CITY OF CLAREMONT

ENERGY ACTION PLAN

Funded by:
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LIST OF ABBREVIATIONS

Abbreviation	Definition
AB	Assembly Bill
ABAU	adjusted business-as-usual
AB 32	Assembly Bill 32, California Global Warming Solutions Act of 2006
AB 1493	Assembly Bill 1493, Clean Car Fuel Standard, also referred to as Pavley bill
ADC	alternative daily cover
BAU	business-as-usual
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEC	California Energy Commission
CEESP	California Long-Term Energy Efficiency Strategic Plan
CH_4	methane
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CNG	compressed natural gas
CPUC	California Public Utilities Commission
CSI	California Solar Initiative
DR	demand response
EAP	Energy Action Plan
EEMIS	Energy Enterprise Management Information System
ELP	Energy Leader Partnership
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbons
HPS	high pressure sodium
HVAC	heating, ventilation, and air conditioning
iDSM	integrated demand-side management
kW	kilowatt
kWh	kilowatt-hour
LED	light-emitting diode

Abbreviation	Definition
LEED	Leadership in Energy and Environmental Design
LGOP	Local Government Operations Protocol
MT	metric ton
$MTCO_2e$	metric ton of carbon dioxide equivalent
N_2O	nitrous oxide
PFC	perfluorocarbons
PSC	Project Steering Committee
PV	photovoltaic
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SCREC	Southern California Regional Energy Consortium
SF_6	sulfur hexafluoride
SGVCOG	San Gabriel Valley Council of Governments
SGVEWP	San Gabriel Valley Energy Wise Partnership
SoCalREN	Southern California Regional Energy Network
VMT	vehicle miles traveled

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This Energy Action Plan (EAP) demonstrates the City's commitment to pursue energy efficiency and reduce greenhouse gas (GHG) emissions. The purpose of this EAP is to identify the City of Claremont's long-term vision and commitment to achieve energy efficiency in the community and in municipal operations. Specifically, this EAP includes the following chapters:

- **Chapter 1: Introduction** – Provides an overview of the purpose and scope of the project, as well as the process and outreach efforts involved in developing this EAP.
- **Chapter 2: GHG Inventory and Forecast** – Summarizes the GHG-generating activities occurring within the community and through municipal operations.
- **Chapter 3: Electricity Profile** – Highlights the factors that influence electricity use within the community by comparing energy uses to regional averages and identifies top electricity uses within municipal accounts.
- **Chapter 4: Energy Efficiency Strategy** – Identifies a comprehensive set of electricity-related energy efficiency targets, goals, policies, and actions to help the community and the City become more energy efficient.
- **Chapter 5: Plan Implementation** – Provides policies and actions to assist with the implementation of the energy efficiency strategy, and summarizes the policies, benefits, implementation time frame, and responsible departments for implementing the components of the energy efficiency strategy.
- **Chapter 6: Conclusion** – Reaffirms the City's commitment to implementing energy efficiency projects, programs, and policies to support the goals of the California Long Term Energy Efficiency Strategic Plan and foster energy efficiency throughout the community.

To support the content found throughout the EAP, several technical appendices have been prepared to provide additional detail and information regarding GHG reductions and sources. This plan includes the following appendices:

- **Glossary of Terms** – Defines the key terms used throughout the document.
- **References** – Provides a list of citations and sources used throughout the EAP.
- **Appendix A: Greenhouse Gas Emissions Inventory Report** – Technical memorandum about GHG emissions inventory results and methodologies.
- **Appendix B: Greenhouse Gas Reductions Report** – Provides a list of the emissions factors utilized in calculation of GHG emissions as well as a summary of the sources and assumptions used to estimate the potential range of kilowatt-hours (kWh) and GHG savings for each policy.
- **Appendix C: ELP Requirements Checklist**

CHAPTER 1: INTRODUCTION

Chapter 1 provides a brief overview of the purpose and scope of this EAP and how this Plan was created in partnership with the San Gabriel Valley Council of Governments (SGVCOG) and Southern California Edison (SCE). The City has prepared this Plan not only to follow the guidance of California's Long Term Energy Efficiency Strategic Plan (CEESP) but also to identify a clear path to successfully implementing actions, policies, and goals that will achieve the City's reduction targets.

This project was funded through the technical assistance program of the CEESP, which aims to provide local governments with expertise and resources to achieve energy efficiency at municipal facilities and throughout the community. In 2009, as part of CEESP implementation, the California Public Utilities Commission authorized SCE to use funding from the electricity public goods charge to complete strategic plan activities focused on energy efficiency. SCE is implementing the "Big Bold" strategies of the CEESP, and through this process, SCE awarded funding to the SGVCOG to provide funding and technical support for preparation of the EAP.

CHAPTER 2: GHG INVENTORY AND FORECAST

The baseline GHG inventory and forecast assess existing and future GHG emissions based on activities and energy consumption from community and municipal activities (see **Figure ES-1**). A baseline year of 2006 was selected for the inventory. Activity data for 2010 community sectors was also collected and assessed, including energy, transportation, waste, community off-road, wastewater, and water sectors. This 2010 analysis was translated into GHG emissions to serve as a common benchmark that will allow for accurate comparison between all cities in the San Gabriel Valley participating in the EAP process.

Figure ES-1: Community and Municipal GHG Emissions Sources

Community

Energy – Electricity and natural gas consumed by residents and businesses in the city.

Direct Access Electricity – Electricity purchased by commercial customers from energy service providers other than Southern California Edison.

Street and Traffic Lighting – Electricity used by street and traffic lights within the city but not owned by the City.

On-Road Transportation – Vehicle miles traveled (VMT) in, to, and from the city.

Waste – Methane emissions from waste (municipal solid waste) and green waste (alternative daily cover) sent to landfills and regional incinerators (also known as transformation facilities) from the city.

Water and Wastewater – Energy required to extract, filter, deliver, and treat the water used and wastewater disposed by the community.

Off-Road Equipment – Emissions from construction and lawn & garden equipment operated within the city.

Municipal

Buildings – Electricity and natural gas consumed by City buildings and facilities.

Off-Road Equipment – Fuel used for construction projects, landscaping, or other off-road purposes.

Fleet – Gasoline, diesel, and compressed natural gas (CNG) used by all City-owned vehicles.

Lighting – Electricity, paid for by the City, used by street and traffic lighting and outdoor lighting at parks and other facilities within city limits.

Employee Commute – Emissions from the vehicles City employees use to get to and from work.

Government-Generated Solid Waste – Indirect emissions from the waste disposed by employees and operations of the City.

Inventories of GHG emissions from community-wide and municipal operations are described in **Chapter 2** and are summarized in **Figure ES-2** and **Figure ES-3,** below. In 2006, community activities generated approximately 312,880 $MTCO_2e$, while approximately 2,590 $MTCO_2e$ were attributed to municipal operations. While municipal GHG emissions are typically considered a subset of community sources and represent 1% of total community GHG emissions, they are

included in this analysis as the City has a greater ability to influence municipal GHG emissions through changes to City facilities, purchasing policies, or other City-led efforts to reduce GHG emissions within City operations.

Figure ES-2: Community-Wide GHG Emissions by Sector, 2006 ($MTCO_2e$)

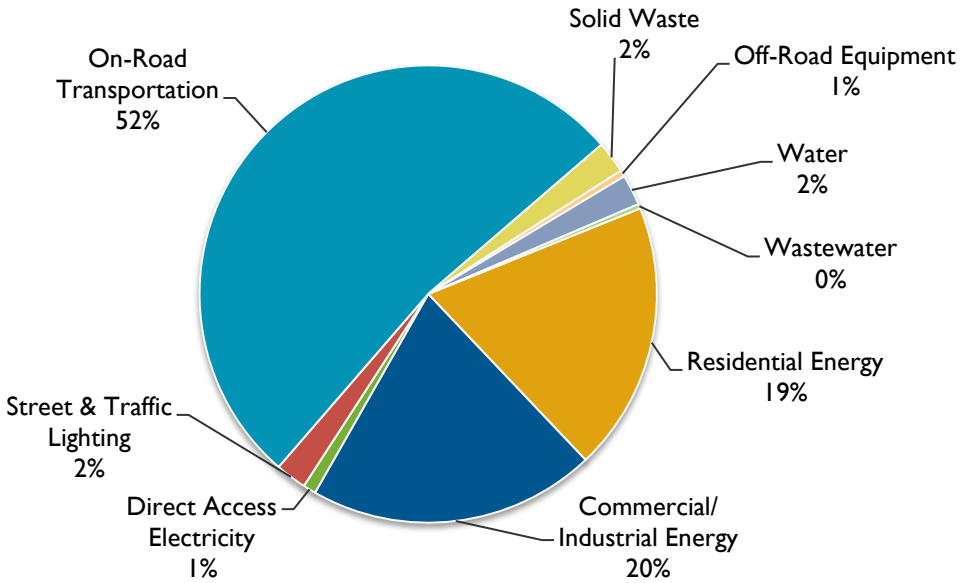
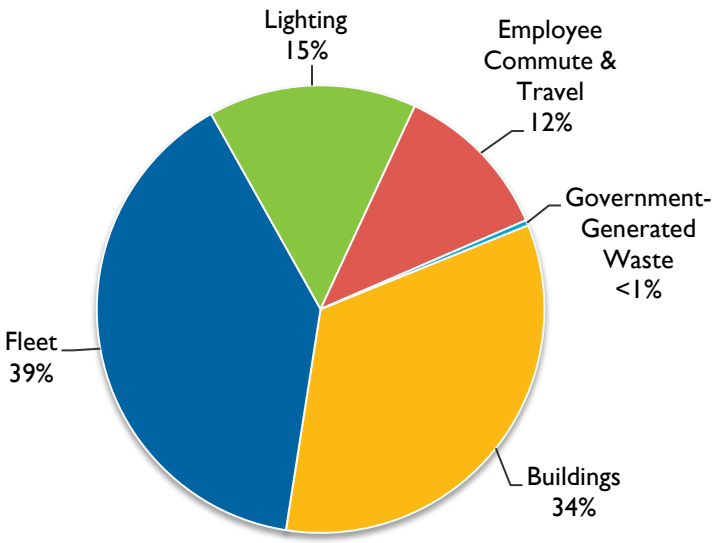
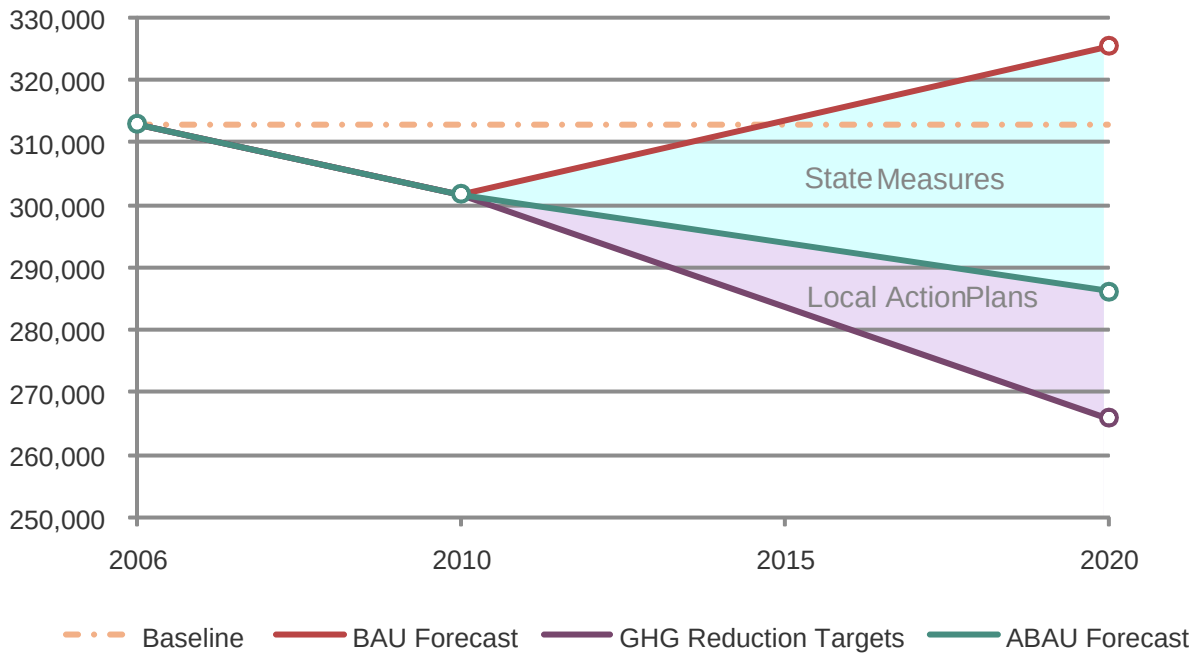


Figure ES-3: Municipal GHG emissions by Sector, 2006 ($MTCO_2e$)



Following the development of the baseline GHG emissions inventory, GHG emissions are forecast to 2020 under a business-as-usual (BAU) scenario based on anticipated growth in the number of residents and jobs, the amount of vehicle travel, and the effect that growth will have on GHG emissions without political, technical, or social intervention to reduce GHG emissions. Additionally, the impact that state policies or legislation will have on local GHG emissions is included in an adjusted business-as-usual (ABAU) scenario, and the recommended GHG reduction target to comply with Assembly Bill 32 is identified and described in **Figure ES-4** below and in more detail in **Chapter 2**.

Figure ES-4: Comparison of BAU Forecast and Reduction Target, 2006–2020

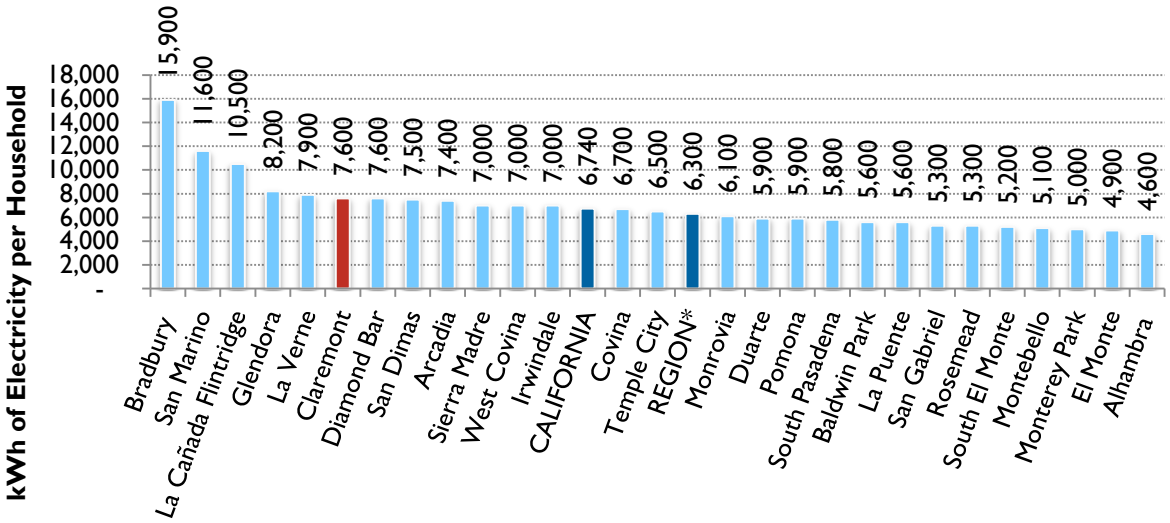


CHAPTER 3: ELECTRICITY PROFILE

The electricity profile describes the residential and nonresidential as well as municipal electricity use in the City of Claremont. Electricity used in Claremont's homes and businesses is provided by SCE. SCE generates electricity from a mix of nonrenewable sources, such as natural gas and coal, and renewable sources, such as biomass, geothermal, hydroelectric, solar, and wind.

Claremont's electricity uses are tied to the built environment, which is predominantly characterized by its single-family residences. Claremont is a bedroom community, and also has many historic homes and buildings. Claremont also has a significant student population from the five undergraduate colleges that make up Claremont Colleges located within the city. As shown in **Figure ES-5**, each Claremont household used an average of 7,600 kilowatt-hours in 2010. This amount is more than the California average of 6,740 kWh and more than the SGVCOG project average of 6,300 kWh.

