including bio gas, solar, wind, and energy efficiency.

COMMUNITY

Fort Collins is a progressive community ready to contribute to meet the city's energy goals.

PARTNERSHIPS

As part of the FortZED work, there are strong existing partnerships among academic, business organizations, and the city and utility. There is room to expand partnerships.

GOALS

The goals in place are inspiring and aggressive, but there are still some uncertainties about their scope.

THE VISION

BOTH STAKEHOLDERS FROM WITHIN AND OUTSIDE FORT COLLINS HOLD A DIVERSE SET OF ASPIRATIONS THAT EXTEND BEYOND THE CITY'S CURRENT GOALS

Participants see unique opportunities for Fort Collins to go beyond its current energy goals in both ways that resemble incremental changes and in ways that incorporate new aspirations.

CURRENT GOALS

- Support city greenhouse gas reduction goal
- Achieve reduction of at least 1.5% of annual electricity use (based on a three-year average history)
- Meet 10% of energy demand with renewables by 2020
- Transform downtown area of Fort Collins into a net zero energy district (FortZED), creating and sharing a replicable model

POTENTIAL EXTENSION OF GOALS

- Broaden FortZED goals to include transportation
- Extend FortZED boundary to the broader Fort Collins community
- Accelerate path to meet goals quicker, and use more in-region resources like solar, biofuels, and efficiency

NEW ASPIRATIONS

- Become renowned test-bed for new technologies
- Create new jobs in clean technology and attract new clean technology companies
- Make wide-spread and effective community engagement Fort Collins' calling card
- Value resources appropriately—creating a level playing field
- Transform the utility business model

THE VISION (CONT'D)

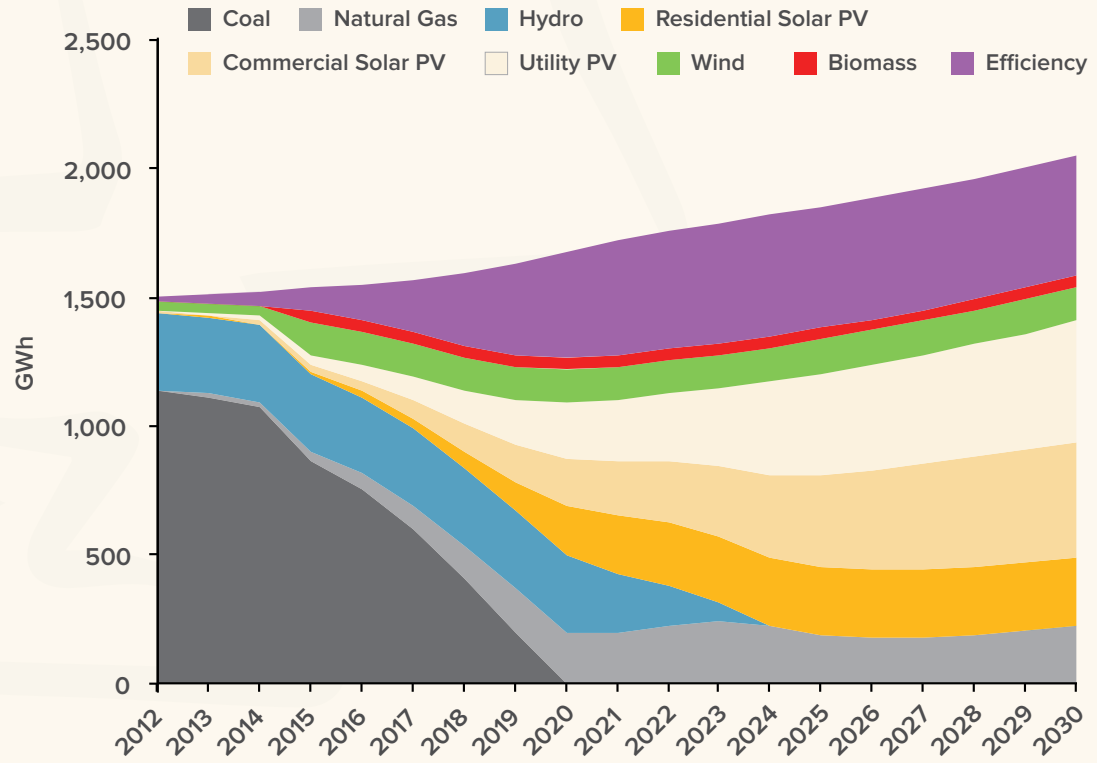
ACCELERATION OF THE CITY'S GOALS IS POSSIBLE AT AGGRESSIVE, BUT FEASIBLE ADOPTION RATES

