

FORT COLLINS ENERGY POLICY

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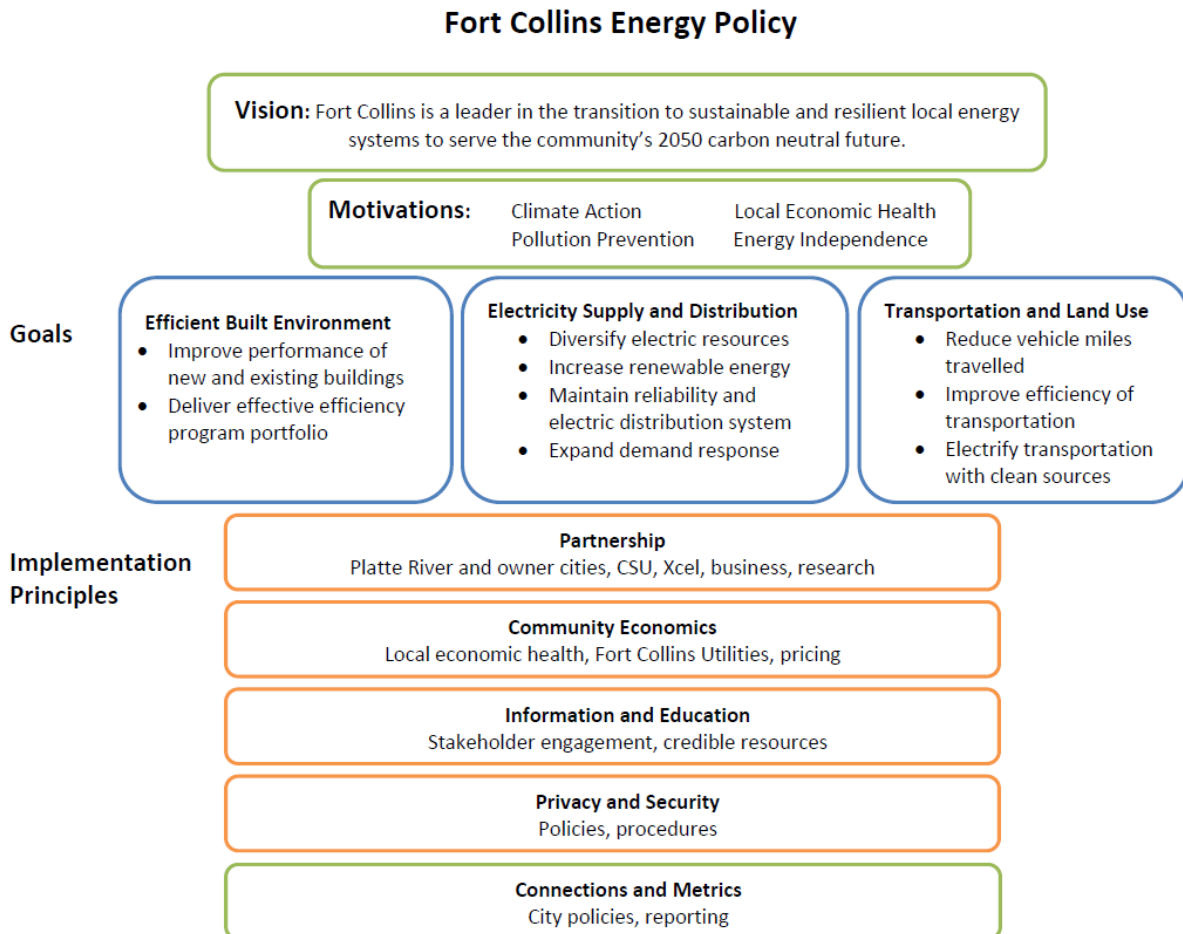
OVERVIEW

The City of Fort Collins’ *Energy Policy* reflects our community’s values of reliability, safety, affordability, greenhouse gas (GHG) emissions reduction, pollution prevention and energy independence. The policy provides goals for the prioritization of decision making, programs and services related to the quantity of use and the sources of energy for electricity, thermal end-uses and transportation.

The *Energy Policy* uses a systems approach to energy production and consumption, as well as triple bottom line metrics (economy, society and environment), to guide City government in the development of plans promoting policy outcomes for residents, businesses and other organizations. The City also has a role in the demonstration of policy initiatives through leading by example.