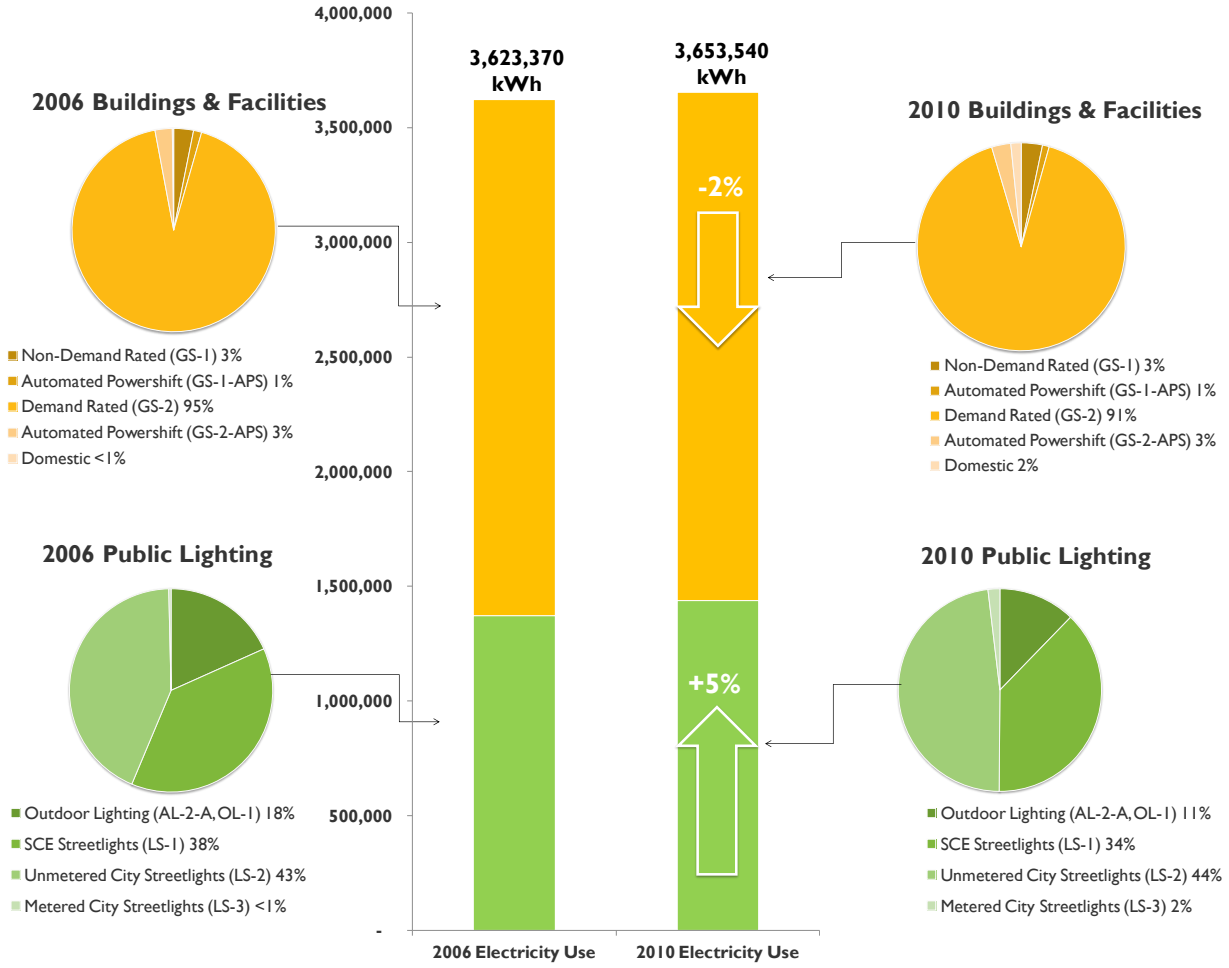
Figure ES-5: Annual Average kWh of Electricity Use per Household, 2010



**Regional electricity numbers represent the San Gabriel Valley average for all 27 cities participating in the EAP project.*

Municipal electricity use is also described in detail in **Chapter 3** by depicting the changes in electricity use between the baseline year and 2010 (see **Figure ES-6**), and identifying the largest electricity uses by account to highlight the energy efficiency actions already completed or under way at City facilities and identify the largest opportunities for reducing electricity use.

Figure ES-6: Municipal Electricity Use by Account Type, 2006–2010



CHAPTER 4: ENERGY EFFICIENCY STRATEGY

The City of Claremont has identified key electricity efficiency targets, shown in **Figure ES-7**, to support the goals of the Energy Leader Partnership and local planning priorities. To achieve the electricity reduction targets for each electricity sector, the City has identified a set of goals, policies, actions, and projects to be implemented, which are listed in Chapter 4.

Figure ES-7: Claremont's Energy Efficiency Targets

46,930 $MTCO_2e$ Target Reduction	Achieve a 15% reduction below baseline GHG emissions by 2020.
78,615,000 kWH Target Reduction	Reduce community-wide electricity use 13% by 2015 and 20% by 2020.
Supportive	Achieve high energy efficiency performance for all new residential and nonresidential buildings, exceeding minimum standards of Title 24.
1,087,010 kWH Target Reduction	Reduce municipal electricity use 20% by 2015 and 30% by 2020.

The City's EAP is focused around seven strategy topics or goals, as shown in **Figure ES-8**, to support electricity reductions and energy efficiency within the community and municipal facilities.

Figure ES-8: Energy Efficiency Strategy Topics

The actions included in this Plan build upon the City's previous efforts and are a diverse mix of programs for both new and existing development. The final topic area of the energy efficiency strategy focuses on municipal electricity use by identifying the completed, near-term, and long-term projects or policies to achieve energy efficiency in municipal

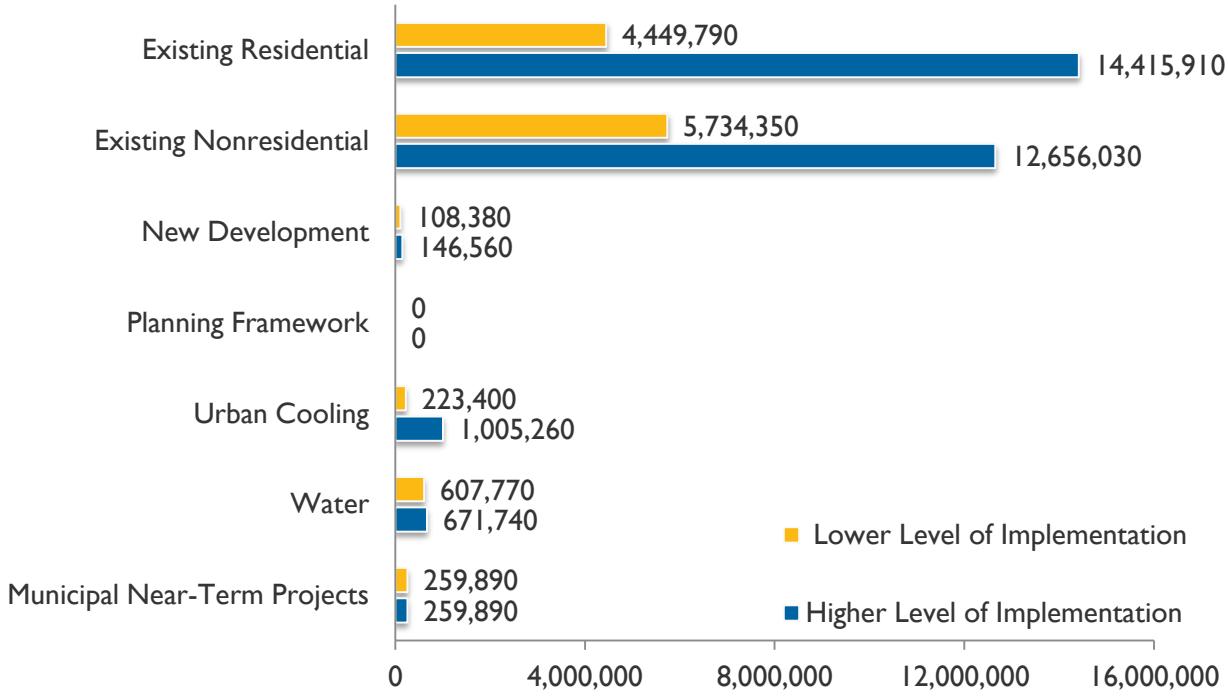
facilities. **Table ES-1** summarizes the near-term municipal projects to be implemented by the City. In addition to the municipal projects, this EAP identifies a clear path for Claremont to achieve the community-wide electricity reduction targets for both residential and nonresidential uses. **Figure ES-10** identifies the potential range of electricity savings (kWh) that may occur by 2020 through the implementation of this strategy. Policies in this EAP have the potential to reduce community-wise electricity use 5% below baseline 2006 levels by 2020.

Table ES-1: Near-Term Municipal Projects

Location	Project	Annual Electricity Reduction (kWh/year)	Annual Cost Savings	Estimated SCE Incentive	Funding Opportunities
Joslyn Senior Center	Lighting upgrades and installation of occupancy sensors	16,660	3,470	1,310	On-Bill Financing, SCREC, CEC Loans
Police Department	Lighting upgrades and installation of occupancy sensors	39,060	4,510	2,240	On-Bill Financing, SCREC, CEC Loans
Alexander Community Center	HVAC retrofits and upgrades	95,920	14,580	8,800	On-Bill Financing, SCREC, CEC Loans
City Hall	Lighting upgrades and installation of occupancy sensors	43,320	6,940	4,200	On-Bill Financing, SCREC, CEC Loans
City Hall	HVAC tuning and upgrades	12,320	2,940	1,110	On-Bill Financing, SCREC, CEC Loans
Alexander Community Center	Lighting upgrades and installation of occupancy sensors	43,360	6,500	2,710	On-Bill Financing, SCREC, CEC Loans
Police Department	Heat pump replacement	9,250	1,070	1,150	On-Bill Financing, SCREC, CEC Loans
City-wide[1]	Replace HPS lamps in City streetlights with LED lamps	TBC	TBC,TBC715		On-Bill Financing, SCREC, CEC Loans
Total		**299,890**	**45725**	**21,520**	

1. To be confirmed. Data unavailable at the time of report preparation.

Figure ES-9: Estimates 2020 kWh Savings by Goal



CHAPTER 5: PLAN IMPLEMENTATION

To ensure successful implementation of the EAP, several strategies and supporting actions have been included in **Chapter 5**, the implementation chapter. This chapter also includes an implementation matrix with details specific to each policy, such as the electricity and GHG reductions that can be achieved. The implementation matrix will be a critical tool in monitoring the City's progress toward implementing the EAP.

CHAPTER 6: CONCLUSION

This EAP is an opportunity for the City to create and achieve a long-term vision for energy efficiency. The City of Claremont has developed this EAP as part of a regional framework that allows for close coordination and consistency between communities located in the San Gabriel Valley while responding to local community characteristics, values, and planning frameworks. Although the primary focus of this Plan is on reducing electricity and related GHG emissions, the policies and actions in this EAP also provide the ancillary benefits of improving air quality and the quality of life, enhancing natural areas, and stimulating the local economy through incentives in energy efficiency.

CHAPTER 1

INTRODUCTION

This Energy Action Plan (EAP) captures the City of Claremont's continuing vision for sustainability and creates a strong framework for achieving the City's long-term goals for energy efficiency. As a tool to help the City identify clear benchmarks for electricity reductions, the EAP equips the City to further implement its existing sustainability initiatives. Additionally, the EAP places the City's efforts within the overall regional and statewide context for climate change and energy efficiency. The intent of this Plan is to recognize the City's early leadership in sustainability while helping the City to leverage new opportunities and take energy efforts further. Through the implementation of this Plan, the City can work effectively to achieve optimal energy performance throughout the community, increasing operational productivity, cost savings, and the quality of life for residents, employees, and business owners. This Plan also identifies programs to achieve cost savings in City government facilities through energy reductions and more efficient maintenance and operational practices.

CHAPTER 1

PURPOSE AND SCOPE

The purpose of this EAP is to affirm the City of Claremont's vision and commitment to long-term energy sustainability and to identify a framework to achieve specific energy efficiency goals in the community and in government operations. The rationale for Claremont's energy efficiency efforts includes demonstrating leadership in implementing cost-effective energy efficiency improvements, minimizing costs associated with energy and utilities, and protecting limited energy and natural resources. Building from the City's strong foundation of existing sustainability efforts, the Plan equips the City to update its toolkit for energy efficiency and capitalize on regional resources. By using the City's existing planning efforts, this Plan provides transparent reduction targets. The City will use this Plan to assess the overall impact of energy efforts on climate change, allowing the City to identify additional non-energy opportunities to advance the local sustainability framework.

Local governments play an important role in leading the community by example. This EAP shows the benefits of efficiency that the City will realize in government operations, providing a foundation for more comprehensive community-wide efficiency strategies. Strategies in this EAP provide a path toward optimizing energy use in the city, increasing the quality and comfort of homes and businesses, reducing utility costs, and maximizing operational productivity of local businesses.

The EAP is a stand-alone document that meets multiple objectives of the City and Southern California Edison (SCE). The EAP supports the City's status in the Energy Leader Partnership with SCE. In addition, the EAP serves as the equivalent of an electricity efficiency chapter of a climate action plan. It is designed to integrate into a comprehensive climate action plan when the City's resources support the preparation of a climate action plan to address the reduction of greenhouse gas (GHG) emissions from electricity, natural gas, waste, transportation, and other sectors.

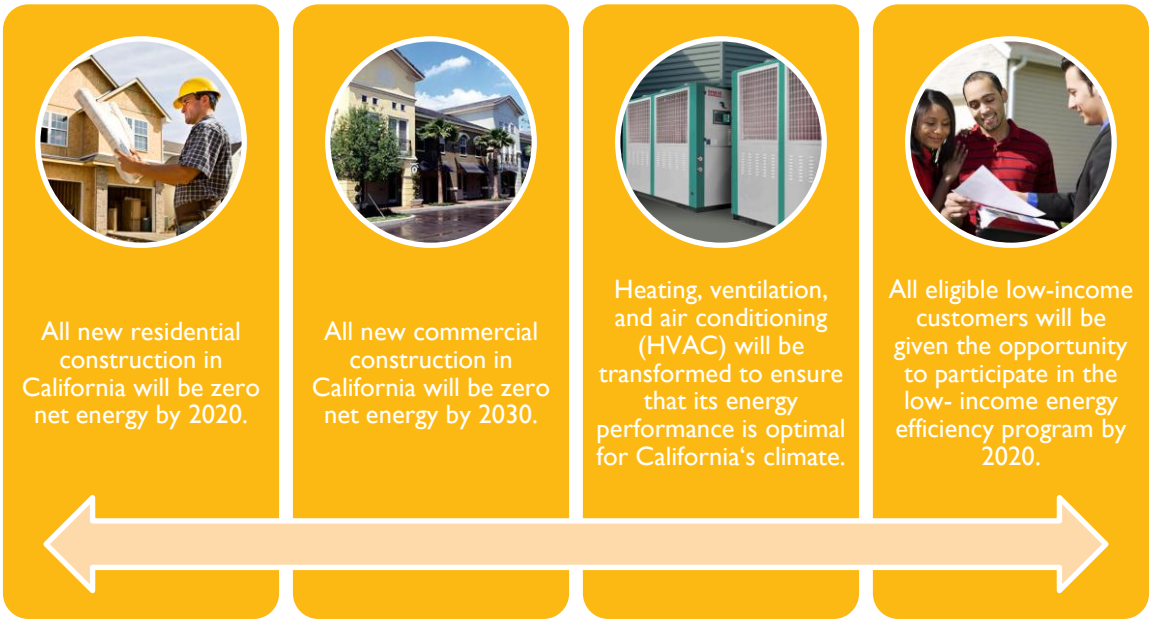
Created in partnership with the San Gabriel Valley Council of Governments (SGVCOG) and SCE, this EAP identifies municipal and community-wide strategies to achieve the City's longer-term electricity efficiency goals. This integration of municipal and community-wide strategies allows the City to lead by example. Specifically, the objectives of this EAP are to:

- Create a long-term vision for energy efficiency.
- Provide and assess information related to energy use and GHG emissions.
- Establish reduction targets for energy efficiency.
- Identify goals, policies, and actions to achieve energy reductions.
- Provide a framework implementing the identified goals, policies, and actions.

SOUTHERN CALIFORNIA EDISON AND THE CALIFORNIA LONG TERM ENERGY EFFICIENCY STRATEGIC PLAN

California's Long Term Energy Efficiency Strategic Plan (CEESP) is the State's road map for achieving energy efficiency between 2006 and 2020, and beyond. The California Public Utilities Commission (CPUC) adopted the CEESP in 2008 following a collaborative planning effort of the CPUC, the state's investor-owned utilities, the governor's office, the California Energy Commission (CEC), the California Air Resources Board (CARB), and more than 500 individuals and organizations. The CEESP provides a strategic menu list of options that local governments can use to address the "Big Bold" strategies found in the strategic plan. These "Big Bold" strategies are shown in **Figure 1**.

Figure 1: "Big Bold" Strategies of the CEESP



In addition, the CEESP identifies two primary goals that this EAP seeks to achieve:

- CEESP Section 12.5 Goal 3: Local governments lead by example with their own facilities and energy usage practices.
- CEESP Section 12.5 Goal 4: Local governments lead their communities with innovative programs for energy efficiency, sustainability, and climate change.

The EAP meets these goals by providing goals, policies, and actions for municipal operations as well as for community activities. The CEESP also identifies a long-term vision and energy efficiency goals for California, as well as outlining specific near-term, mid-term, and long-term implementation strategies to assist each economic sector in achieving its energy efficiency goals.