Participants explored the potential to accelerate Fort Collins' and FortZED's goals. Using rough calculations, they showed that goal acceleration is possible at plausible adoption rates for efficiency and renewable energy. However, a number of important questions exist about the possible acceleration of electricity goals:

- What is the best mix of resources? And what are the ideal roles for CHP, natural gas, and renewables?
- What costs and benefits does accelerated adoption entail?
- Could an accelerated approach open up new forms of capital and attract new partners?
- What are the barriers to accelerated adoption and how can they be overcome?

ILLUSTRATIVE SCENARIO

BACK OF THE ENVELOPE ILLUSTRATION
OF POTENTIAL FORT COLLINS RESOURCE PORTFOLIO
2012–2025



THE VISION (CONT'D)

THE VISION AND MISSION FOR FORTZED AND FORT COLLINS COULD BE UPDATED TO CLARIFY DIRECTION

Fort Collins and FortZED have articulated a set of existing goals, and FortZED has a vision and mission. However, some participants saw an opportunity to better define vision and mission statements to motivate local support and broaden interest, provide alignment and focus, and define a compelling value proposition.

Participants defined key elements to be included in a mission and vision statement and identified major questions associated with current statements. Using these tools, participants created three draft statements—a vision statement for Fort Collins and a vision and mission statement for FortZED.

DRAFT FORT COLLINS VISION

TO CREATE A ZERO CARBON ENERGY SYSTEM IN A WAY THAT INCREASES LOCAL PROSPERITY AND ENERGY SECURITY [BY 2030].

DRAFT FORTZED VISION

TO CREATE ECONOMIC AND RELIABLE ZERO-CARBON SYSTEMS THAT PROMOTE(S) ECONOMIC PROSPERITY (AND ENERGY SECURITY), (ENHANCING THE FORT COLLINS BRAND), AND DEMONSTRATES INTERNATIONAL LEADERSHIP IN ENVIRONMENTAL RESPONSIBILITY.

DRAFT FORTZED MISSION

FORTZED WILL DRAMATICALLY REDUCE FORT COLLINS' CARBON FOOTPRINT BY ELIMINATING THE USE OF POWER WHOSE GENERATION EMITS CARBON, AND DEPLOYING OTHER ECONOMICALLY VIABLE TRANSFORMATIVE ENERGY SYSTEMS TO ACHIEVE THE CITY OF FORT COLLINS' EXISTING COMMITMENTS TO REDUCE CARBON EMISSIONS AND ENERGY CONSUMPTION.

THE PATH

DRIVING ADOPTION

The path to achieving the city's vision requires wide-spread adoption of clean energy technologies. Customer decisions about adoption of these technologies hinge on awareness, interest, and their ability to finance or afford the technology (as shown in the sales funnel below).