BACKGROUND

The City’s first energy policy was the *2003 Electric Energy Supply Policy*. In 2009, it was revised and renamed the *Energy Policy*. This update reflects a more comprehensive approach for energy issues and includes electricity, heating and transportation fuels, and the interactions between them. The following graphic shows the relationships among the sections of this document.



VISION AND MOTIVATIONS

VISION

Fort Collins is a leader in the transition to sustainable and resilient local energy systems to serve the community's 2050 carbon neutral future.

MOTIVATIONS

The *Energy Policy* seeks to:

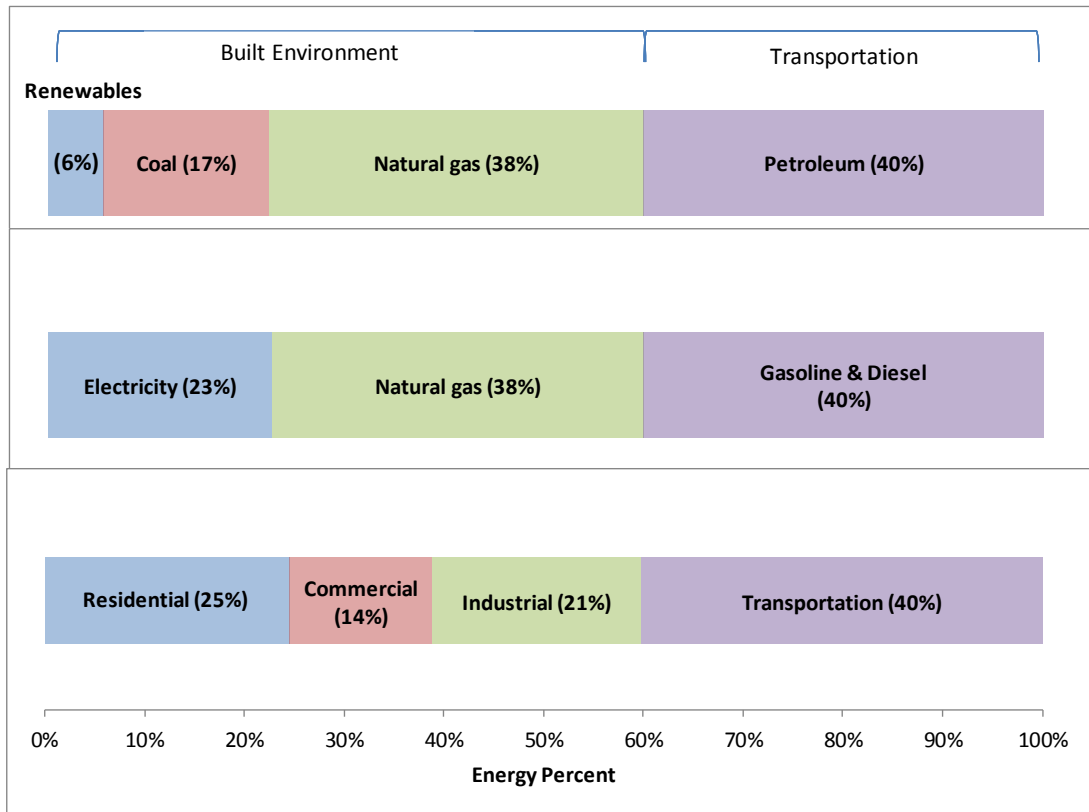
- Maintain or improve the reliability of energy delivery
- Promote energy affordability and safety for residents, businesses and institutions
- Support reductions of the community's GHG emissions from energy use in accordance with the *Climate Action Plan (CAP) Framework* (March 2015) – the current community GHG goals are a reduction of 20 percent from 2005 levels by 2020, 80 percent by 2030 and carbon neutral by 2050
- Reduce the emission of criteria pollutants
- Reduce the environmental damage caused by energy extraction and production
- Leverage the role of Fort Collins Utilities Light & Power as the community's municipally owned utility
- Retain more of our community's energy expenditures in the local economy
- Foster local economic opportunity in energy efficiency, production and operation
- Leverage opportunities to coordinate integrated planning for energy and water supply and demands
- Increase our community's resilience to potential energy and climate related disruptions
- Maintain compliance with and leverage the potential benefits of local, regional, state and national regulatory frameworks, which impact energy production and use (e.g., carbon, fuel standards, ozone)
- Make Fort Collins an energy leader that can serve as a model for other communities

The Energy Policy also recognizes Fort Collins greenhouse gas emission responsibilities through its ownership in Platte River Power Authority (Platte River). As a local action agency, generation and transmission authority, Platte River operates electricity generation facilities on behalf of the member-owner cities of Fort Collins, Loveland, Longmont and Estes Park. These facilities include fossil fuel resources (coal and natural gas), as well as non-carbon resources (hydro, wind and solar). Fort Collins, as a member-owner of Platte River, is responsible for an ownership allocation of the associated carbon emissions. As of 2014 the share was 47 percent.