The CPUC identified several policy tools to assist in the market transformation to more energy-efficient products or practices, including:

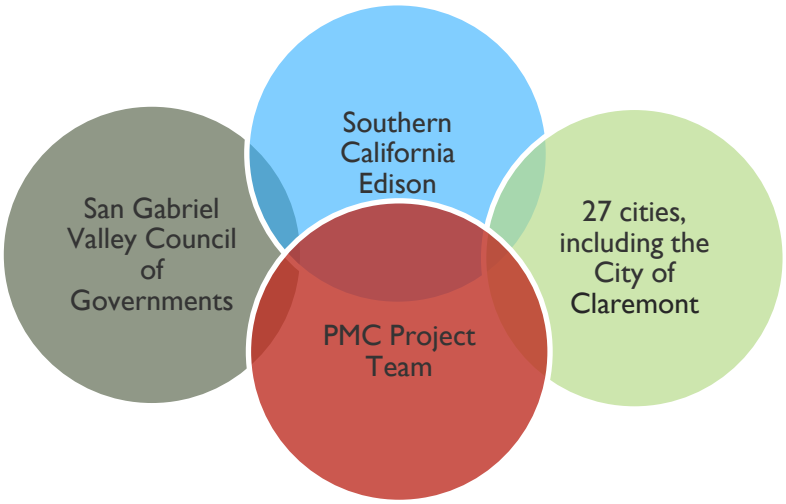
- Customer incentives.
- Codes and standards.
- Education and information.
- Technical assistance.
- Emerging technologies.

The City prepared this EAP through the technical assistance program of the CEESP, which aims to provide local governments with the technical expertise and financial resources to achieve energy efficiency at municipal facilities and throughout the community. In 2009, as part of CEESP implementation, the CPUC authorized SCE to use funding from the electricity public goods charge to complete local strategic plan activities focused on energy efficiency. SCE is

implementing the "Big Bold" strategies of the CEESP. Through this process, SCE awarded funding to the SGVCOG and participating cities to provide funding and technical support for preparation of a regional framework and tailored, city-specific EAPs through a regional planning process.

The SGVCOG managed the project, through partnership with SCE and 27 member cities of the SGVCOG that receive electricity service from SCE, and the consultant team led by PMC.[1] The project included preparation of customized EAPs for each participating city, including a comprehensive GHG emissions inventory, a forecast of community activities and municipal operations, and longer-term goals, policies, and actions. This EAP has been prepared as part of a coordinated effort among the SGVCOG, SCE, the City of Claremont, and PMC (see **Figure 2**).

Figure 2: Partners in the EAP Planning Process



THE ENERGY LEADER PARTNERSHIP MODEL

SCE developed the Energy Leader Partnership (ELP) model to provide support to local governments in identifying and implementing opportunities to improve energy efficiency in municipal facilities and promoting community awareness of demand side energy management opportunities. By participating in SCE's ELP, local governments are taking actions to support the CEESP while saving energy and fiscal resources for their communities. In the San Gabriel Valley, the SGVCOG is leading the implementation of the ELP with SCE and 27 of the 31 member cities in the SGVCOG.

The ELP comprises four focus areas: municipal retrofits, demand response, strategic plan support, and energy efficiency programs coordination. The ELP program has four incentive tiers for participating cities: (1) Valued Partner, (2) Silver, (3) Gold, and (4) Platinum. Each city begins the program as a valued partner. To advance to the next incentive tier, each participating city must achieve the predetermined energy savings and requirements for city facilities and community electricity use as shown in **Figure 3**. The City of Claremont is currently a Silver partner in the Energy Leader Partnership model.

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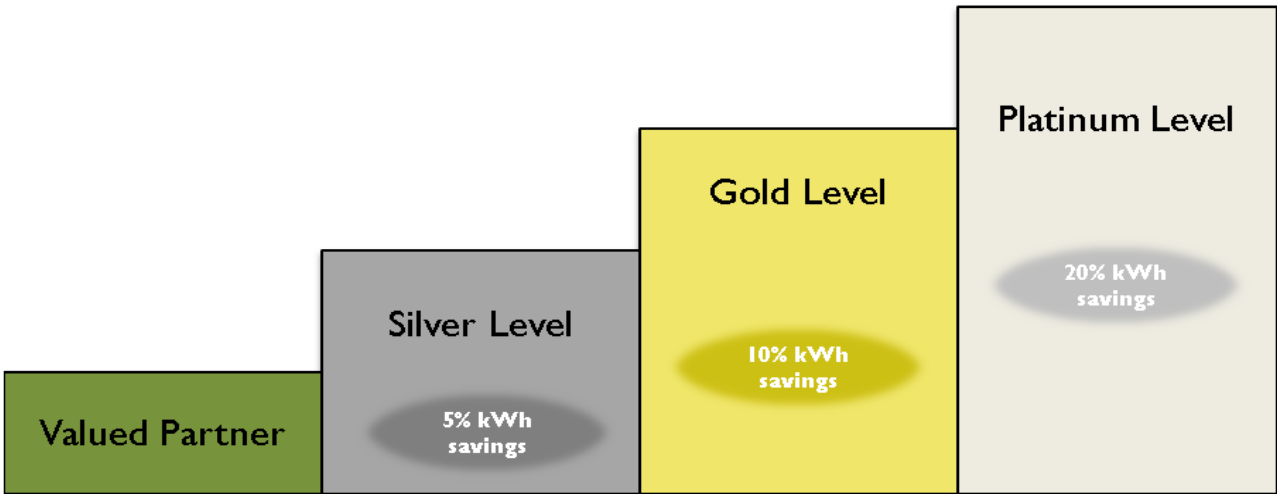
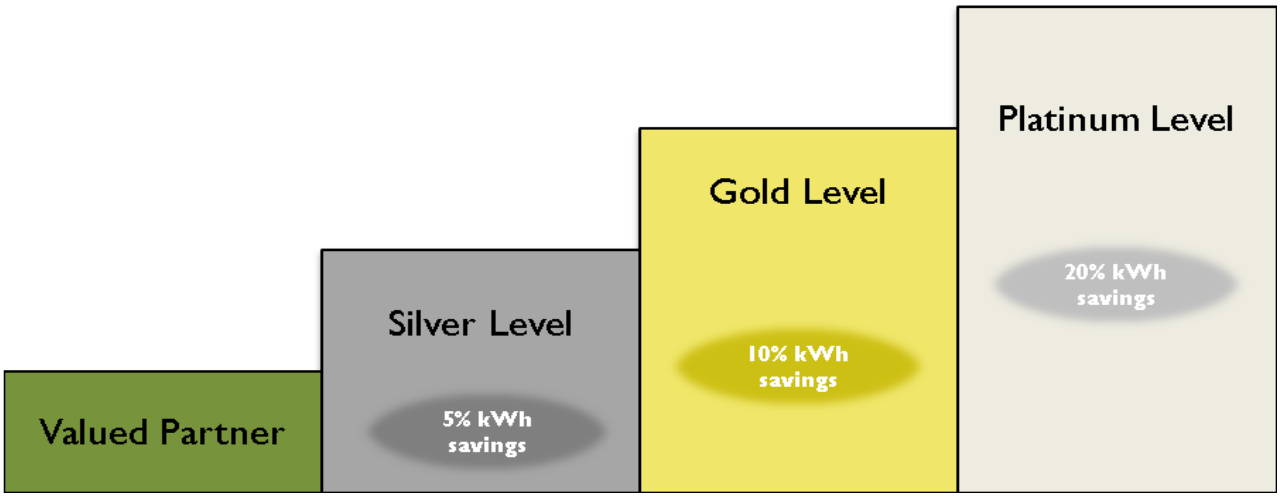
[1]While there were 31 cities in the SGVCOG at the time of this project, the cities of Azusa and Pasadena are not eligible to participate in SCE-funded programs as they are their own electricity providers. Additionally, the cities of Industry and Walnut have elected to not participate in this planning process.

Figure 3: Energy Leader Partnership Model



	Valued Partner Level enhanced incentives	Silver Level enhanced incentives	Gold Level enhanced incentives	Platinum Level enhanced incentives
Offerings	Technical support Strategic Plan support Co-branded marketing and outreach support	Technical support Strategic Plan support Co-branded marketing and outreach support	Technical support Strategic Plan support Co-branded marketing and outreach support	Technical support Strategic Plan support Co-branded marketing and outreach support Incentives for customized city/community offerings
Energy Efficiency Criteria	Basic EE Criteria: Commitment to Long Term Energy Efficiency Leadership	Basic EE Criteria Plus: City initiative Energy Action Plan Target at least 25% of city facilities to complete specified EE upgrades Target 5% kWh reduction for city facilities Co-sponsor marketing and outreach to the community on EE programs	Basic EE Criteria Plus: City initiative Energy Action Plan Target at least 50% of city facilities to complete specified EE upgrades Target 10% kWh reduction for city facilities Co-sponsor marketing and outreach to the community on EE programs	Basic EE Criteria Plus: City implements Energy Action Plan (policies, ordinances, and procedures) Target 100% of city facilities to complete specified EE upgrades Target 20% kWh reduction for city facilities Co-sponsor marketing and outreach to the community on EE programs



	Valued Partner	Silver Level	Gold Level	Platinum Level
Demand Response Criteria	Basic DR Criteria: Enroll in California's Statewide Flex Alert and implement an internal educational campaign	Basic DR Criteria Plus: At least one (1) eligible facility to participate in one (1) SCE Demand Response program At least one (1) eligible facility to develop a Demand Reduction Action Plan to be followed during a Flex Alert event Distribute Energy Solutions brochure to partner employees Complete an integrated Demand Side Management (iDSM) audit at all eligible facilities	Basic DR Criteria Plus: Have at least 25% of eligible facilities participate in an SCE Demand Response program Conduct co-branded marketing and outreach to residential customers on SCE's Demand Response (DR) programs At least one (1) eligible facility to implement a DR measure recommended from the iDSM audit	Basic DR Criteria Plus: At least one (1) eligible facility to participate in one (1) SCE Demand Response program Have at least 50% of eligible facilities participate in an SCE Demand Response program and develop a Demand Reduction Action Plan for the participating facilities Organize a local outreach event during the spring/summer season to promote Demand Response/iDSM

Source: SCE 2012

Role of the EAP

The role of this EAP is to serve as a strategic plan to achieve electricity efficiency in the community. This is a unique plan that identifies the City's role in reducing electricity use, both as a steward of the community and as a leader through its own operations. Strategies in the EAP will shape the City's planning framework, prioritize ongoing outreach responsibilities, and guide government operations.

The City will use the EAP as a tool to facilitate electricity efficiency while achieving other local economic and planning objectives, refining the EAP as programs are implemented and tested over time. Strategies in this EAP will be an integral part of resource management, planning, and development in the community. The EAP is an analytical link for the City between electricity reduction targets, local development, and state and regional electricity planning efforts.

Assembly Bill (AB) 32

Establishes a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of GHG for California.

The EAP provides the City with the added benefit of a foundation to assess local contributions to and impacts of climate change. While the primary focus of this EAP is electricity efficiency, the GHG emissions inventory in this plan also provides the City with an understanding of the local equivalent of the State-recommended GHG emissions reduction target to achieve 1990 GHG emissions levels by 2020. The local responsibility was identified in the Assembly Bill (AB) 32 Scoping Plan, which clarified that the 1990 target is equivalent to a 15% reduction below 2006 baseline emissions by 2020. The California Natural Resources Agency has also directed local governments to assess GHG emissions through the California Environmental Quality Act review process. The EAP also allows the City to better understand the GHG mitigation potential of the strategies outlined in this plan.

Based on the funding opportunity provided through the CEESP, the EAP's primary focus is electricity efficiency. While this EAP presents a comprehensive GHG emissions inventory and forecast, unlike more comprehensive climate action plans or GHG reduction strategies, mitigation strategies in the EAP focus only on electricity efficiency. Nonetheless, this plan lays out the City's role in achieving State-recommended GHG reduction targets.

CITY PROFILE

SETTING

The City of Claremont is located on the eastern border of Los Angeles County, nestled at the base of the San Gabriel Mountains. Home to reputable higher learning institutions, a traditional, tree-lined downtown, and well-kept historic buildings, Claremont has been rated one of America's best places to live. Bordered by the cities of La Verne to its west, Pomona to its south, and Upland to its east, the community is abutted by open space to its north. The city has a diverse residential community as well as thriving commercial centers in a village setting. The city covers approximately 14 square miles and was home to just under 35,000 people in 2010. Interstates 10 and 210 pass through Claremont, and the city is served by the Metrolink commuter train.

HISTORY

Part of the original Spanish mission territories, Claremont was a piece of the Rancho San Jose owned by Ricardo Vejar and Don Ygnacio Palomares. It first became a named community with the building of the Santa Fe Railroad in 1887. While the railroad developments did not last, Pomona College, founded one year later in 1888, established Claremont as a college town and has remained central to the community's identity ever since. In addition, central to the city's early development was the expansion of the local citrus industry, which boomed in the region until the 1930s. At its height, the industry supported four citrus packing houses, an ice house, and a pre-cooling plant in Claremont. The City of Claremont was officially incorporated on October 3, 1907.

The influence of these early Spanish, college, and citrus forces can be seen in the community today. Remnants of vast citrus and oak groves remain within city neighborhoods and parks. The strong network of trees is complemented by an ongoing tradition of planting and fostering the urban forest. The city has been a winner of the National Arbor Day Association's Tree City Award for 28 consecutive years. Historic buildings of these early periods also remain, with examples from multiple architectural periods, particularly Victorian, neo-Classical Revival, Craftsman, and Spanish Colonial Revival.

CLAREMONT TODAY

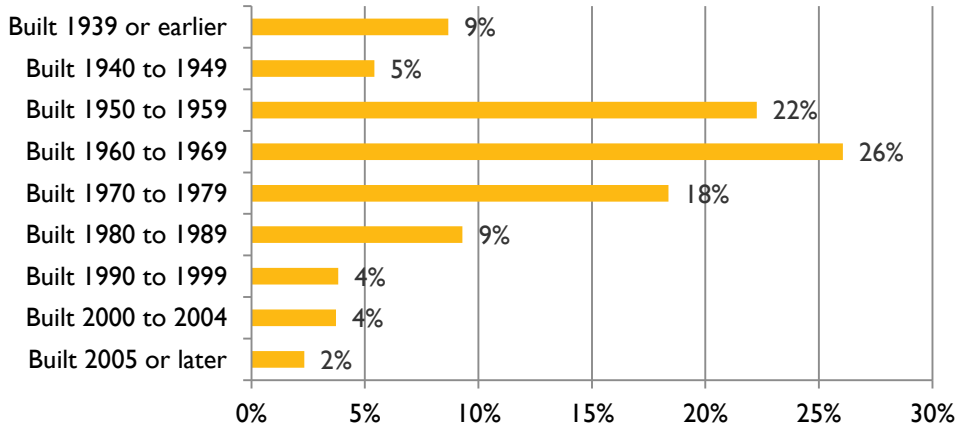
With a strong commitment to preservation and community vitality, Claremont maintains a mix of residential, commercial, and public land uses. Claremont has retained one of the region's few intact true downtowns. Much of the

city's commercial activity revolves around "The Village," a collection of street-front small stores, boutiques, art galleries, offices, and restaurants in an area adjacent to and west of the Claremont Colleges.

A significant portion of the city is also devoted to planned parks and open space. There are 23 city parks, including the 1,792-acre wilderness-designated Claremont Hills Wilderness Park.

Claremont remains predominantly residential in nature, with residential uses on approximately 60% of private land in the city. The City has planned for maintaining distinctive neighborhoods and preserving historic character. Nearly 10% of Claremont's homes were built before 1939. A majority of homes were built during rapid population growth of the 1950s, 1960s, and 1970s (see **Figure 4)**, with many properties having historical significance.

Figure 4: Housing Units by Year Built, 2010



Source: US Census American Community Survey, 2006–2010, Table DP-04

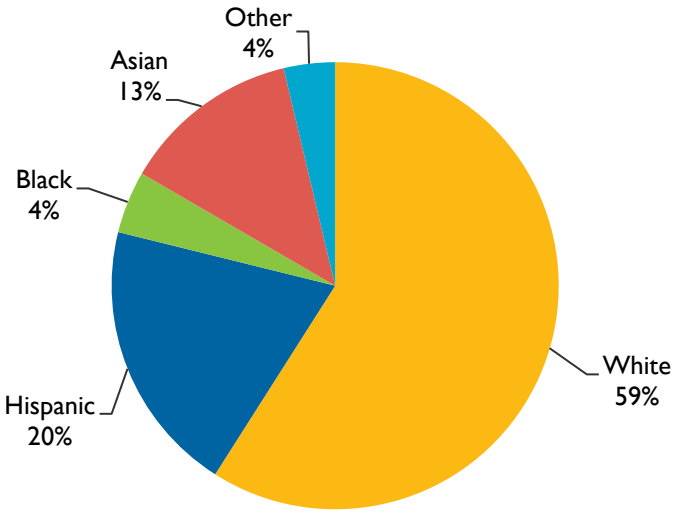
The Claremont Colleges also play a strong cultural and economic role in the city. The colleges consist of a consortium of five separate higher education institutions located on more than 560 acres of land, with 6,900 students and 3,600 faculty and staff. The consortium of college land uses generates an endless variety of intellectual, cultural, and social activities. As shown in **Table 1**, education is the largest industry in Claremont, followed by other professional and related industries.