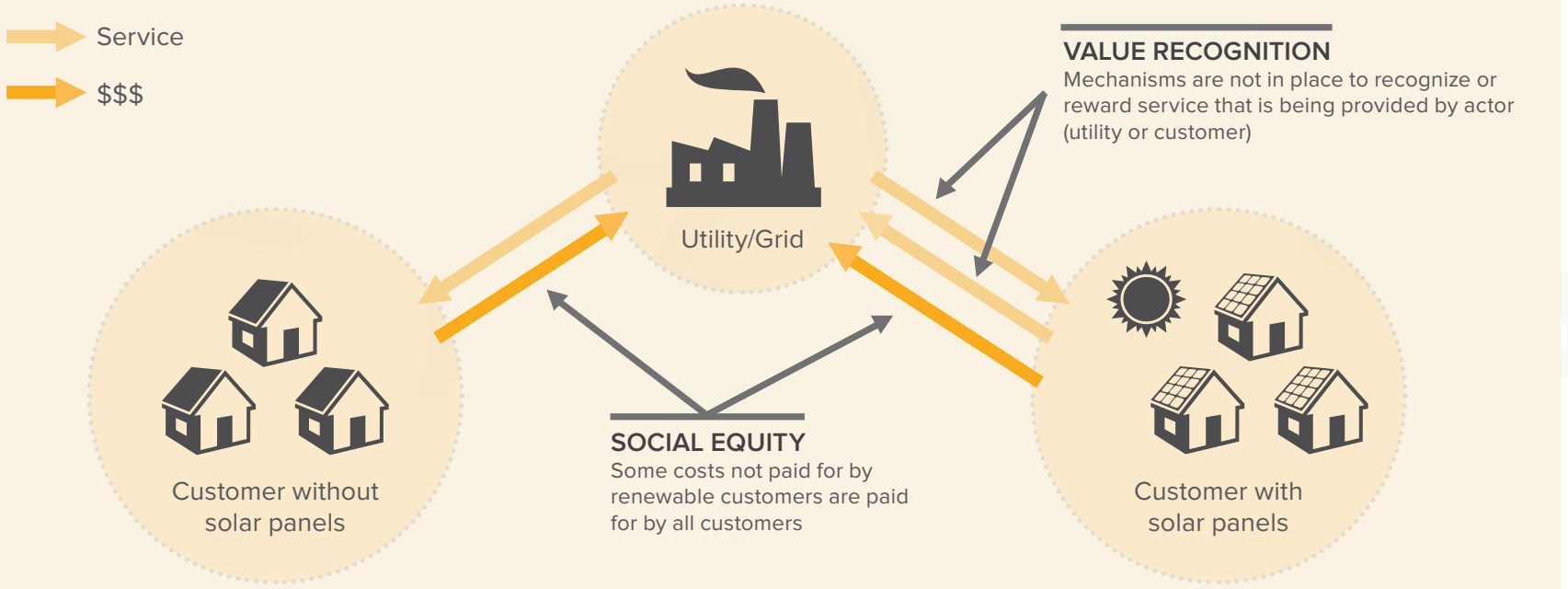
ILLUSTRATIVE EFFICIENCY & RENEWABLE ENERGY ADOPTION FUNNEL

THE PATH (CONT'D)

DRIVING ADOPTION IN A SUSTAINABLE WAY

It is not enough to focus all effort on adoption. Because the electricity system is highly interconnected, adoption of certain technologies may entail costs and benefits for all stakeholders. For example, a residential customer may invest in enough efficiency and renewable energy to completely offset her need for grid electricity. However, she may still rely on the grid for electricity during cloudy periods or at night. Certain pricing systems may fail to charge her for the value she extracts from the grid. Or, in contrast, her system may provide valuable services to the grid that she is not compensated adequately for. Thus, adoption strategies must carefully consider larger system impacts to ensure an economically viable system for all customers. Charrette participants focused their energy on both adoption and the costs and values to the system.