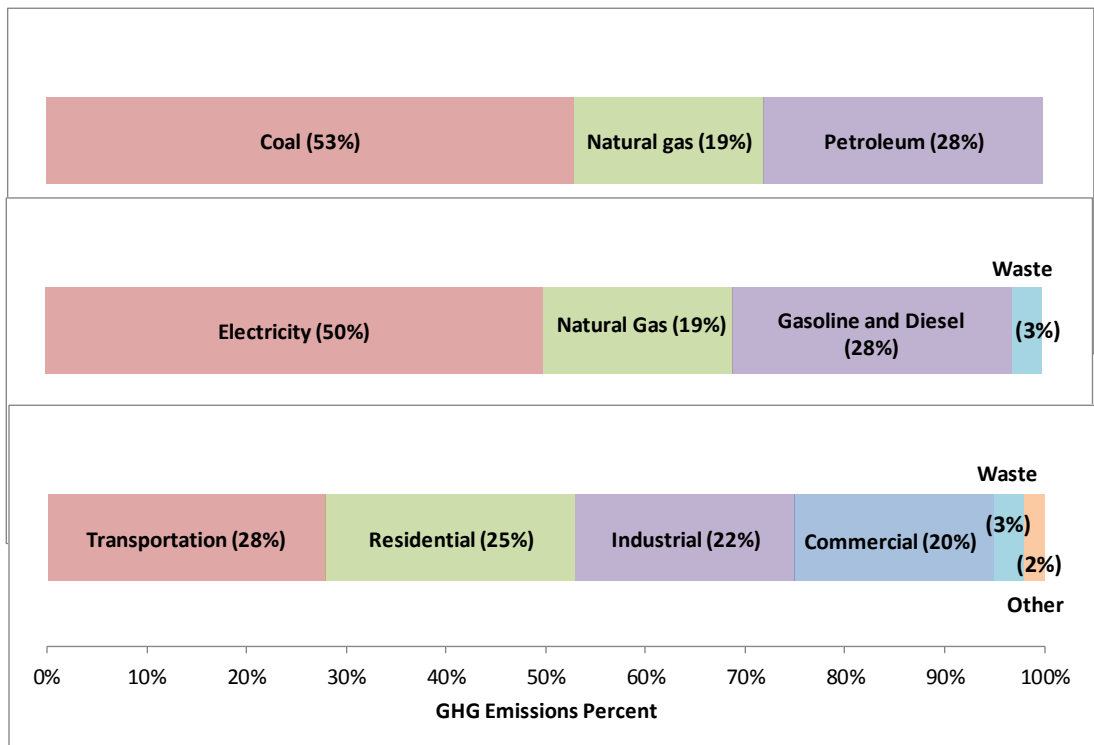
FORT COLLINS ENERGY CHARACTERIZATION

As a framework for understanding the challenges facing the envisioned transition of the community's energy systems, the following charts illustrate the diversity of Fort Collins energy sources and end use sectors in both primary energy and greenhouse gas metrics. Electricity is the largest single energy use source of GHG emissions, followed by transportation fuels and natural gas used for heating and industrial processes. By sector, residential emissions are followed by industrial and commercial, respectively, but ground travel is higher than any of the building sectors based on 2014 data.

Fort Collins Energy Profile (2014 data)



Greenhouse Gas Emissions Profile (2014 data)



POLICY OBJECTIVES

BUILT ENVIRONMENT

The building sector is Fort Collins’ top energy consumer and contributor to greenhouse gas emissions. Efficiency measures are generally the lowest cost resource available, compared to traditional or renewable supply-side choices. For new construction, building right the first time locks in energy savings and offers benefits for decades to come. By reducing the overall demand for energy, efficiency also makes all supply-side options more feasible and cost effective. As the carbon intensity of the electricity supply reduces over time, electrification of heat and process loads from natural gas becomes an additional strategy for reducing emissions from the built environment.