Table 1: Employment by Industry in Claremont, 2010

Industry	Number	Percentage
Educational services, and health care and social assistance	6,760	44%
Professional, scientific, and management, and administrative and waste management services	1,540	10%
Retail trade	1,250	8%
Arts, entertainment, and recreation, and accommodation and food services	990	6%
Manufacturing	870	6%
Construction	680	4%
Other	3,350	22%

Corresponding to the dominance of educational industries, Claremont has a highly educated population. Nearly 45% of the population has a master's degree or higher level of educational attainment. The household income is also high, with an annual income of $105,760, approximately 34% higher than the countywide average of $79,030. Like many communities in the region, the city experienced moderate growth over the last decade and a moderate increase in the Hispanic population. As shown in **Figure 5**, 20% of Claremont's population is Hispanic and 59% is non-Hispanic white.

Figure 5: City of Claremont Racial and Ethnic Profile, 2010



PLANS FOR FUTURE DEVELOPMENT

The City's primary commercial district, The Village, recently finished construction of a planned expansion which includes a new mixed, transit-oriented development. With the construction taking place on the site of old citrus packing plants adjacent to the current Village commercial area, the City's intent is to bring medium-density residential and commercial uses to what was once an underutilized industrial area. The new development includes a cinema, a boutique hotel, retail space, and offices on what had been underutilized industrial space, just west of Indian Hill Boulevard. The Village expansion project also includes a 477-space parking structure and the adaptive reuse of a historic citrus packing plant on a portion of the site.

Claremont's Adopted Sustainability Targets

Reduce electricity energy consumption community-wide to 20% of 2003 levels by 2015.

Reduce water consumption citywide 20% by 2012 and 40% by 2017.

Divert 70% of solid waste from landfills by 2015.

All new construction should be designed, constructed, and operated to LEED Silver standards.

CLAREMONT'S SUSTAINABILITY EFFORTS

Strongly committed to sustainability, the City of Claremont has adopted sustainability as the primary guiding principle of its General Plan. In support of a community-wide emphasis on sustainability, the City developed a comprehensive Sustainable City Plan. Through these early efforts, Claremont has embarked on a range of projects and programs to achieve aggressive energy, waste, and water consumption reduction targets.

The City's sustainability programs cover a broad range of activities, including development of a bicycle priority zone, use of water-wise vegetation along road medians, and hosting educational programs on climate-friendly purchasing, mulching, and composting services.

City staff also recently completed energy efficiency improvements at City facilities, upgrading the City's computer network to virtual servers and installing cubicle occupancy sensors. Together with previous energy efficiency efforts, the City has reduced annual energy bills by approximately $50,000 annually.

Residential Efficiency Upgrades

Claremont is a regional leader in energy efficiency and recently developed an innovative homeowner assistance program designed to encourage home energy retrofits. The Claremont Home Energy Retrofit Project, or CHERP, program is a unique local effort to help homeowners upgrade older homes with energy-saving measures such as insulation, HVAC optimization, lighting upgrades, and even solar panels. The City identified an initial goal of supporting retrofits in 130 Claremont homes through the program. With high participation rates, the City has surpassed this initial pilot study goal, achieving retrofits in 162 homes as of January 1, 2013. The City intends to ultimately retrofit 1,300 (10% of all homes) throughout the city through this program, which would result in savings of more than 2.3 million kilowatt-hours (kWh) a year. In support of this effort, the City developed a customized local outreach effort, including a program logo, lawn signs, and numerous local workshops and events. The City has also paid over $15,000 in incentives to program participants, in addition to over $132,000 paid by Los Angeles County. The City has estimated that the CHERP program has resulted in approximately $1.7 million invested in the local housing stock, $450,000 in total incentives for local homeowners (including additional incentives from SCE and Los Angeles County), and the creation of approximately 16 local jobs.

Showcasing community sustainability efforts through the CHERP program: In February 2012, the City organized a tour of the Shea home, a retrofitted home that saves 43% on energy use. The program has created approximately 16 local jobs and invested approximately $1.7 million in the local housing stock.

Green Efforts Recognition and Education

A key component of Claremont's community sustainability efforts is publicizing sustainable projects. The City tracks all private development that is constructed to LEED standards in the city, as well as the amount of solar photovoltaics (PV) installed. Since 2009, all new nonresidential construction with more than 20,000 square feet of habitable floor area was designed to meet LEED standards. The City currently has 16 buildings that are either LEED-certified or seeking LEED certification. In addition, over 200 homes in Claremont have installed solar PV panels, generating approximately 1,500,000 kWh of renewable electricity per year. These projects are frequently publicized through events, celebrations, and ongoing collaboration with the community. Claremont also produces an annual Sustainability Report Card. The succinct report informs the community about the City's progress toward meeting the goals and numeric targets contained in the Sustainable City Plan. In recognition of the City's efforts, the City is one of only four cities to achieve Silver status in the California Green Communities program, a program funded by SCE and corporate partners to recognize the efforts of local governments.

Municipal Projects

In conjunction with its community programs to save energy, the City is retrofitting many of its own facilities, including installation of solar panels at its City Yard. All new buildings constructed in the city are now required to be built at the LEED Silver level or higher. In 2012, the City commissioned an audit of municipal facilities. Through lighting, heating and

cooling, and pumping upgrades, the audit concludes the City could reduce electricity use by 36% with a payback of fewer than six years. The City is also in the process of converting its vehicle fleet to operate on compressed national gas.

The EAP Planning Process

The City of Claremont worked through a five-step planning process, as depicted in **Figure 6**, to develop the EAP. Following this five-step process allows the City to adequately identify, collect, and analyze the relevant energy and GHG data prior to developing and implementing strategies to improve energy efficiency and reduce GHG emissions.

Figure 6: EAP Planning Process

1. Getting Started	• Assemble key City staff members • Identify data needs and stakeholder groups
2. Collect and Assess Energy Use and GHG Emissions	• Request, collect, and analyze data following protocols • Forecast emissions and set reduction targets
3. Identify Goals and Strategies	• Results of inventory and forecast • Community values and goals
4. Develop Energy Action Plan	• Options to reduce energy use • Costs and benefits of each action
5. Adopt and Implement Plan	• Fund and implement actions • Review progress toward goals

The EAP's outreach process engaged City staff and stakeholders in the identification and refinement of electricity efficiency issues and strategies. The goal of the outreach process was to help City staff make better decisions and develop effective local strategies for electricity efficiency. City staff also facilitated public outreach at community events and stakeholder focus group meetings. The development process for the EAP relied on a multipronged outreach strategy involving City staff, Sustainability Committee members and guidance from a regional Project Steering Committee.

PROJECT STEERING COMMITTEE

Along with staff representing the 27 other San Gabriel Valley cities taking part in the regional EAP project, City staff participated in a regional Project Steering Committee (PSC). The purpose of the PSC was to confirm a regional approach to EAP development, guide the project, share best practices among jurisdictions, and support tailored, local EAPs. The PSC convened approximately once a month between June 2011 and September 2012. During PSC meetings, representatives from SGVCOG staff and the technical consultant project team facilitated PSC discussions and presentations to review options to achieve electricity efficiency.

PSC members regularly voted on topics through an instant polling tool, TurningPoint, to provide input on a variety of topics, including the regional framework, GHG data collection process, GHG scopes and sources, reduction policies and programs, and engagement options for the EAPs. The polling tool collected staff responses, which were used to inform the recommendations that the project team used to prepare this EAP. Other PSC topics included options to conduct public outreach and engage city staff. PSC members also presented case studies, sharing success stories and lessons learned from project implementation.

CITY SUSTAINABILITY COMMITTEE

The City of Claremont coordinates activities and targets established in this EAP and the General Plan through a Sustainability Committee and City Commission process. The Sustainability Committee is composed of a nine-member team appointed by the Claremont City Council and is responsible for ensuring the City's sustainability goals and targets for the community and municipal operations are met. In July 2012, the EAP project team met with the Sustainability Committee to discuss EAP development. The meeting was designed to further outreach efforts that can help the City educate the community about electricity use and efficiency opportunities and refine the best ways to meet established reduction targets. This effort represents a first step in the City's efforts to use the EAP as a tool to help the community continue implementing strategies to reduce electricity.

Claremont also has a local nonprofit—Sustainable Claremont—that partners with the City to implement sustainability efforts. With more than 100 members, Sustainable Claremont includes (1) a community-led task force composed of action groups that undertake projects in particular areas of sustainability; (2) three operating committees—outreach, finance, and special events; and (3) a Board of Directors made up of one representative from each of the groups and committees. Since 2008, Sustainable Claremont has worked to help execute many of the City's sustainability goals through education, advocacy, and projects.

CHAPTER 2

GHG INVENTORY AND FORECAST

This greenhouse gas emissions inventory and forecast (Inventory) provides updated calculations and detailed summary of community-wide and municipal GHG emissions. This information is used to create reduction strategies in the City of Claremont's Energy Action Plan (EAP).

CHAPTER 2

INVENTORY AND FORECAST PURPOSE

This greenhouse gas (GHG) emissions inventory and forecast (Inventory) provides a detailed summary of community-wide and municipal GHG emissions, electricity-specific GHG emissions, and electricity use. This information is used to create a benchmark for current climate action planning projects and create reduction targets for the community. The Inventory also provides a detailed summary of GHG emissions which can be used as a foundation for future climate action planning projects

Specifically, the GHG Inventory:

- Presents updated calculations of GHG emissions from community-wide and municipal activities in calendar year 2006.
- Provides a snapshot of total GHGs and electricity-specific emissions from community-wide and municipal activities in calendar year 2010.
- Provides an updated forecast of how community-wide total emissions and electricity-specific emissions will increase by 2020 if no behavioral or regulatory changes are made (known as a business-as-usual scenario).
- Adjusts the GHG forecasts to account for reduction efforts mandated by the State of California, such as new energy efficiency and vehicle standards.
- Provides City staff, decision-makers, and stakeholders with adequate information to direct development of this EAP and to establish GHG emissions reduction and energy efficiency targets.

DESCRIPTION OF RELEVANT EMISSIONS AND KEY CONCEPTS

The Inventory includes the major sources of GHGs caused by activities in the city. These sources are included based on a regionally consistent approach using statewide best practices and California Air Resources Board (CARB) recommendations. The Inventory analyzes GHG emissions from community and municipal sources as described in **Figure 7**. All activities were assessed for the baseline year of 2006 for purposes of consistency with the adopted General Plan and the City's previous GHG emissions inventory, which is discussed in further detail below.

Figure 7: Community and Municipal GHG Emission Sources, 2006

Community

Energy – Electricity and natural gas consumed by residents and businesses in the city.

Direct Access Electricity – Electricity purchased by commercial customers from energy service providers other than Southern California Edison.

Street and Traffic Lighting – Electricity used by street and traffic lights within the city but not owned by the City.

On-Road Transportation – Vehicle miles traveled (VMT) in, to, and from the city.

Waste – Methane emissions from waste (municipal solid waste), and green waste (alternative daily cover) sent to landfills and regional incinerators (also known as transformation facilities) from the city.

Water and Wastewater – Energy required to extract, filter, deliver, and treat the water used and wastewater disposed by the community.

Off-Road Equipment – Emissions from construction and lawn & garden equipment operated within the city.

Municipal

Buildings – Electricity and natural gas consumed by City buildings and facilities.

Off-Road Equipment – Fuel used for construction projects, landscaping, or other off-road purposes.

Fleet – Gasoline, diesel, and compressed natural gas (CNG) used by all City-owned vehicles.

Lighting – Electricity, paid for by the City, used by street and traffic lighting and outdoor lighting at parks and other facilities within city limits.

Employee Commute – Emissions from the vehicles City employees use to get to and from work.

Government-Generated Solid Waste – Indirect emissions from the waste disposed by employees and operations of the City.

RELATIONSHIP TO THE CITY'S PREVIOUS INVENTORY

This Inventory is an update of the City's existing GHG inventory completed in 2010 by CTG Energetics, Inc. In addition to providing new 2010 emissions data to compare with the 2006 baseline year, this Inventory provides expanded and more localized data to calculate emissions for several sectors from both community-wide and municipal activity in the baseline year of 2006. Sectors that were updated or expanded include transportation, electricity, direct access electricity, wastewater, and waste sectors of the community-wide inventory, and fleet, electricity, solid waste, and employee commute for the municipal operations inventory. Significant updates include:

- The use of local Southern California Edison (SCE) utility billing data in place of statewide estimates to calculate electricity and gas emissions.
- The utilization of an online survey of municipal employees in place of behavior assumptions to calculate commute related emissions.
- Vehicle miles traveled (VMT) analysis using the 2003 Southern California Association of Governments (SCAG) model with "through trips" removed.

The sector with the greatest baseline 2006 change in GHG emissions due to the revised methods was employee commute, which decreased 357% from 474 $MTCO_2e$ to 300 $MTCO_2e$. Municipal fleet also saw significant changes with a 22% drop in emissions. GHG emissions from community energy, municipal energy, and on-road transportation had increases in emissions ranging from 1% to 12%. In summary, inventory updates resulted in a 12% increase to the community-wide CTG inventory and a 19% decrease to the municipal inventory.

Refer to **Appendix A** for detailed activity data and emissions by sector and subsector as well as changes in emissions estimates for the baseline year of 2006 from the 2010 inventory. Refer to **Appendix B** for activity data sources and specific emissions factors for each subsector.

Community-Wide Inventory Summary

The City of Claremont emitted approximately 312,880 $MTCO_2e$ in the baseline year 2006. As shown in **Figure 8** and **Table 2**, the transportation sector was the largest contributor to emissions (52%), producing approximately 163,720 $MTCO_2e$ in 2006. Commercial and industrial energy use was the next largest sector with 63,580 $MTCO_2e$, or 20% of total emissions. Residential energy use followed closely with 59,550 $MTCO_2e$, contributing 19% of total emissions. The solid waste, street and traffic lighting, and water sectors each comprised 2% or less of the total emissions. Combined, these remaining sectors contributed 26,030 $MTCO_2e$. For a detailed description of activity data, such as the breakdown of residential electricity and natural gas uses, refer to **Appendix A**.

Figure 8: Community-Wide GHG Emissions by Sector, 2006

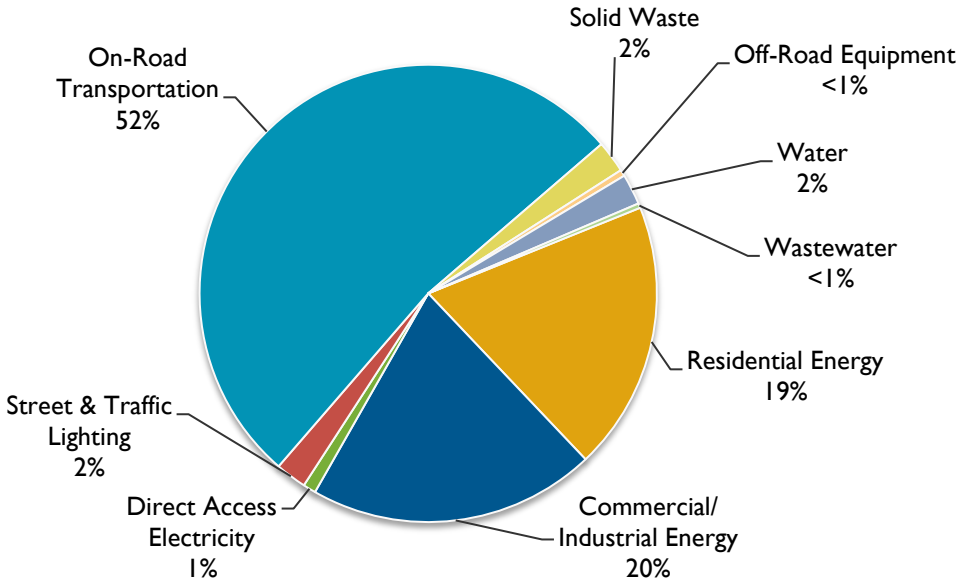


Table 2: Community-Wide GHG Emissions by Sector, 2006 ($MTCO_2e$)

Sector	$MTCO_2e$	Percentage of Total
Residential Energy	59,550	19%
Commercial/Industrial Energy	63,580	20%
Direct Access Electricity	2,840	1%
Street & Traffic Lighting	6,880	2%
On-Road Transportation	163,720	52%
Solid Waste	7,080	2%
Off-Road Equipment	1,430	<1%
Water	6,800	2%
Wastewater	1,000	<1%
Total	312,880	

2010 COMMUNITY EMISSIONS UPDATE

Activity data for 2010 was available for many community sectors, including energy, transportation, waste, off-road equipment, wastewater, and water. This information has been translated into GHG emissions for Claremont and all other participating cities and will serve as a common benchmark that will allow activities for accurate comparison between all cities in the San Gabriel Valley participating in the EAP process. This 2010 interim inventory will also help cities track GHG and energy reductions from programs implemented since the baseline year.

Table 3 summarizes activity data for 2010 and compares emissions from the baseline year of 2006 with 2010 emissions for the community of Claremont. Most sectors showed a decrease in emissions from 2006 to 2010. The only sectors that showed an increase include residential natural gas, commercial/industrial natural gas, and off-road construction equipment. Proxy data was used to estimate commercial/industrial natural gas for 2010, due to the unavailability of data. In total, 2010 emissions from the community are estimated at 301,740 $MTCO_2e$, a 4% decrease from baseline.