MISALIGNED COSTS AND BENEFITS

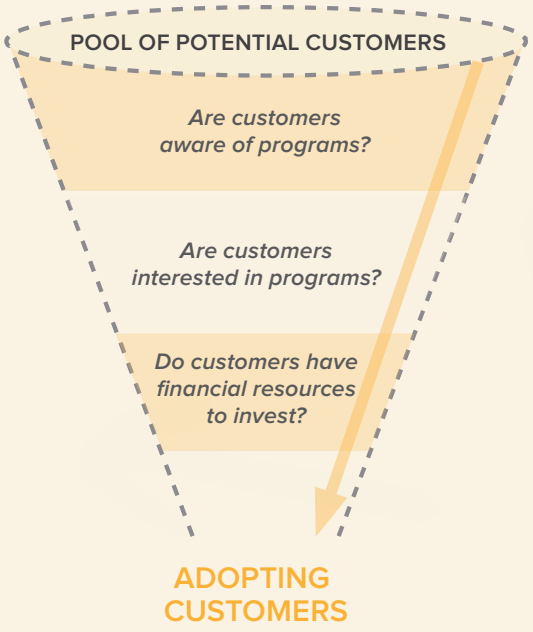


Source: RMI, "Net Energy Metering, Zero Net Energy And the Distributed Energy Resource Future."

THE PATH (CONT'D)

CHARRETTE FOCUS AREAS

ISSUE #1: ADOPTION



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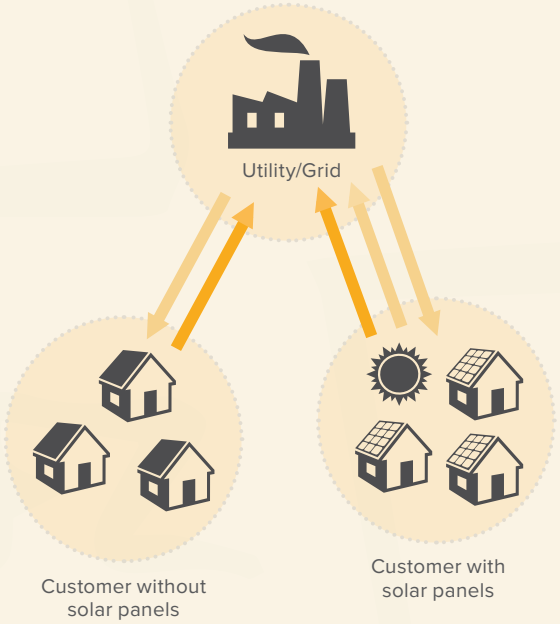
ISSUE #2: SYSTEM COSTS AND BENEFITS



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CHARRETTE FOCUS ON THE PATH

1. *Develop approaches to accelerate adoption.* Participants identified and defined four strategies to speed adoption.
2. *Identify stakeholder engagement needs and solutions.*
3. *Create approach to align utility and customer interests*

THE PATH (CONT'D)

APPROACHES TO ACCELERATE ADOPTION

UNMET NEED:

If Fort Collins is going to accelerate its goal, it needs to drive faster adoption of clean energy technologies. What strategies could help accelerate this deployment?

Participants considered strategies that would drive accelerated adoption. Four strategies rose to the top of consideration.

1. ***Target sales and marketing***—To achieve accelerated adoption, installers will need to better segment the market to improve the chances of adoption. In part, this can be addressed by leveraging utility data. However, it will likely be necessary to identify best-of-the-best marketing and sales techniques from inside and outside the electricity sector, including approaches like viral tools.
2. ***Optimize structured finance***—A major investment in renewables and efficiency will require the city and the utility to bring its resources to bear to access cheap sources of capital. What sources are available to the city? How can the utility deploy creative financing strategies to attract customer and installer investment? What outside sources of capital can support city investment?
3. ***Value distributed resources properly***—Many types of distributed resources offer unique value or create special costs. If appropriate signals are not set, it is difficult for investors to make the right decisions for themselves and the electricity system. Consequently, it is critical that the utility identify all the costs and values of distributed energy resources, like solar PV, and design programs that appropriately compensate investment.
4. ***Execute on the low-hanging fruit***—Participants recognized that the city has already moved in the right direction, and there was consensus that several initial efforts could be tweaked or altered to deepen results. These included extending the on-bill financing term, achieving Solar Friendly Communities highest rating, and conducting time of sale energy audits.