IMPROVE PERFORMANCE OF NEW BUILDINGS

- Adopt and enforce current International Energy Conservation Codes (IECC) within one year of issuance, with local amendments, advancing efficiency, indoor environmental quality, installed performance and readiness for building-scale renewable energy and demand response.
- Promote building energy performance through above-code standards with market and incentive approaches.

IMPROVE PERFORMANCE OF EXISTING BUILDINGS AND PROCESS ENERGY USE

- Support the reduction of natural gas use in the community through efficiency programs, information resources, and partnerships with other organizations to achieve targets in alignment with the CAP.
- Support the continuous energy use reduction in all building types and industrial processes through verifiable and cost-effective efficiency and conservation programs. As a percentage of community electricity use, achieve incremental annual electric portfolio savings of efficiency and conservation program savings of:¹

Year	Savings Target – %
2015	1.5
2016	1.75
2017	1.75
2018	2.0
2019	2.0
2020	2.5

¹ Incremental is defined as “new” savings achieved in a given year; maintaining existing behavioral program savings counts towards the total community annual results, but not towards the incremental target. In 2013 and 2014, incremental portfolio savings was 1.5% and total portfolio savings was 2.2%. The reference basis of the annual percentage energy use savings target is the average of community electric energy use for three years (including the target year). Cost effectiveness is to be calculated on the overall program portfolio using the Program Administrator Test, where utility incentive and administration costs for lifetime energy savings is less than the blended electricity supply price (or natural gas unit price where applicable).

ELECTRICITY SUPPLY AND DISTRIBUTION

Design and maintain an electricity distribution infrastructure to facilitate a diverse, efficient, economical, reliable, clean and secure transition to higher levels of renewable energy sources, both distributed and utility scale. This energy system includes infrastructure at the customer, local distribution and regional generation and transmission scale. The infrastructure also must deploy communication and control technology to manage the balance of distributed supply resources and customer demand. Since both the community waste stream and energy resources contribute to the community's greenhouse gas emissions, waste-to-energy may become a viable resource in the future. Fort Collins should seek opportunities to include electricity storage, as it is expected to become a transformational component of the electricity supply system.

ELECTRIC SUPPLY RESOURCES

The following Fort Collins objectives support resource diversity and increasing amounts of renewable energy sources²:

- Increase the diversity of the electricity supply by reducing the percentage contribution of coal-derived electricity to less than 60 percent by 2020
- Increase the overall amount of renewable energy to a minimum of 20 percent by 2020
- Increase the amount of distributed renewable energy to provide a minimum of 2 percent of community electricity requirements by 2020³
- Seek opportunities for local distributed generation resources such as combined heat and power and biomass in alignment with the *CAP Framework*
- Coordinate with Platte River to achieve a 20 percent reduction in greenhouse gas emissions by 2020

RELIABILITY

Demonstrate the high reliability of the Fort Collins electric system by maintaining annual reliability metrics of:

- Average System Availability Index (ASAI) greater than 99.9956 percent
- Customer Average Interruption Index (CAIDI) less than 45 minutes
- System Average Interruption Frequency Index (SAIFI) less than 0.66

ELECTRIC DISTRIBUTION

²Qualifying renewable resources as defined by the Colorado Renewable Energy Standard: "Renewable energy resources" are biomass (plant matter, animal waste, methane from landfills and wastewater treatment), solar, geothermal, wind and new hydro with a nameplate rating of 10 megawatts (MW) or less.

³Distributed renewable generation as defined by the Colorado Renewable Energy Standard: Retail distributed generation is, by definition, customer-sited (behind the meter) and also subject to an annual onsite energy consumption net metering cap of 120 percent. Wholesale or non-customer sited, distributed generation is defined as any renewable electric resource less than 30MW in nameplate capacity that is not retail distributed generation.

The electric distribution system is a key asset in the long-term vision of the *Energy Policy*, supported by the following objectives:

- Complete the *Electric Distribution Asset Management* plan by the end of 2016. The distribution system plan should include addressing proposed distributed generation and demand response targets.
- Increase the available peak dispatch capacity of the demand response system to 5 percent of annual peak loads by 2020.
- Develop plans for demand response integration with Platte River and the other cities to improve and understand demand response values as a system resource. Review the demand response capacity targets on an annual basis with regards to system value and pricing.
- Develop distribution modeling capabilities to support the asset management plans and grid modernization for distributed resource management.
- Participate in research, development and demonstration efforts to remain at the forefront of emerging technologies and holistic innovative solutions.