A few sectors, including direct access electricity, water, and community waste, decreased 10% or more in emissions over the four-year period. These emissions reductions are due to reductions in activity, the likely result of city conservation and waste diversion efforts. Direct access electricity use dropped 44% in $MTCO_2e$ from 2006 to 2010 for reasons which are still unknown.

Table 3: 2010 Electricity Use and 2006 GHG Emissions Comparison

Sector	2006 Activity Data	2010 Activity Data	Units	% Change	2006 $MTCO_2e$	2010 $MTCO_2e$	% Change
Residential Electricity	95,449,510	88,052,830	kWh	-8%	27,910	25,350	-9%
Residential Natural Gas	5,948,560	5,999,780	Therms	1%	31,640	31,920	1%
Commercial/Industrial Electricity	136,067,710	132,033,950	kWh	-3%	39,790	38,010	-4%
Commercial/Industrial Natural Gas	4,472,570	4,502,840	Therms	1%	23,790	23,950	1%
Direct Access Electricity	7,010,850	3,803,450	kWh	-46%	2,840	1,590	-44%
Street & Traffic Lighting	23,521,940	23,894,600	kWh	2%	6,880	6,880	0%
Transportation	307,655,310	311,659,770	VMT	1%	163,720	161,330	-1%
Waste – Community-Generated Waste	32,290	22,540	Tons of waste	-30%	5,940	4,190	-29%
Waste – Alternative Daily Cover	7,370	110	Tons of ADC	-99%	1,140	20	-98%
Waste – Transformed	10	0	Tons transformed	-100%	<10	0	-100%
Off-Road Equipment – Lawn and Garden	11,650	11,610	Households	0%	10	10	0%
Off-Road Equipment – Construction[1]	120	40	New households	-67%	1,420	1,450	2%
Water – Electricity for Transport Within City	7,940,610	6,558,290	kWh	-17%	2,320	1,890	-19%
Water – Electricity for Transport & Treatment Outside City	15,325,780	14,636,000	kWh	-5%	4,480	4,210	-6%
Wastewater – Indirect[2]	3,419,000	3,265,000	kWh	-5%	1,000	940	-6%
Total					**312,880**	**301,740**	**-4%**

1. The projected 67% drop in activity for off-road equipment may be inaccurate due to discrepancies between the model used to estimate off-road emissions, OFFROAD2007, and the available data used to relate countywide emissions to Claremont; OFFROAD2007 calculates construction emissions for all of Los Angeles County, and emissions in Claremont are assigned using the City's proportion of countywide construction permits issued. In the housing construction decline in recent years, fewer permits were issued than in the past throughout the county but OFFROAD2007 did not reflect the associated decrease in construction equipment emissions.

2. The calculated wastewater emissions are indirect emissions from electricity associated with wastewater treatment.

Municipal Inventory Summary

The municipal inventory includes GHG emissions from the operations and activities conducted by the City of Claremont in 2006. GHG emissions were calculated from activity data collected by the City. Operations and activities by the City in 2006 resulted in approximately 2,590 $MTCO_2e$**. Figure 9** and **Table 4** depict the contribution of each activity to total GHG emissions. Buildings and fleet produced the majority of the City's emissions, with building energy use producing 870 $MTCO_2e$ and fleet fuel consumption resulting in 1,020 $MTCO_2e$. Public lighting made up 15% (390 $MTCO_2e$) and employee commute comprised a 12% (300 $MTCO_2e$) share of total municipal emissions. Government-generated solid waste emitted less than 1% of total emissions.

Figure 9: Municipal GHG Emissions by Sector, 2006

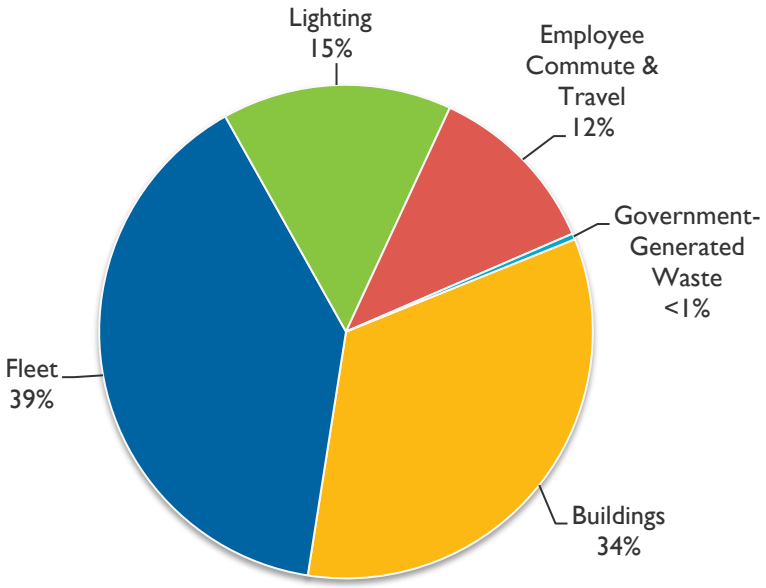


Table 4: Municipal GHG Emissions by Sector, 2006

Sector	$MTCO_2e$	Percentage
Buildings	870	34%
Fleet	1,020	39%
Lighting	390	15%
Employee Commute	300	12%
Government-Generated Solid Waste	10	<1%
Total	2,590	100%

2010 MUNICIPAL EMISSIONS UPDATE

As with the community data, municipal activity data was available for 2010 for the following sectors: buildings and facilities, lighting, and employee commute. Baseline emissions from off-road equipment, fleet, and government-generated solid waste were used as proxies to estimate 2010 data. This information, shown in **Table 5**, has been used to create a snapshot of 2010 municipal GHG emissions. Emissions from City government operations in 2010 were estimated at 2,870 $MTCO_2e$, an 11% increase from baseline.

Table 5: Comparison of Municipal GHG Emissions, 2006–2010

Sector	Subsector	2006 Activity Data	2010 Activity Data		% Change	2006 $MTCO_2e$	2010 $MTCO_2e$	% Change
Buildings	Electricity	2,251,510	2,181,560	kWh	-3%	660	630	-5%
	Natural Gas	39,510	35,650	Therms	-10%	210	190	-10%
Fleet	Gasoline	46,140	46,140	Gallons	0%	430	430	0%
	Diesel	31,400	31,400	Gallons	0%	340	340	0%
	CNG	47,580	111,030	Therms	133%	250	590	136%
Lighting	Streetlights	562,310	652,620	kWh	16%	160	190	19%
	Traffic Lights	84,590	127,860	kWh	51%	20	40	100%
	SCE-Owned Streetlights	489,330	495,440	kWh	1%	140	140	0%
	Other Public Lighting	235,630	160,410	kWh	-32%	70	50	-29%
Employee Commute		844,740	760,030	VMT	-10%	300	260	-13%
Government-Generated Solid Waste	Tons Disposed	50	50	Tons	0%	10	10	0%
Total						2,590	2,870	11%

BUSINESS-AS-USUAL GHG EMISSIONS FORECAST

COMMUNITY BUSINESS-AS-USUAL (BAU) INDICATORS

Table 6 lists the various growth indicators and sources used in the forecasting of Claremont's community-wide emissions. For a detailed explanation of indicator methods for all sectors, see **Appendix A**. Future energy use (including electricity) was forecast by assuming that the energy consumption per household and per job would stay roughly the same over time. For residential energy use, household growth rates are calculated and multiplied by the per-household energy use rate. Similarly, for commercial and industrial energy use, emissions are assumed to grow with the number of jobs.

Table 6: Business-as-Usual Forecast Indicators

Growth Indicator	Emissions Sector	2006	2010	2020
Jobs	Commercial and Industrial Energy	18,470	18,300	19,400
Service Population (Residents + Jobs)	Solid Waste, Water, Wastewater[1]	55,040	53,230	55,500
Households	Residential Energy, Off-Road	11,650	11,610	12,100
Annual VMT	On-Road Transportation	307,655,310	311,659,840	321,900,600

1. The calculated wastewater emissions are indirect emissions from electricity associated with wastewater treatment.

COMMUNITY BUSINESS-AS-USUAL FORECAST

Table 7 summarizes the growth forecast of GHG emissions by activity sector without any actions or policies in place to reduce GHG emissions. Under the BAU growth scenario, baseline emissions are estimated to grow by 4% in 2020 to 325,400 $MTCO_2e$.

Table 7: Business-as-Usual Forecast, 2006–2020 ($MTCO_2e$)

Sector	2006	2010	2020	Percentage Change 2006–2020
Residential Energy	59,550	57,270	61,850	4%
Commercial/Industrial Energy	63,580	61,960	66,780	5%
Direct Access Electricity	2,840	1,590	2,980	5%
Street and Traffic Lighting	6,880	6,880	6,880	0%
On-Road Transportation	163,720	161,330	171,300	5%
Solid Waste	7,080	4,210	7,140	1%
Off-Road Equipment[1]	1,430	1,460	600	-58%

Sector	2006	2010	2020	Percentage Change 2006–2020
Water	6,800	6,100	6,860	1%
Wastewater [2]	1,000	940	1,010	1%
Total	312,880	301,740	325,400	4%

1. The projected 58% drop in activity for off-road equipment may be inaccurate due to a shortfall in the model used to estimate off-road emissions, OFFROAD2007, and the methods used to relate countywide emissions to Claremont; OFFROAD2007 does not account for decreases in post-2007 construction decreases due to economic conditions, which can in turn produce a misleading large decrease in emissions associated with off-road equipment.

2. The calculated wastewater emissions are indirect emissions from electricity associated with wastewater treatment.

MUNICIPAL BUSINESS-AS-USUAL FORECAST

The City of Claremont's municipal forecast assumes a no-growth scenario for municipal operations based on data received for 2006 and 2010. As shown in **Table 8**, municipal operations grew by 11% between 2006 and 2010 but are not expected to experience further growth between 2010 and 2020.

Table 8: Municipal Business-as-Usual Forecast, 2006–2020 ($MTCO_2e$)

Sector	2006	2010	2020	Percentage Change 2006–2020
Buildings	870	820	820	-6%
Fleet	1,020	1,360	1,360	33%
Lighting	390	420	420	8%
Employee Commute	300	260	260	-13%
Government-Generated Solid Waste	10	10	10	0%
Total	2,590	2,870	2,870	11%

STATE ADJUSTMENTS TO BUSINESS-AS-USUAL (ABAU) FORECAST

STATE REDUCTIONS

The State has been a proactive force in reducing GHG emissions. Regulations affecting vehicle standards, building standards, and the renewable energy content of electricity will reduce GHG levels in the city. The state actions listed below are incorporated into the BAU forecast to create a more realistic estimate of the City's future emissions. For a detailed description of these actions, see **Appendix A**.

- Clean Car Fuel Standard (Assembly Bill (AB) 1493 – Pavley). Requires carmakers to reduce GHG emissions from new passenger cars and light trucks beginning in 2011. CARB anticipates that the Pavley standards will reduce GHG emissions from California passenger vehicles by about 22% in 2012 and by about 30% in 2016.
- Renewables Portfolio Standard (RPS). Requires utility providers to increase the portion of energy that comes from renewable sources to 20% by 2010 and to 33% by 2020. Due to potential implementation issues, the ABAU forecast assumes that energy providers will achieve a minimum 28% renewable portfolio by 2020.
- California Building Code (Title 24, CALGreen). Requires each new building constructed in California to incorporate direct electricity, natural gas, and water savings.
- California Solar Initiative (CSI). A state program that provides cash rebates for the installation of an electric solar panel system.

COMMUNITY ABAU FORECAST

All state programs highlighted above are included in the community-wide ABAU forecast. As shown in **Table 9**, these state reduction efforts are anticipated to reduce BAU emissions by 39,170 $MTCO_2e$ in 2020. The majority of these reductions are from the Pavley standards and the RPS. In comparison to the BAU scenario, 2020 emissions with state reduction measures are 9% below 2006 baseline levels rather than 4% above (see **Table 10**).

Table 9: Impact of State Reductions on Community Emissions, 2020 ($MTCO_2e$)

State Reductions Summary	2020
Pavley I Reductions	-26,440
RPS Reductions	-10,530
CALGreen Reductions	-1,270
CSI Reductions	-930
Total State Reductions	-39,170

Table 10: Community Adjusted BAU Forecast, 2006–2020 ($MTCO_2e$)

State Reductions Summary	2006	2010	2020
Business-as-Usual Forecast	312,880	301,740	325,400
Total State Reductions	–	–	- 39,170
Adjusted Growth Projection	312,880	301,740	286,230
Adjusted Change from 2006	–	-4%	-9%

MUNICIPAL ABAU FORECAST

Only certain state reduction programs affect the municipal BAU forecast. These include the RPS, the Pavley standards, and the Title 24 efficiency standards. The primary reductions will occur from the Pavley standards and the RPS (see **Table 11**). The CSI is not applicable to municipalities and is not quantified. **Table 12** shows the effect of the included state reduction efforts on BAU emissions. Emissions in 2020 are expected to be reduced by 280 $MTCO_2e$. No

reductions came from the Title 24 reductions because the City does not have any set plans to expand buildings in the future. 2020 ABAU emissions are equal to 2006 baseline emissions and are 10% below 2010 emissions.

Table 11: Impact of State Reductions on Municipal Emissions, 2020 ($MTCO_2e$)

State Reductions Summary	2020
Pavley I Reductions	160
RPS Reductions	120
Title 24/CALGreen Reductions	–
Total State Reductions	-280

Table 12: Municipal Adjusted BAU Forecast, 2006–2020 ($MTCO_2e$)

State Reductions Summary	2006	2010	2020
BAU Forecast	2,590	2,870	2,870
Total State Reductions	–	–	280
ABAU Forecast	2,590	2,870	2,590
Adjusted Percentage Change from 2006	–	11%	0%

Reduction Targets

As previously mentioned, this EAP can serve as the foundation for future climate action planning projects. Community-wide GHG reduction targets have been included as an informational item. While this overall GHG emissions reduction target was consulted when establishing community-wide and municipal electricity reduction targets, the two are not linked directly. For electricity-specific community-wide reduction goals, see **Chapter 4**.

STATE-RECOMMENDED 2020 REDUCTION TARGETS

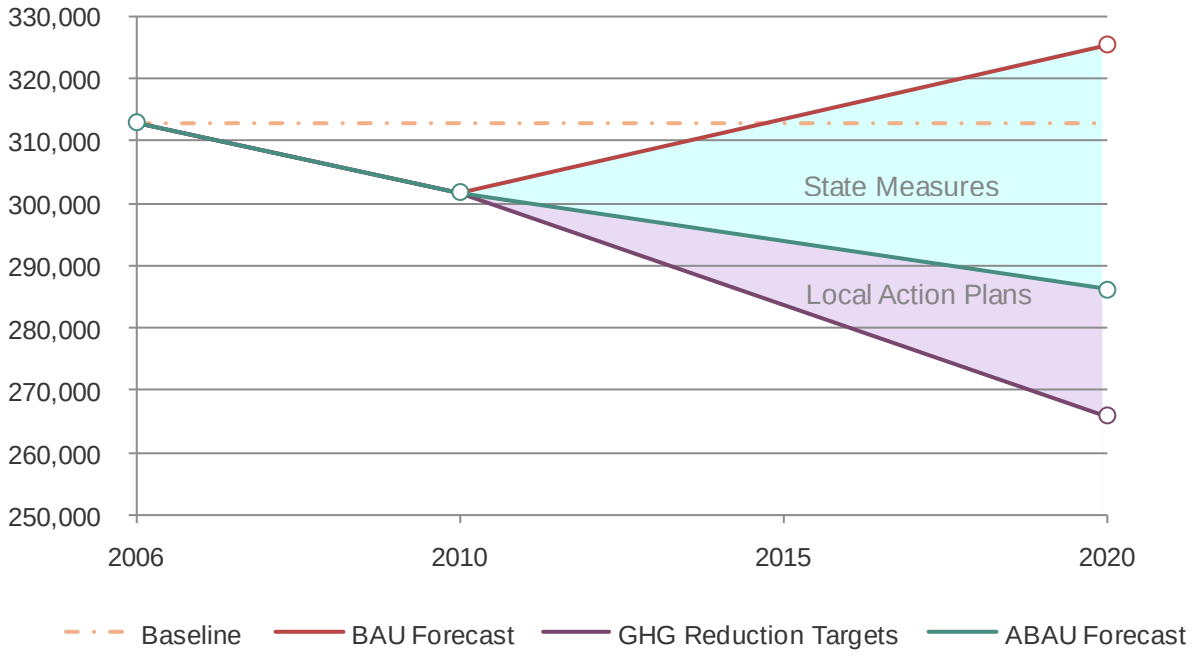
AB 32 recommends that local governments adopt a GHG reduction target of 15% below 2006 baseline levels by 2020. The State has not adopted GHG reduction targets beyond 2020; however, in 2005, then-Governor Schwarzenegger signed Executive Order S-3-05, which created a goal to reduce GHG emissions to 1990 levels by 2020 and to 80% below 1990 levels by 2050.