THE PATH (CONT'D)

ALIGNING UTILITY AND CUSTOMERS INTERESTS WITH THE FORTZED TARIFF

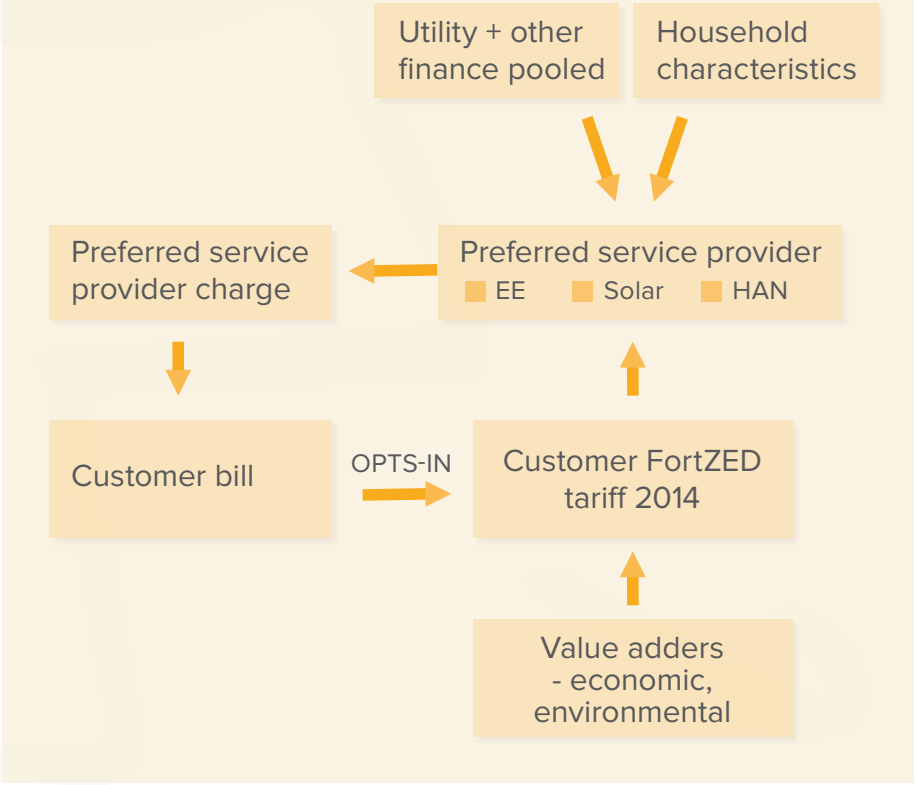
UNMET NEED:

Fort Collins Utilities is searching for strategies that align its interests with those of the customer to drive greater adoption of clean technologies. Any strategy must accurately identify the value of new technologies to the system and signal those values to potential investors to encourage adoption of the right technologies in the right areas of the electricity system.

Participants developed an idea for a new tariff to address the unmet need. The tariff, which participants called the FortZED tariff, has several key components:

- Value and price distributed resources to ensure the costs of distribution services to customers are recovered even if customers become zero net energy;
- Incent customers to provide services to grid through any energy investments they make;
- Provide customers with bundled efficiency and solar services from preferred service providers;
- Offer service providers access to low-cost financing and customer data (with permission); and
- Enable customers outside the FortZED region to participate by opting in.