TRANSPORTATION AND LAND USE

Transportation is vital to our community, enabling us to move from where we live to where we work, learn, shop, recreate, and play. Fort Collins' transportation is fueled almost entirely by gasoline and diesel, accounting for over half of our city's total energy expenses, over 40 percent of total energy consumption, significant amounts of local air pollutants (NO_x, SO_x, and particulates) and 28 percent of GHG emissions.

The City's land use and transportation policies are established by *City Plan*, the *Land Use Code* and the *Transportation Master Plan*. These plan documents strive to foster and sustain a "connected community" that maintains high levels of mobility, while reducing the environmental, social and economic costs of our transportation systems. Since transportation demand and the feasibility of walking, cycling and public transit are determined by the mix, layout and density of land uses, as well as population size, the City should continue enhancing its system of integrated land use and transportation planning.

In order to responsibly manage energy resources, improve air quality and reduce GHG impacts associated with transportation and land use, this *Energy Policy* encourages an emphasis on the following objectives:

- Reduce total vehicle miles travelled (VMT), while maintaining mobility options, with a goal to reduce VMT by 10 percent (below 2005 levels) by 2020
- Reduce fossil fuel use per VMT

In support of these objectives, the *Energy Policy* recommends:

- Development of VMT annual estimation techniques which support the objectives of City transportation and energy policies prior to the next revision of the *Transportation Master Plan*

DEVELOPMENT, REDEVELOPMENT AND PARKING

Fort Collins is expected to substantially grow in population over the timeframe of the *Energy Policy*. "Smart growth" refers to transportation and land use planning that emphasizes urban density, mixed-use residential, commercial and recreational areas, multimodal transportation systems and pedestrian and bicycle-friendly streets. It is expected that Fort Collins residents will choose to drive less if the places where they live, work, learn and play are accessible in ways other than by automobile. The *City Plan* and *Transportation Master Plan* contain many smart growth policies that advance the objectives identified by this *Energy Policy*. With Fort Collins anticipated growth, greater emphasis on smart growth is essential to

minimizing transportation related energy impacts. This *Energy Policy* recommends increased efforts to implement smart growth related initiatives that ensure effective application of these principles.

Parking and congestion issues are emerging considerations that influence low-impact transportation options. This *Energy Policy* encourages continued assessment of the public costs of parking and automobile congestion in developing or amending parking and traffic congestion policies.

In order to effectively manage the expected energy impacts of on-going growth and development, the *Energy Policy* recommends:

- Developing energy related metrics for projects going through the development review process in coordination with the CAP implementation plan and prior to the next update of the *City Plan*

MULTIMODAL TRANSPORTATION

In order to advance the objectives of reduced VMT and reduced fossil fuel use per mile, the *Energy Policy* recognizes the importance of alternatives to automobile travel: walking, biking, carpooling and public transit. Through *City Plan* and the *Transportation Master Plan*, the City should continue encouraging the use of these modes through infrastructure and programming.

In addition to *City Plan* and the *Transportation Master Plan*, other planning documents such as corridor plans, area plans and modal plans, establish policies and action items at varying scales. Many of these plans, such as the *2011 Pedestrian Plan*, the *2014 Bicycle Master Plan* and the *2009 Transport Strategic Operating Plan*, advance *Energy Policy* objectives as they relate to transportation system energy use. The *Energy Policy* encourages implementation of existing plan elements that contribute to achievement of these objectives.

Information technologies are transforming how people live and how cities function. Mobile communication devices in particular, help commuters with smart trip planning by providing access to transit routes and schedules, bike- and car-sharing availability and traffic conditions. This *Energy Policy* encourages continued investment in intelligent transportation systems, either through City-crafted trip-planning software, or by releasing transportation data to the public so application developers can create trip-planning products for the market.