As shown in **Table 13** and **Figure 10**, the City would need to facilitate a reduction in community emissions of 20,300 $MTCO_2e$ to meet the State-recommended AB 32 Scoping Plan goal of 15% below baseline levels by 2020.

Table 13: State-Recommended 2020 Reduction Targets ($MTCO_2e$)

	2020
AB 32 Target % Reduction from 2006 Baseline	15%
Emissions Goal	265,950
Adjusted BAU Forecast with State Reductions	286,230
Local Reduction Needed from Adjusted BAU	20,280

Figure 10: Comparison of BAU Forecast and Reduction Target, 2006–2020



CHAPTER 3

ELECTRICITY PROFILE

Claremont is a well-established community with a centralized downtown, distinct residential neighborhoods, and abundant planned open space. The city consists primarily of single-family housing, but also has significant portions of land for multi-family housing as well as commercial uses. The community's traditional downtown, "The Village," serves as the cultural core of the community, maintaining a number of historic buildings and vibrant retail uses. Claremont is committed to sustainable practices and development.

Introduction to Electricity & Efficiency

Electricity used in the City of Claremont's homes and businesses is primarily provided by Southern California Edison (SCE). SCE generates electricity from a mix of nonrenewable sources, such as natural gas and coal, and renewable sources, such as biomass, geothermal, hydroelectric, solar, and wind. SCE operates the Big Creek Hydroelectric Plant and San Onofre Nuclear Generating Station in the region.

The amount of electricity used to power homes and businesses determines how much power SCE needs to generate and the quantity of greenhouse gases (GHGs) emitted. If the energy needed for daily activities is decreased, reductions can be achieved in the amount of electricity SCE needs to generate and transmit. In addition, the GHG emissions associated with electricity generation would decrease. The most common uses of electricity are for lighting and heating/cooling buildings, for powering appliances such as refrigerators, computers, and washing machines, and for pumping water around the city and into homes or to treatment plants. An example of a home with energy-efficient features is shown in **Figure 11.**

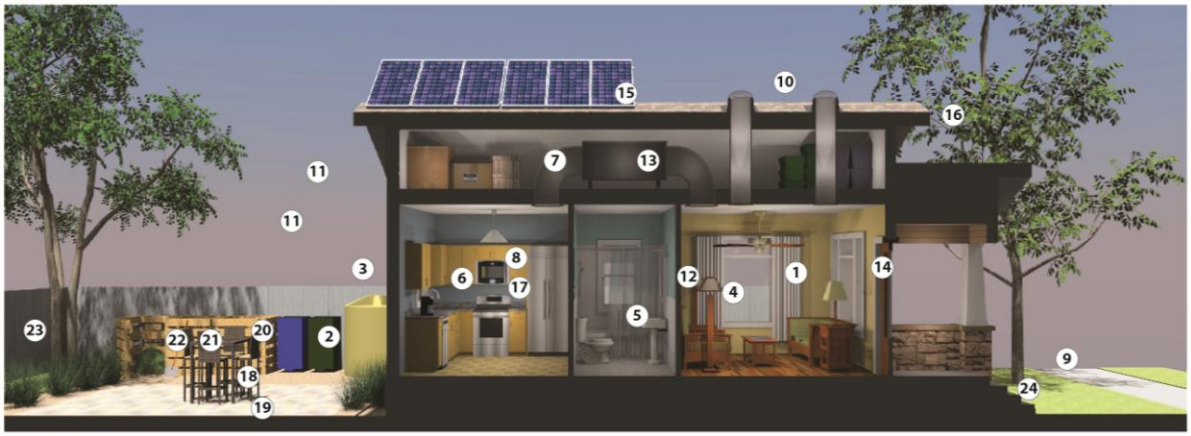
Figure 11: Efficient Home Features

ACTIVITIES YOU CAN DO TO REDUCE ENERGY USE

Daily Actions for Energy Conservation
1. Turn off lights when not in use
2. Unplug appliances/electronics
3. Reduce use of electronic appliances
4. Use blinds, internal or external shades, or curtains to retain or repel heat

Energy Improvements
5. Replace older light bulbs with energy-efficient bulbs
6. Replace appliances/electronics with energy-efficient models
7. Replace heating/ventilation/air conditioning unit and/or water heater with energy-efficient model
8. Install shower controls to select and change water temperature
9. Use variable speed pool pump
10. Install skylights and/or light shelves to maximize natural lighting

Whole House/Office Strategies
11. Insulate attics, walls, and/or hot water pipes
12. Upgrade to more highly insulating, heat-reflective windows
13. Seal air and duct leaks
14. Install motion-sensor lighting to light areas only when in use
15. Use cool roof materials or heat-reflective paints to reduce building heat
16. Plant trees and vegetation to cool the building



EVEN MORE WAYS YOU CAN GREEN YOUR HOME OR BUSINESS

Water Sense
17. Use low-flow showerheads and toilets
18. Landscape with drought-tolerant plants
19. Use drip irrigation or other water-conserving landscape irrigation systems
20. Capture rainwater and store on-site to water landscaped areas

Waste Reduction
21. Minimize waste sent to the landfill
22. Recycle/reuse materials
23. Compost organic waste
24. Use your own home-generated compost in the yard

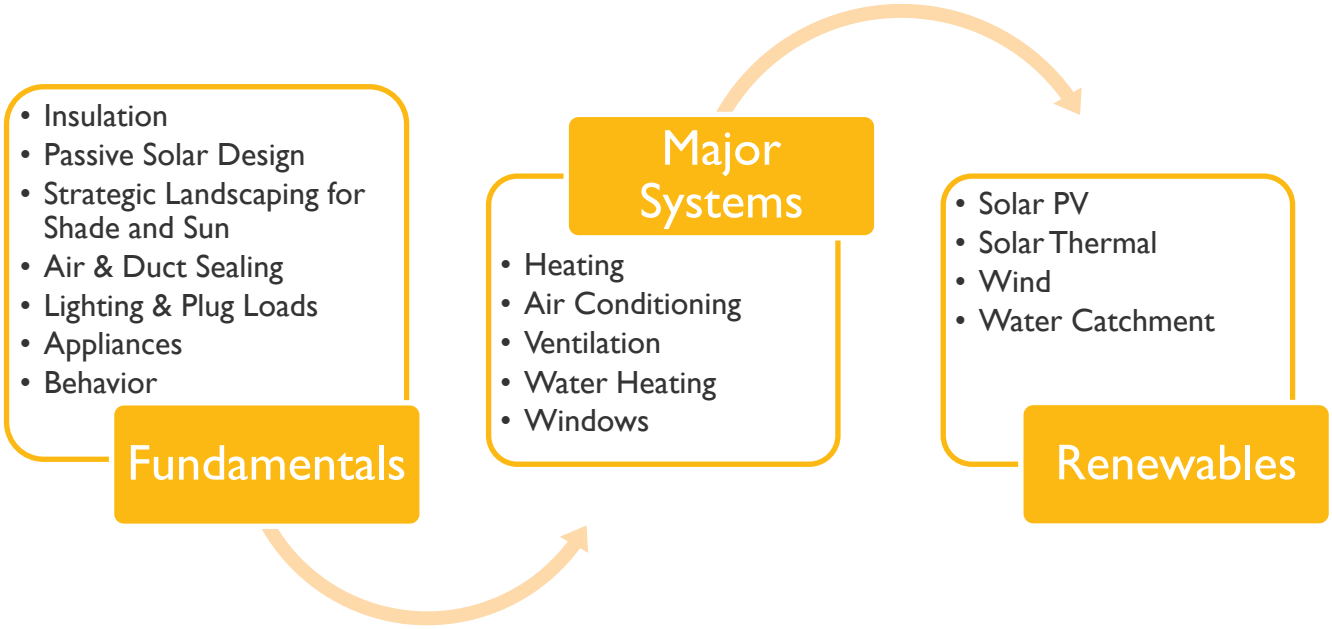
Source: PMC 2012

The Electricity Reduction Loading Order

GHGs from electricity use can be reduced, primarily through increasing conservation (i.e., avoiding using electricity) and improving efficiency (i.e., using less electricity for the same activity) when conservation cannot be realized. Common conservation practices include unplugging appliances and electronics when not in use and turning off lights during the day or when the room is empty. Increasing energy efficiency means replacing incandescent light bulbs with compact fluorescent lights or light-emitting diode (LED) lighting and inefficient or older models of appliances and electronics with new, preferably Energy Star (or other efficiency label) models in order to use less energy when it is necessary. Along with replacing older technologies with newer, more efficient ones, re-evaluating system sizes to meet home needs, such as downsizing a cooling unit, can provide dramatic energy efficiency savings. Using alternative technologies such as small renewable solar panels and hydronic home heating systems instead of conventional furnaces can also reduce demand from SCE for daily electricity use. Reductions in electricity used for water pumping, including electricity used both to deliver water to Southern California and then distribute it within the community, can be achieved by using less water for irrigation and other household uses. More efficient toilets, showerheads, faucets, and drip irrigation systems can help conserve water. These are just some examples of energy efficiency and conservation. This Energy Action Plan (EAP) outlines programs and policies to support efficiency and conservation of electricity use in the community.

When completing energy efficiency retrofits to buildings, there is a loading order that should be followed to maximize energy savings while minimizing added costs. **Figure 12** depicts the recommended loading order for undertaking energy efficiency projects and retrofits.

Figure 12: Retrofitting Loading Order



Community Electricity Demand

With a strong commitment to preservation and community vitality, Claremont maintains a balance of residential, commercial, and public land uses (see **Table 14**).

Table 14: Claremont Land Uses, 2010

Land Use	Acres
Wilderness	1,863
Residential 6 (low density)	1817
Hillside	963
Park/conservation	923
Institutional	732
Hillside residential overlay	665
Residential 2 (very low density)	640
Commercial/business park	489
Public	338
Residential 15 (low to medium density)	250
Business park	87
Mixed-use	74
Office	49
Claremont village	48
Commercial	46
Freeway commercial	46
Residential 22 (multi-family)	40
Commercial recreation	17
Total	9,087

Claremont has significant residential land use in a variety of forms, using about 60% of private land in the city. The City has planned for keeping distinctive neighborhoods and a variety of housing options. The majority of homes are single-family detached houses, with an additional 9% attached, and 7% are large apartments or other large-scale multi-unit residences. More than 30% of housing units are rented, not surprising in a college town, though significant for energy efficiency planning. The median home size is about average for the region at 1,880 square feet.

Claremont has a number of unique historic homes. Nearly 10% of Claremont's homes were built before 1939, and many have historic significance. However, the majority of homes in the city were built during rapid population growth of the 1950s, 1960s, and 1970s. Pre-1978 residences offer the greatest opportunity for significant energy conservation and efficiency improvements, such as appliance replacement and insulation retrofits. With strong opportunity for energy savings in this sector, many of Claremont's EAP policies are focused on improving the energy efficiency of the residential built environment.

Although residential uses comprise the majority of the land in Claremont, a significant part of the city, about 10% of remaining private land, is commercial or mixed-use. Vacant land is limited, with significant potential for infill development and adaptive reuse around the downtown. Because of the Claremont Colleges, about 16% of the city's private land is devoted to institutional purposes, with much of the surrounding area's activities driven by the colleges. Additionally, the city has 23 planned parks, including the 1,893-acre wilderness-designated Claremont Hill Wilderness Park. Consequently, nearly half of the land in Claremont (47%) is dedicated open space, maintained and unmaintained.

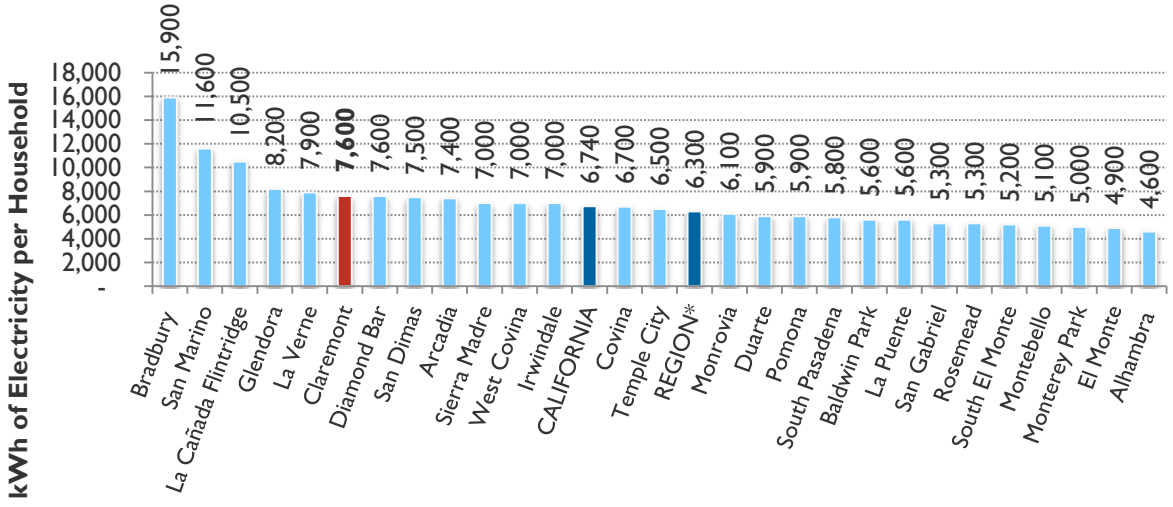
COMPARISON TO REGIONAL AND STATEWIDE AVERAGE

Residential Comparisons

To compare local trends to regional trends and other cities within the San Gabriel Valley, 2010 electricity data was assessed for all cities participating in the EAP process, regardless of each city's inventory baseline year.

Comparison of 2010 community-wide electricity use allowed for a common regional benchmark. It is important to understand how Claremont's electricity use compares to regional and statewide electricity use. As shown in **Figure 13**, each household in Claremont used an average of 7,600 kilowatt-hours (kWh) of electricity in 2010. This usage is above the California household average of 6,740 kWh and well above the San Gabriel Valley regional average of 6,300 kWh. Claremont is the sixth highest consumer, in terms of household electricity use, of the 27 participating communities. Note that this average includes electricity use for all single-family residential units. Excluded from this comparison are larger group complexes, which include multi-family complexes such as large apartment buildings, student dormitories, and group-living and retirement communities. SCE bills such group-living quarters as nonresidential customers through a separate rate category.

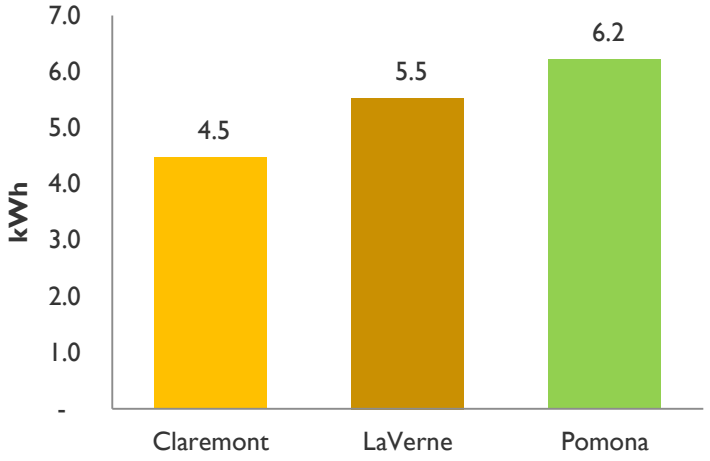
Figure 13: Annual Electricity Use per Household, 2010 (kWh)



** Region electricity trends represent the San Gabriel Valley average for all 27 cities participating in the EAP project.*

To understand how Claremont residences use energy and methods to best provide savings, it is useful to compare Claremont home energy use to use in similar communities and the broader region. Such an approach is helpful in highlighting the unique considerations of Claremont's residential sector, such as its large number of historic homes and larger-than-average single-family home sizes. Due to similarities in the type of community and housing stock, the cities of LaVerne and Pomona were selected for comparison to Claremont, as shown in **Figure 14**. While Claremont's per household kWh is higher than the regional average, a square footage comparison shows Claremont's average residential kWh/residential square foot is lower than both LaVerne and Pomona. A lower kWh per square foot energy load indicates that Claremont's larger homes are functioning at higher levels of energy efficiency than comparable communities.