EXAMPLE OF FORTZED TARIFF STRUCTURE



THE PATH (CONT'D)

ALIGNING UTILITY AND CUSTOMERS INTERESTS WITH THE FORTZED TARIFF

POTENTIAL BENEFITS OF THE FORTZED TARIFF

- Drives down customer acquisition and financing costs for preferred service providers who can tap into utility financing and can use utility data to identify highest potential customers
- Focuses on capturing costs and values of new technologies, especially distributed technologies—enabling the utility to continue to support its core services without passing on excessive additional costs to customers that don't invest in technologies
- Facilitates new innovation and competition in electric service by creating a competitive environment for service providers to pursue interested customers
- Offers the utility the potential to drive investment in clean technologies without straying too far outside its conventional structure and approach of delivering services to customers
- Expands the reach of innovative programs outside of FortZED, creating a greater opportunity and sense of community involvement

KEY QUESTIONS

- Can an opt-in tariff be designed with minimal risk of cross-subsidy between participating and non-participating customers?
- Do the methodologies exist that would enable Fort Collins Utilities to accurately value the costs and benefits created by different customer-initiated technology investments?
- Can appropriate structures be created to support pooled financing of distributed resource development with on-bill repayment?
- What kind of tariff terms would it take to drive strong interest from customers?
- How much cost could the tariff approach drive out of customer acquisition and financing for service providers?

THE PATH (CONT'D)

LEVERAGING COMMUNITY ENGAGEMENT

UNMET NEED:

The Fort Collins community serves as a well spring of new ideas, a support base that influences the direction of energy policy, and the actors that must adopt clean energy solutions. Moreover, recent Fort Collins community organized activities show that the community can act as a major force in driving adoption of efficiency and renewable energy.

As a result, it is important to engage the community in Fort Collins energy strategy development. Efforts are already underway in this area, but there is a need to drive greater community engagement and participation, and, as part of this effort, a need to better articulate the value of clean energy and Fort Collins clean energy plans to the average Fort Collins citizen.

During the charrette, participants outlined a set of milestones that would facilitate greater community engagement. After considering each of these milestones, it became clear that the first steps to re-envisioning the city's community engagement strategy entails better defining the interests of each stakeholder group and using this knowledge to develop a compelling story about FortZED and Fort Collins clean energy efforts that tapped into a more commonly shared set of interests and motivations.

MILESTONES TO FACILITATE GREATER COMMUNITY ENGAGEMENT

1 CHARACTERIZE STAKEHOLDERS

Defines personas

2 WRITE STORY, REFINE BRANDING

Creates compelling story and refines brand, building off of what is already in place

3 DEVELOP ENGAGEMENT PLANS

Uses personas and story to build three plans:

- Marketing—drives adoption
- Engagement—taps collective intelligence
- Public relations—Generates wide support among key influencers

4 EXECUTE

THE PATH (CONT'D)

LEVERAGING COMMUNITY ENGAGEMENT

POTENTIAL BENEFITS OF THE COMMUNITY ENGAGEMENT STRATEGY

- Generates new ideas through engaging a wide swath of the public that hold diverse perspectives
- Cultivates interest in the adoption of new, clean technologies essential for meeting Fort Collins' goals
- Builds a shared sense of ownership around the development of the city's electricity system

KEY QUESTIONS

- Who are all the stakeholder groups in Fort Collins? What do these groups care about?
- Do they know about and understand the city's and FortZED's electricity goals?
- Do they support the goals and do the goals align with their own personal motivations and interests? And do they understand the role they can play in achieving these goals?
- How can Fort Collins make electricity and the transition to a cleaner electricity system into an issue that stakeholders care about and want to take action around?
- Who owns and administers community engagement strategies aimed at engaging stakeholders on FortZED?
- Are there leading examples of how other localities have engaged stakeholders effectively in either energy or a related area?

CONCLUSION

The charrette team generated some exciting solutions, and these solutions are being carried forward through several different channels over the next six months.

07

CONCLUSION

Fort Collins Utilities and its partners are considering next steps that flow into three categories.