In order to more effectively manage the opportunities for mitigating transportation energy impacts, the *Energy Policy* recommends:

- Developing metrics reflecting multi-modal transportation use prior to the next revision of the *Transportation Master Plan*

FUEL-EFFICIENT AND ELECTRIC VEHICLES

Increased adoption of more fuel-efficient and electric vehicles in Fort Collins means the reduction of petroleum fuels and their associated negative consequences. The City can help residents with data regarding the advantages of high-efficiency, hybrid and electric vehicle choices and by promoting the development of clean vehicle fueling infrastructure. As the carbon intensity of the electricity supply reduces over time, electric vehicles become an essential strategy for reducing emissions from ground transportation. Next steps include:

- Develop metrics for fleet average fuel efficiency and the number of electric vehicles in Fort Collins prior to the next revision of the *Transportation Master Plan*

ELEMENTS OF THE *TRANSPORTATION MASTER PLAN* PERTAINING TO ENERGY

The current *Transportation Master Plan* states these principles which further support this *Energy Policy*:

- Reduce congestion and vehicle idle time
- Integrate alternative vehicle technology and advances
- Enhance travel corridors to improve transportation efficiency, as well as enabling alternative transportation modes
- Improved access to bicycle and pedestrian trails
- Create fixed transit corridors to promote transit-oriented development

The *Transportation Master Plan* is periodically amended and updated to address changing conditions and policies. The *Transportation Master Plan* should advance *Energy Policy* objectives by considering these principles during future updates:

- Reduce community VMT
- Reduce fossil fuel use per VMT
- Support pedestrian and bike-friendly layout

ELEMENTS OF LAND USE PLANNING PERTAINING TO ENERGY

City Plan and the *Land Use Code* are periodically amended and updated to address changing conditions and policies. *City Plan* and the *Land Use Code* should further advance *Energy Policy* objectives through the consideration of these principles during future updates:

- Regularly review the *Land Use Code* to support high performance development projects and local renewable energy generation and storage
- Continue the advancement of land use principles promoting infill, redevelopment and additional planning initiatives
- Explore ways to enable and encourage property owners to maximize the use of shared resources such as combined heat and power, geo-exchange and energy storage

IMPLEMENTATION PRINCIPLES

The follow principles provide guidance for developing strategies to achieve *Energy Policy* goals, while supporting community values. Efforts to achieve the goals should leverage existing programs and services to maximize participation among Fort Collins residents, businesses and institutions.

SYSTEMS THINKING

Energy is generated, transmitted and consumed through complex, interrelated systems. As such, the decisions made on any component must be evaluated by their impacts on the other related components. The economic, environmental, social and operational aspects of these components should be evaluated as systems from source to consumption.

The *Energy Policy* encourages a systems approach in looking at the interactions of utilities, buildings, land use planning and streets. Additionally, it promotes the provision of energy infrastructure beyond electricity and natural gas across traditional project and parcel boundaries. This infrastructure could extend to thermal energy systems and electrical energy storage.

PARTNERSHIP

The City has a wide range of local and regional energy partners. These partnership resources can best be used through continued engagement, collaboration, data-sharing and program development.

- **Platte River:** Platte River provides generation and transmission electric services for Fort Collins, Loveland, Longmont and Estes Park, and is owned jointly by the four cities. Platte River is an essential partner in support of Fort Collins' *Energy Policy* goals, including electricity supply and customer efficiency programs and services.
- **Platte River member cities:** The four Platte River member cities each have unique needs and philosophies to meet their community goals. There are many opportunities to work together to build strong, efficient and clean electrical energy systems in a cost-effective manner. Future electricity markets may provide regional opportunities to support accomplishing the goals of the *Energy Policy*.
- **Educational and research institutions:** Colorado State University is one of the City's largest customers and a leading energy research institution.
- **Xcel Energy:** Xcel provides natural gas to city residents and businesses and electric services to residents with important coordination needs relating to data exchange, reporting and customer efficiency efforts with a regional approach.
- **Private enterprise:** Collaboration and public-private partnerships will be an important avenue in accomplishing *Energy Policy* goals through research, development, demonstration and implementation efforts.
- **Other governmental organizations:** The City should continue to partner with other governmental organizations such as the Poudre School District, U.S. Department of Energy, the Environmental Protection Agency, the Colorado Energy Office and Larimer County to name a few.
- **Community organizations:** Fort Collins residents acting through formal and informal organizations are key stakeholders and provide an important engagement opportunity.

COMMUNITY ECONOMICS

LOCAL ECONOMIC HEALTH

This *Energy Policy* aligns with Fort Collins' leadership in the transition to a clean-energy economy. The City has the potential to stimulate local innovation and entrepreneurial activity, attract new partners and outside capital and encourage funding for cutting edge research and development. The City of Fort Collins can help facilitate projects to stimulate private industry to achieve policy goals while also improving the local economy. The City also should be a leader in deploying efficiency, conservation and renewable energy in its own operations to demonstrate the feasibility of strategies and tactics. The community can benefit from the creation of quality jobs from the implementation of strategies in support of *Energy Policy* goals.