Figure 14: Average Residential Electricity Use per Square Foot, 2010

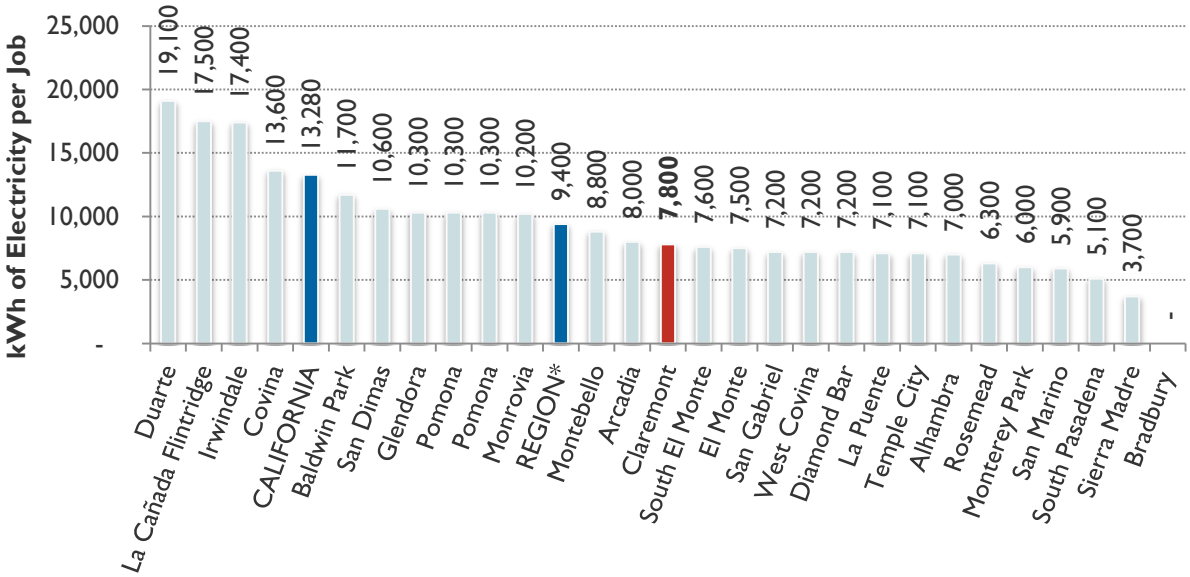


** Presents total residential electricity use in comparison to residential square footage identified in parcel data from the Los Angeles County Tax Assessor's Office.*

Nonresidential Comparison

Claremont had below-average energy use for nonresidential electricity consumption, with approximately 7,800 kWh per job, as shown in **Figure 15**. This likely reflects the nature of commercial buildings in Claremont, which tend to be small in scale and compact within the historic Village, or less energy-intense office-oriented uses.

Figure 15: Annual Electricity Use per Job, 2010 (kWh)



** Region electricity trends represent the San Gabriel Valley average for all 27 cities participating in the EAP project.*

MUNICIPAL ELECTRICITY PROFILE

2006 ELECTRICITY USAGE

In 2006, the City of Claremont used approximately 3,623,370 kWh in its municipal operations. This electricity use falls into two categories: buildings and facilities and street and traffic lighting. Within each category are different rate groups, discussed in greater detail below and illustrated in **Table 15**.

The buildings and facilities sector contains the general service non-demand rated (GS-1), general service demand rated (GS-2), and domestic rate groups. The GS-1 group contains small and medium buildings and other low-level electricity users. The GS-2 group is made up of larger buildings and facilities. The GS-2 rate group is demand rated, meaning the more electricity these intensive facilities use, the greater the cost per kWh. The domestic rate group is for residential buildings. Overall, the buildings and facilities sector used 2,251,510 kWh in 2006.

Within the public lighting sector are the outdoor area lighting (AL-2 and OL-1), SCE-owned streetlights (LS-1), City-owned streetlights (LS-2 and LS-3), and traffic signals and controllers (TC-1) rate groups. Unmetered street lighting was the largest user in this sector, accounting for 41% of all lighting electricity. Overall, City lighting totaled 1,371,860 kWh in 2006.

Table 15: Claremont Municipal Electricity Use by Rate Class, 2006

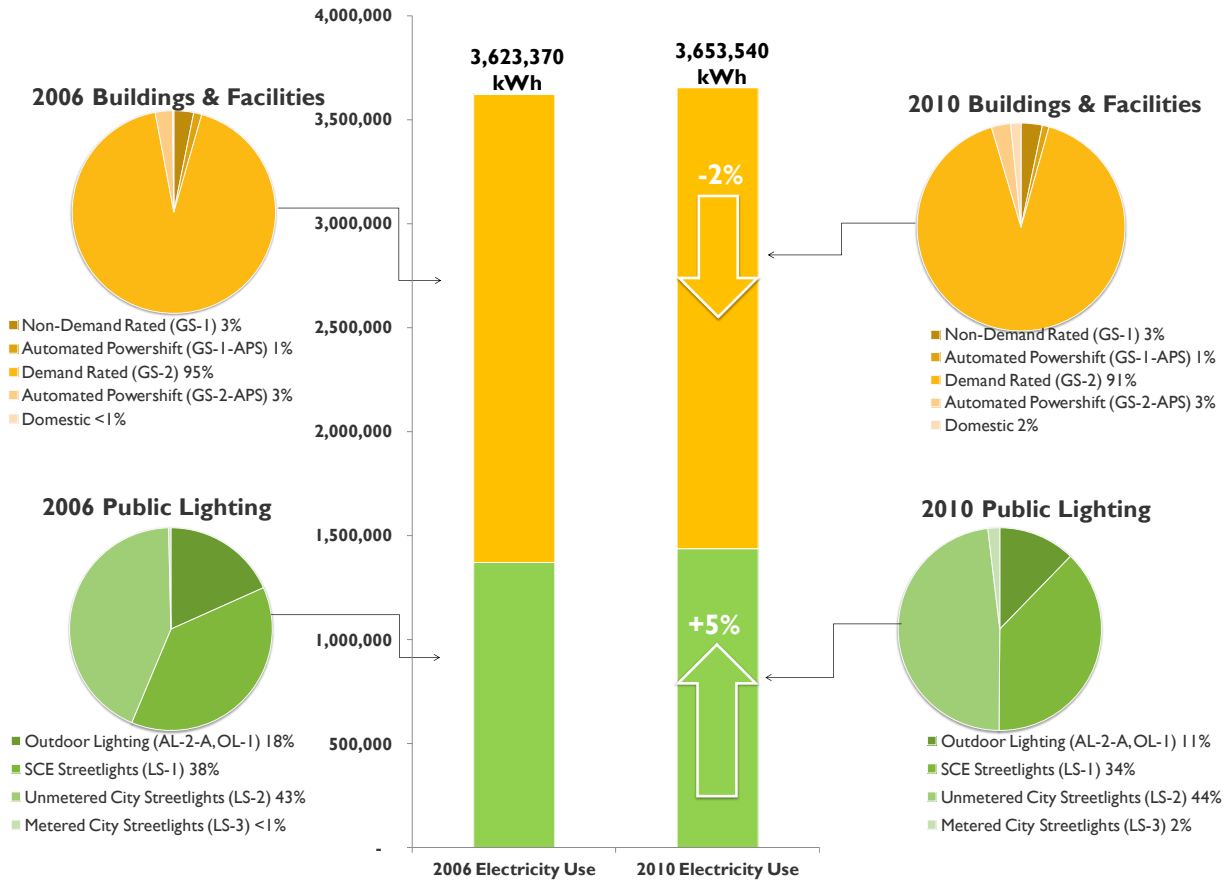
Buildings & Facilities[1]	2006 Annual kWh	Percentage of Total 2006 kWh
Non-Demand Rated (GS-1)	99,930	3%
Demand Rated (GS-2)	2,146,690	59%
Domestic	4,890	0%
Total Buildings & Facilities in 2006 Baseline Year	2,251,510	62%
Lighting[1]	**2006 Annual kWh**	**Percentage of Total 2006 kWh**
SCE-Owned Streetlights (LS-1)	489,330	14%
Unmetered City-Owned Streetlights (LS-2)	557,650	15%
Metered City-Owned Streetlights (LS-3)	4,670	0%
Outdoor Area Lighting (AL-2, OL-1)	235,630	7%
Traffic Lights (TC-1)	84,590	2%
Total Lighting in 2006 Baseline Year	1,371,870	38%
Total All Municipal Accounts in 2006*	**3,623,370**	**100%**

** Due to rounding, the total may not equal the sum of component parts.*

COMPARISON OF 2006 BASELINE YEAR TO 2010

Figure 16 compares the City's 2006 electricity use to 2010 data and provides a breakdown of the types of activities in which that electricity is used. Between 2006 and 2010, the City's municipal electricity use increased approximately 1%. Lighting electricity use increased 5% while buildings and facilities decreased electricity use 2% overall from 2006 to 2010.

Figure 16: Municipal Electricity Use by Sector, 2006–2010 (kWh)



The top ten municipal electricity facility and lighting users, by account and rate class, respectively, are provided in **Table 16**. The goal of identifying baseline and current year energy use is to better understand how the City uses electricity and to identify opportunities to further reduce energy use at City facilities. **Table 16** lists Claremont's top electricity users in 2006 and their 2010 uses and costs for comparison. Large changes were seen in several top users, including City-owned streetlights, SCE-owned streetlights, the Hughes Community Center, the police department, citywide traffic lighting, the Youth Center, and citywide area lighting. A possible explanation for the increase in City-owned streetlight use is the increase in number of accounts from two in 2006 to five in 2010. SCE-owned streetlights had a small increase in use but a large increase in cost as a result of the City's contract with SCE. These streetlights are unmetered, so cost is not dependent on use. The increase in cost is a result of a fixed-price escalator SCE uses in its LS-1 contracts with cities.

The largest change in use and cost in **Table 16** corresponds to City-owned area lighting, which decreased 32% in use and 52% in cost. The exact reason for this change is unknown but could be explained by the switching of rate tariffs for certain lighting fixtures and series. For example, the decrease in AL-2 use and cost could be correlated to the increases seen in LS-2 as a result of switching some lights from AL-2 to LS-2 rate tariffs. A possible reason for the large increase in

traffic lighting electricity use is the increase in accounts in 2010. In 2006, there were 26 traffic lighting accounts whereas in 2010 that number increased to 33.

Table 16: City of Claremont's Municipal Electricity Use by Rate Group, 2006–2010

Rank	Facility	2006 kWh	2010 kWh	Percentage Change, 2006–2010	2006 Cost	2010 Cost	Percentage Change, 2006–2010
1	City-Owned Streetlights, Unmetered (LS-2) – Citywide	557,650	627,870	13%	$63,580	$81,450	28%
2	SCE-Owned Streetlights, Unmetered (LS-1) – Citywide	489,330	495,440	1%	$123,050	$168,060	37%
3	Police Department – 570 W Bonita Avenue	480,360	417,280	-13%	$60,520	$49,360	-18%
4	Hughes Community Center – 1700 Danbury Road	451,840	329,280	-27%	$67,850	$53,930	-21%
5	Community Services Department – 1616 Monte Vista Avenue	423,520	445,200	5%	$63,460	$64,840	2%
6	City Hall – 207 Harvard Avenue	337,740	308,100	-9%	$52,170	$45,910	-12%
7	City-Owned Outdoor Area Lighting, Unmetered (AL-2) – Citywide	234,750	159,530	-32%	$27,240	$13,140	-52%
8	Youth Activity Center – 1717 Indian Hill Boulevard	216,720	187,680	-13%	$38,450	$37,000	-4%
9	Joslyn Center and Annex – 660 and 650 N Mountain Avenue	87,650	93,460	7%	$19,510	$21,000	8%
10	Traffic Lighting, (TC-1) – Citywide	84,590	127,860	51%	$12,500	$21,120	69%

CHAPTER 4

ENERGY EFFICIENCY STRATEGY

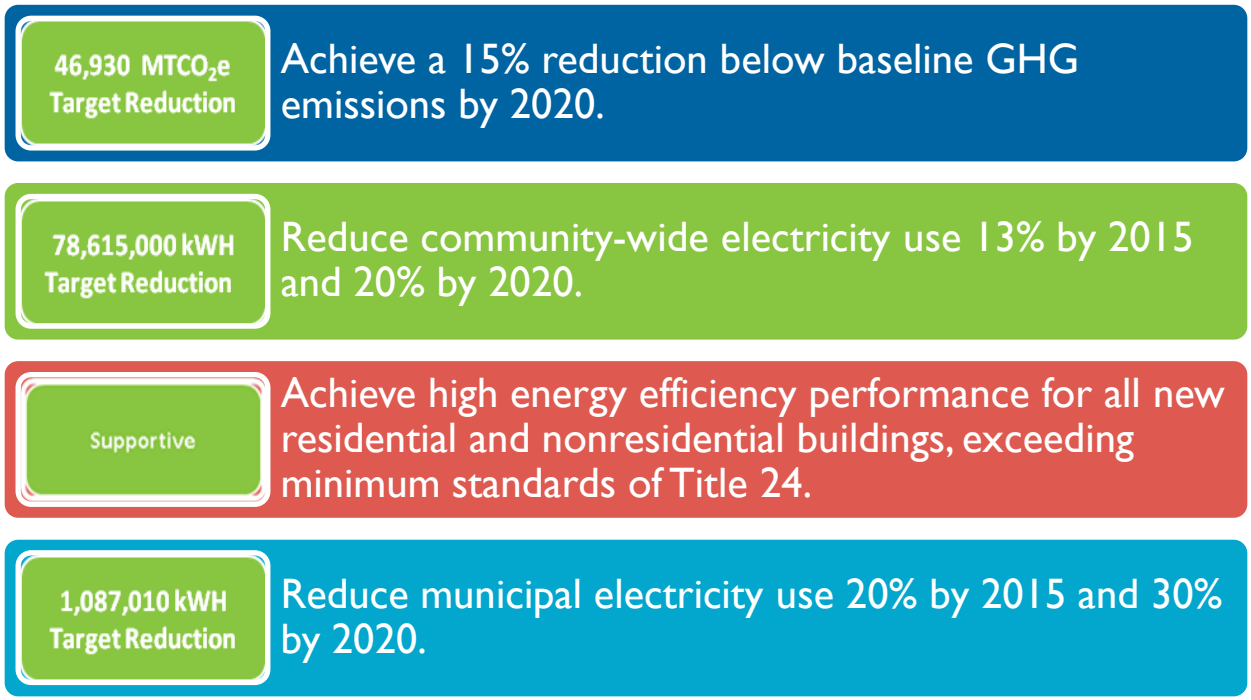
The energy efficiency strategy in this Energy Action Plan presents reduction targets for electricity use and greenhouse gas emissions. These targets focus on both community activities and municipal operations. Building on the City's Sustainable City Plan, these targets provide an updated assessment of energy reduction potential in the city, identifying a roadmap for ongoing reductions through 2020. The strategy includes a diverse mix of incentive-based, outreach, and regulatory programs for both new and existing development. The goals, policies, and actions in this chapter are based on existing policies while leveraging new resources and regional efforts, helping the City to better capitalize on new opportunities. The chapter further enumerates the City's ongoing commitment to act as a regional energy leader.

Reduction Targets

The City of Claremont has identified key energy efficiency targets that support the goals of the Energy Leader Partnership (ELP) and local planning priorities. Consistent with the targets of the California Public Utility Commission's (CPUC) Long Term Energy Efficiency Strategic Plan (CEESP) (refer to **Chapter 1**, **Figure 1**), the focus of this plan is on electricity efficiency. Electricity efficiency also provides the added benefit of reducing greenhouse gas (GHG) emissions. Accordingly, the EAP provides a numeric GHG reduction target of 15% below the 2006 baseline emissions levels by 2020. This target is recommended by the State in its 2008 Climate Change Scoping Plan, which currently serves as the state's primary guide for compliance with Assembly Bill (AB) 32. This approach helps the City understand the relative impact of electricity efficiency within the State's overall regulatory guidance related to GHG emissions.

In addition to the State-recommended reduction target of 15% below baseline GHG emissions, this chapter presents electricity reduction targets already undertaken by Claremont's Sustainable City Plan and developed through this planning process and shown in **Figure 17**. Consistent with the horizon of the Sustainable City Plan, this EAP presents targets for 2015. However, this EAP also identifies a longer-term 2020 horizon, which is the focus of quantification efforts in this plan. Each reduction target is supported by a series of goals, policies, and actions.

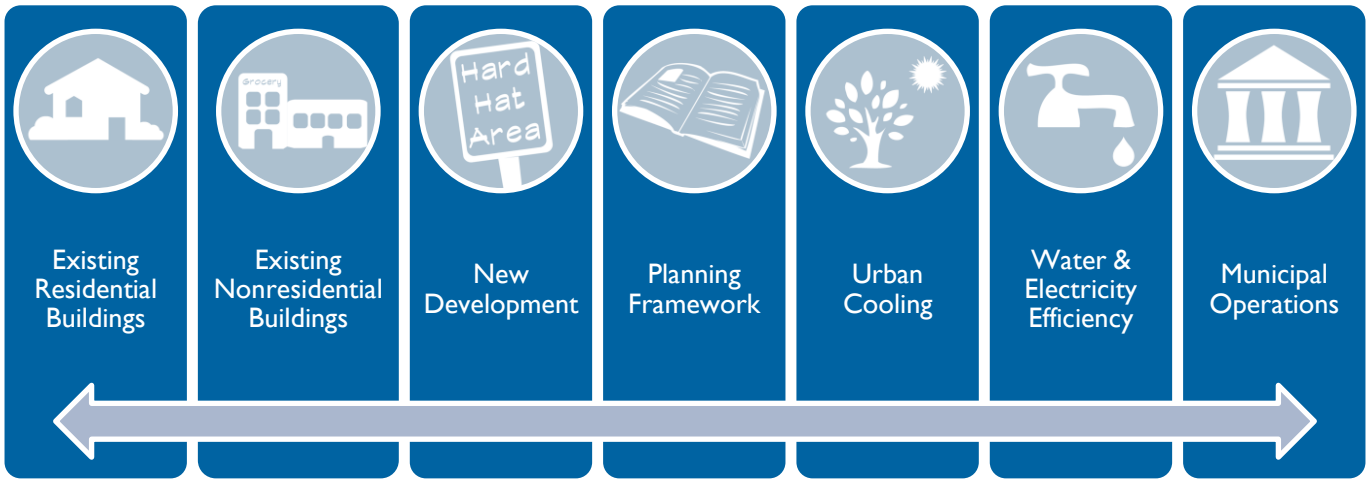
Figure 17: City of Claremont Reduction Targets



Strategy Structure

In order to achieve the target electricity reductions by 2020, the City of Claremont will need to implement the goals, policies, and actions set forth in this chapter. The City's strategy is structured around seven key topic areas, as depicted in **Figure 18**.