1. VISION

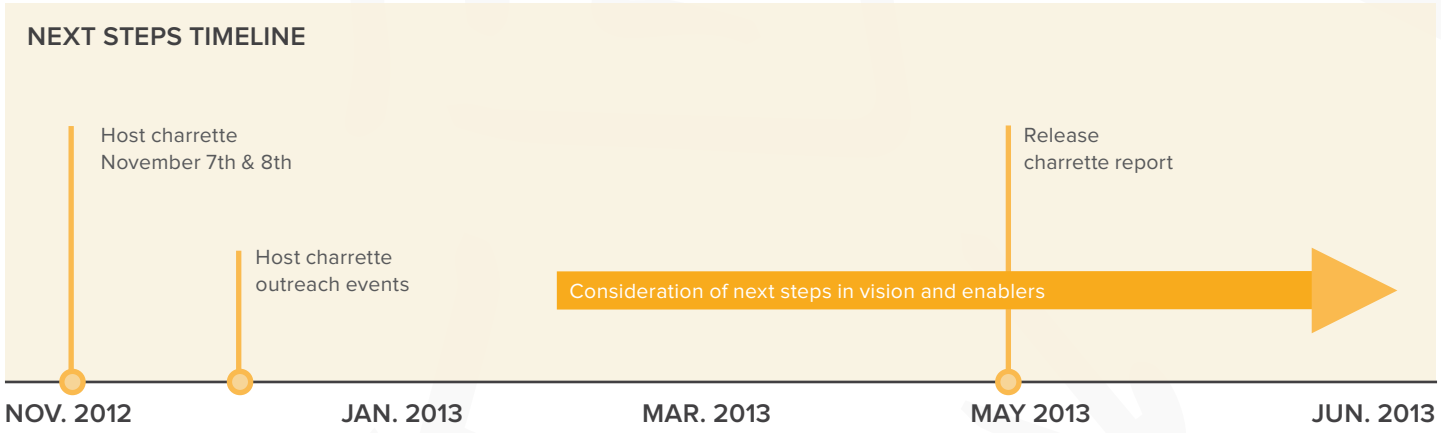
The charrette showed the exciting possibility of accelerating efficiency and renewable deployment to achieve FortZED's and Fort Collins' goals much faster. Fort Collins Utilities is determining whether it should study the possibility of goal acceleration, and it is doing some initial scoping around a potential study. Questions that could be addressed by such a study include: What electricity resources are available and at what cost? What is the best combination of these resources to form an affordable, renewable and reliable electricity system? And what are the costs and benefits to meeting an accelerated timeline? What will the effect of investment in these resources be on job creation and economic growth?

2. ENABLERS

Fort Collins Utilities is evaluating several different enabling programs, including new marketing models and revised tariff design. The evaluation maps out each enablers possible role, defines its potential for helping the utility meet its goals, and lays out the next steps to move forward in each area.

3. OUTREACH

Several charrette attendees are providing updates to larger groups to inform them of charrette outcomes. These groups include Fort Collins Utilities and the FortZED steering committee. In addition to specific briefings at these organizations, this report is intended to serve as an informational resource to allow stakeholders inside and outside of Fort Collins to learn about what happened in the charrette and provide comments and questions about the topics discussed.



CONCLUSION (CONT'D)

The U.S. needs real-world examples that show it is possible to meet ambitious energy and carbon goals without jeopardizing electric reliability and affordability. The city of Fort Collins is stepping up to tackle this challenge. In order to achieve success, the city must solve big questions like where funding will come from and how it will drive adoption of supporting technologies. After a two day workshop convening a diverse group of experts and stakeholders, the city is a little closer to answering some of the most prominent questions. Workshop participants laid out a set of strategies to accelerate adoption of energy efficiency and renewable energy in a way that sustains and strengthens the municipal utility through the likes of targeted sales and marketing, unique financing, and an innovative rate structure. The work is just beginning, but Fort Collins is on the path, moving forward.

As Mark Twain allegedly once said,

"THE SECRET OF MAKING PROGRESS IS TO GET STARTED."

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