FORT COLLINS UTILITIES LIGHT & POWER

Fort Collins Utilities has supported our local economy with highly reliable service and a history of low and stable electric rates. Going forward, competitive rates combined with energy efficiency and conservation programs to result in sustainable energy bills, while supporting economic activity. Fort Collins Utilities' business activities also support the local economy as a direct and indirect employer and as a contributor to the City's general fund, by leveraging investment in energy efficiency and renewable energy and by supporting research and demonstration projects.

It is important to maintain the financial health of the Fort Collins Utilities Light & Power enterprise fund to support the vision of the *Energy Policy*. The century-old model of the electric utility is rapidly changing due to technological and market forces. Fort Collins Utilities must be allowed to lead this change to the community advantage. At the same time, Fort Collins is one of four member owners of Platte River Power Authority. Changes from the existing centralized power generation model toward distributed and variable resources should be developed in coordination with Platte River, considering overall system impacts, costs, and operations.

Light & Power should seek to pilot new services and models for existing services to explore the best ways to take advantage of new opportunities to advance this *Energy Policy* and maintain the Utilities' financial health.

ELECTRICITY PRICING

Electricity pricing provides a direct connection for citizens and businesses to relate to the community energy system. Fort Collins Utilities should provide predictable long-term directions with regards to rate structures and pricing. The pricing of electrical energy should strive to balance the following principles:

- Reflect the short-term and long-term costs, both direct and indirect, of generating and delivering electricity
- Demonstrate equity and fairness by distributing costs over the customer base in proportion to the cost of service
- Consider both per unit costs (rates) and total bills in comparisons of competitiveness and affordability
- Promote efficiency and conservation with meaningful price signals
- Set a clear, public, long-term direction for electric rates with gradual changes
- Develop rates in the context of long-term asset planning, fixed cost recovery and financial stability
- Incorporate robust stakeholder engagement

INFORMATION AND EDUCATION

Fort Collins Utilities and other City departments should continue to facilitate participation in programs and services through education and partnerships that build trust with community stakeholders and the public to enhance Utilities' reputation as a world-class utility and the best source of energy information.

The City should continue to be a credible and effective source of information and education for the community with regards to energy issues and an objective of fostering a resilient and engaged community. Key outcomes include:

- Provide citizens and business owners with information on energy sources and related financial and environmental data
- Provide citizens and business owners tailored options for managing, producing and reducing energy use
- Create collaborative and strategic relationships within the community

PRIVACY AND SECURITY

Fort Collins Utilities will continue to:

- Institute policies, procedures and equipment to secure its distribution, generation, control and communication systems against misuse
- Maintain privacy and security policies relating to personal data so customers are assured of privacy and security of their data and informed of how their data may be used

CONNECTIONS AND METRICS

CONNECTIONS TO OTHER PLANS AND PROGRAMS

Energy Policy goals are closely related to the goals, principles and policies in other City plans and programs and with those of Platte River. For example, GHG reduction, efficiency, conservation and reducing air, water and soil pollution are common to a number of plans and programs. By emphasizing the alignment between programs, the City can identify opportunities to implement actions that benefit multiple programs simultaneously.

The plans and programs that directly address or are closely connected to energy include:

- *Climate Action Plan*
- *Platte River Power Authority Strategic Resource Plans*
- *City Plan*
- *Transportation Master Plan*
- Building and land use codes
- *Water Efficiency Plan*
- *Green Building Roadmap*
- *Road to Zero Waste*
- *Air Quality Plan*
- *Economic Health Strategic Plan*
- *City Strategic Plan*
- *Social Sustainability Strategic Plan*

IMPLEMENTATION AND METRICS

City and Utilities resources for implementation of the *Energy Policy* will be managed through the normal and customary processes for budgeting, appropriations and rate setting.

The Utilities Executive Director will provide the City Manager, Energy Board and City Council with an annual status report on the *Energy Policy*. The report will document progress on the goals and objectives, costs and benefits of policy initiatives and updated strategic planning.

POLICY REVIEW

The *Energy Policy* will be reviewed and revised at five year intervals with the next review concluding in 2020. If necessary, more frequent reviews may be recommended by the Energy Board or City Council to adapt to significant goal changes or to align with other City plans.