Figure 18: Reduction Strategy Structure



STRATEGY HIERARCHY

Each topic area includes corresponding goals, policies, and supporting actions that are necessary for successful implementation. Together, the goals, policies, and actions provide the City's strategy to achieve the electricity efficiency targets of this EAP. Each piece has a unique function, but they work collectively to reduce electricity use.

- Goal: The desired end state or expected outcome related to electricity reductions. Each goal corresponds to one of the topic areas identified.
- Policy: A statement that guides decision-making and indicates a commitment to achieve the specified outcomes of the goal. Policies provide the foundation for quantification of electricity reduction potentials.
- Implementation Action: An action, procedure, program, or strategy to achieve the electricity reductions of a policy. Action items may provide interim steps or supporting strategies. Actions may also indicate the range of opportunities to increase the electricity reduction potential of a policy.

POLICY CRITERIA AND EVALUATION

Each policy is assessed for its reduction of electricity use in community activities in 2020. Near-term electricity reductions are also identified for municipal projects, based on the results of recent audits completed at City facilities. In addition to electricity reductions, this EAP also identifies estimated costs, savings, responsibility for implementation, and additional benefits, or co-benefits, that may occur from implementation of each measure. This assessment recognizes the broad value of electricity efficiency for the community and the City of Claremont. Not only will electricity efficiency actions reduce utility bills, but they also provide an opportunity to improve the quality of homes and businesses, increase property values, improve the indoor comfort of buildings, and reduce ongoing maintenance costs. Actions in City government facilities also fulfill the City's requirements for participation in the ELP model, helping to qualify the City for additional financial incentives from Southern California Edison (SCE).

Electricity efficiency results from a change in operation, activity, or efficiency. In general, there are three primary methods for reducing electricity-related GHG emissions: (1) conservation, (2) greater efficiency, and (3) change in energy source.

Each policy in this chapter presents the following information:

- GHG reduction estimates, presented in ranges, for the year 2020.
- Kilowatt-hour (kWh) reduction estimates, presented in ranges, for the year 2020.
- Co-benefits that will likely occur through the implementation of each policy or action.

The 2006 baseline GHG inventory and forecast serve as the foundation for quantifying the City's policies. Activity data from the inventory, kWh of electricity, is combined with the performance targets and indicators identified in this EAP to calculate the range of potential reduction benefit for each policy. This approach ensures that the City's electricity reductions are tied to the baseline and anticipated trends that will occur in Claremont.

COMMUNITY STRATEGIES

The following goals, policies, and actions are aimed to reduce electricity use within the community, including all its residents and businesses. The actions will help the City achieve its energy savings targets contained in the Claremont Sustainable City Plan and the emissions reduction targets mandated by AB 32.

GOAL 1: EXISTING RESIDENTIAL SECTOR: ACHIEVE MAXIMUM ENERGY EFFICIENCY IN THE CITY'S EXISTING HOUSING STOCK.

POLICY 1.1: PROMOTE HOUSEHOLD ENERGY CONSERVATION BY RESIDENTS IN EXISTING STRUCTURES THROUGH SMALL-SCALE, BEHAVIORAL CHANGES.

POLICY 1.1

2020 kWh Reduction:

572,700–1,431,740

2020 $MTCO_2e$ Reduction:

140–360

Co-Benefits:

Reduces Peak Energy Demand, Supports Community Education, Reduces Monthly Utility Costs

Actions:

- Produce a best practices manual in energy conservation to distribute to the public at City facilities and at continued energy efficiency education outreach events. (SCP 1.1.2)
- Provide education for homeowners regarding the importance of home energy retrofits and improved access to high quality home energy audits. (SCP 1.1.1)
- Continue to recognize Claremont Home Energy Retrofit Program (CHERP) participants, community members who are leaders in implementing energy conservation and efficiency practices through events, awards, and publications. Consider posting a plaque in City Hall to honor all net-zero homes.
- Encourage resident participation in energy-monitoring programs that inform energy use decisions and reduce peak energy demand, such as utility-provided smart meter monitoring programs. (SCP 1.1.7)
- Partner with the Claremont Unified School District and educational institutions such as Claremont Graduate University to develop an education program and curriculum for students in energy saving at school and in the community. (SCP goal 1.1)
- Develop a program to include student groups and community volunteers in organizing and helping in City events, classes, and other services for energy savings.

POLICY 1.2: ENCOURAGE UPGRADES TO MORE ENERGY-EFFICIENT, COST-SAVING APPLIANCES AND EQUIPMENT.

POLICY 1.2

2020 kWh Reduction:

1,164,160–2,099,220

2020 $MTCO_2e$ Reduction:

290–520

Co-Benefits:

Reduces Peak Energy Demand, Provides Permanent Energy Reduction, Reduces Monthly Utility Costs, Supports Local Economy & Job Creation

Actions:

- Continue to support utility-sponsored exchanges for household appliances and equipment, including light bulbs and halogen lights, as well as refrigerators and freezers. Promote existing energy efficiency rebate offerings for appliances, refrigeration units, water heaters and pumps, area HVAC equipment, and lighting fixtures as programs become available, including rebates from the California Energy Commission and the South Coast Air Quality Management District.
- Work with regional and utility partners to create a community appliance trade-in rebate program for energy-saving appliances, including rebates from the California Energy Commission and Southern California Edison.
- Facilitate home-distributed generation renewable energy installations through fast-tracked and lowered fees on permitting for appliances such as solar water heaters and solar photovoltaic systems (~5.4 kW in size). (SCP 1.1.8 calls for facilitating installation of solar systems citywide)
- Develop a program to include student groups and community volunteers in organizing and helping in City events, classes, and other services for energy savings.

PROVIDE AN ANNUAL WORKSHOP FOR HOMEOWNERS, TO PROVIDE BASIC AND IMPORTANT HOME MAINTENANCE TIPS FOR ITEMS THAT CAN PROVIDE ENERGY SAVINGS SUCH AS HOT WATER HEATERS, FURNACES, DUCTS, GUTTERS, TREES, WEATHER STRIPPING AND VENTS. POLICY 1.3: ENCOURAGE VOLUNTARY RESIDENTIAL RETROFITS IN 10% OF SINGLE-FAMILY HOMES BY 2015 AND 20% BY 2020 TO IMPROVE THE QUALITY OF THE BUILT ENVIRONMENT, INCREASE INVESTMENT IN THE BUILDING STOCK, AND SPUR LOCAL JOB CREATION.

POLICY 1.3

2020 kWh Reduction:

2,344,870–9,159,650

2020 $MTCO_2e$ Reduction:

580–2,280

Co-Benefits:

Reduces Peak Energy Demand, Provides Permanent Energy Reduction, Reduces Monthly Utility Costs, Supports Local Economy & Job Creation

Actions:

- Continue to implement the Claremont Home Energy Retrofit Program (CHERP), and work with the San Gabriel Valley Council of Governments (SGVCOG) to secure additional funding for retrofit incentives. Participate in a revolving loan program that will provide small loans to local homeowners in order to assist them with the cost of energy efficiency improvements. (SCP 1.1.4)
- Continue utilizing the Housing Rehabilitation Program to target energy efficiency and "greening" of homes for income-qualified homeowners, leveraging state funding and

CHERP Progress to Date

–162 retrofits completed

–6% of Policy 1.3 reductions achieved

–To achieve Policy 1.3 targets would require average annual participation of 390 homes per year in CHERP program through 2020

Community Development Block Grants to improve energy efficiency in the existing housing stock.

- Promote the California Energy Savings Assistance Program for income-qualified renters.
- Develop an online energy "one-stop shop" to present local and state programs, resources, and educational documents regarding energy efficiency and renewable energy programs.
- Utilize CHERP in partnership with local energy technology businesses to facilitate a full-service residential auditing and retrofit program that includes post-audit and retrofit inspections.
- Run a quarterly ad in the paper(s) listing all CHERP participants and thanking them for doing their part. The ad should include positive testimonials and statistics.
- Continue to provide rebates to cover the cost of home energy audits to anyone who completes some portion of energy efficiency recommendations contained in the audit.

POLICY 1.4: FACILITATE ENERGY EFFICIENCY IMPROVEMENTS IN THE COMMUNITY'S SPECIAL HOUSING STOCK TO ACHIEVE RETROFITS IN 5% OF UNITS BY 2015 AND 10% OF UNITS BY 2020 IN GROUP QUARTERS, MULTI-FAMILY UNITS, AND AFFORDABLE HOUSING.

POLICY 1.4

2020 kWh Reduction:

368,060–1,725,300

2020 $MTCO_2e$ Reduction:

90–430

Co-Benefits:

Reduces Peak Energy Demand, Provides Permanent Energy Reduction, Reduces Monthly Utility Costs, Reduces Peak Energy Demand, Supports Local Economy & Job Creation

Actions:

- Promote cost-effective improvements to rental housing stock through outreach in partnership with the Claremont Colleges and affordable housing groups.
- Work with community groups such as the Friends of the Joslyn Senior Center and the City's senior programs to educate the senior community and distribute special retrofit incentives to limited-income seniors.
- Consider creation of a revolving loan program for energy efficiency improvements in multi-unit and affordable housing, using seed money or through creation of a regional loan program together with potential partners such as the Southern California Regional Energy Network and the San Gabriel Valley Council of Governments.

GOAL 2: EXISTING NONRESIDENTIAL SECTOR: OPTIMIZE BUSINESS ENERGY CONSERVATION AND EFFICIENCY PRACTICES IN THE BUILT ENVIRONMENT.

POLICY 2.1: EDUCATE CLAREMONT'S BUSINESSES IN ENERGY CONSERVATION OPPORTUNITIES THROUGH IMPROVEMENTS IN DAILY OPERATIONS.

POLICY 2.1

2020 kWh Reduction:

Supportive

2020 $MTCO_2e$ Reduction:

Supportive

Co-Benefits:

Reduces Peak Energy Demand, Supports Community Education, Supports Local Economy & Job Creation

Actions:

- Continue to work with San Gabriel Valley Council of Governments and Southern California Edison (SCE) to promote services that provide operational energy data to business owners.

- Work with the Southern California Regional Energy Network, SGVCOG, and SCE to create regional funding programs for bulk purchases of energy-efficient equipment and financing for nonresidential projects.
- Host an annual tour of new and retrofitted green buildings in the city to demonstrate successful energy efficiency features and opportunities.
- Create an energy efficiency awards program to recognize and award prizes to businesses that have achieved energy efficiency improvements.
- Initiate the development of a "green business" association that aids collaboration on energy efficiency opportunities and practices and provides recognition of businesses committed to energy-saving goals.

POLICY 2.2

2020 kWh Reduction:

4,770,730–9,541,450

2020 $MTCO_2e$ Reduction:

1,250–2,500

Co-Benefits:

Reduces Peak Energy Demand, Reduces Monthly Utility Costs

POLICY 2.2: SUPPORT THE USE OF ENERGY-EFFICIENT APPLIANCES AND EQUIPMENT IN LEASED AND OWNER-OCCUPIED BUSINESSES.

Actions:

- Partner with the San Gabriel Valley Council of Governments, the Southern California Regional Energy Network , and Southern California Edison (SCE) to promote rebates for commercial activities, including SCE rebates through the Energy Management Solutions Program for cooking and refrigeration appliances, lighting, and manufacturing equipment.
- Promote the practice of yearly energy benchmarking in nonresidential buildings to help track savings and identify energy-efficient appliances and technology that are cost-effective purchases.
- Provide materials to encourage business participation in energy-monitoring programs through SCE or programs such as Energy Star Portfolio Manager to help businesses understand and track the impact of appliances on energy use.

POLICY 2.3

2020 kWh Reduction:

798,980–2,785,300

2020 $MTCO_2e$ Reduction:

210–730

Co-Benefits:

Reduces Peak Energy Demand, Reduces Monthly Utility Costs

POLICY 2.3: FACILITATE RETROFITS AND ENERGY EFFICIENCY IMPROVEMENTS WITHIN THE NONRESIDENTIAL BUILDING STOCK TO ACHIEVE MAXIMUM ENERGY SAVINGS AND REDUCE OPERATIONAL EXPENSES.

Actions:

- Educate local building owners about free financial assistance for energy efficiency, and use local pilot efforts for ongoing education efforts. Potential programs include Southern California Edison's Direct Install program for free energy efficiency improvements and Los Angeles County's Building Performance Partnership, which provides up to $250,000 in free engineering services.
- Promote nonresidential financing options for energy efficiency improvements, including traditional mortgages, energy service agreements, on-bill financing, and efficiency bidding programs. Work with regional entities such as the Southern California Regional Energy Network and Los Angeles County to create a revolving loan fund to pay the cost of nonresidential retrofits that are not covered by utility rebates or other existing incentives. (builds on SCP 1.1.4)

- Encourage commercial buildings to voluntarily display energy performance ratings.
- Work with the San Gabriel Valley Council of Governments to distribute information on energy efficiency opportunities and financing to businesses through the business license renewal process.
- Partner with the Claremont Chamber of Commerce to identify candidate businesses and older facilities that could benefit from energy efficiency improvements and consider targeting them with extra education or incentives. Potential facilities that could benefit include Pepper Tree Square and Sprouts Shopping Center.

POLICY 2.4: PROVIDE TOOLS THAT SUPPORT THE ENERGY EFFICIENCY IMPROVEMENTS OF RENTER-OCCUPIED BUSINESSES.

Actions:

- Provide sample tenant-landlord agreements and pledges to interested landlords to show model agreements that integrate energy efficiency improvements into leases and contract provisions. Work with the Claremont Chamber of Commerce and the Energy Wise Partnership to develop a model lease that allows tenants and owners to share the costs of capital investments in energy efficiency and operational benefits through energy-aligned leases for commercial properties, which would support shared landlord-tenant agreements that facilitate shared financing of energy efficiency retrofits to renter-occupied buildings.

POLICY 2.4

2020 kWh Reduction:

Supportive Policy

2020 $MTCO_2e$ Reduction:

Supportive Policy

Co-Benefits:

Reduces Peak Energy Demand, Reduces Monthly Utility Costs, Supports Community Education

POLICY 2.5: PROMOTE DISTRIBUTED GENERATION TECHNOLOGIES FOR NONRESIDENTIAL USES.

Actions:

- Promote existing rebate and incentive offerings for purchase of on-site renewable energy as they become available.
- Use the Sustainability Report Card, Claremont City Letter, and more to highlight the newest and most promising solar photovoltaic, smart metering, and other renewable technology features, installation, and maintenance in new construction and retrofits citywide.

POLICY 2.5

2020 kWh Reduction:

164,640–329,280

2020 $MTCO_2e$ Reduction:

40–90

Co-Benefits:

Reduces Peak Energy Demand, Provides Permanent Energy Reduction, Reduces Monthly Utility Costs, Supports Community Education

GOAL 3: NEW DEVELOPMENT: ENSURE THE HIGHEST STANDARDS OF ENERGY-EFFICIENT PRACTICE AND TECHNOLOGIES ARE APPLIED TO ALL NEW DEVELOPMENTS BUILT IN THE COMMUNITY.

POLICY 3.1: CONTINUE TO ENCOURAGE THE ACHIEVEMENT OF LEED SILVER CERTIFICATION FOR ALL NEW CONSTRUCTION.

Actions:

- Provide incentives to encourage private development to reach LEED Silver certification. (SCP 4.2.2)
- Consider the adoption of a Green Building Ordinance requiring LEED Silver certification for private nonresidential construction projects over 20,000 square feet. (SCP 4.2.3)
- Create a green building tour for local homes and buildings achieving exemplary energy reductions.
- Track all green buildings in the city and provide recognition in the annual Sustainability Report Card and other City communications.

POLICY 3.1

2020 kWh Reduction:

108,380–146,560

2020 $MTCO_2e$ Reduction:

30–40

Co-Benefits:

Reduces Peak Energy Demand, Provides Permanent Energy Reduction, Reduces Monthly Utility Costs, Supports Community Education

POLICY 3.2: REVISE DEVELOPMENT CODES AND COMMISSION REVIEW POLICIES TO PROMOTE SUSTAINABLE PRACTICES IN THE BUILT ENVIRONMENT.

Actions:

- Require large-scale developments to be built solar-ready, and continue to encourage the use of LEED neighborhood development design principles for applicable projects.
- Consider adopting standards to require all residential additions greater than a certain threshold to trigger the requirement to achieve Build It Green's Green Point Rated or to exceed the minimum mandatory energy efficiency standards identified by CALGreen.

POLICY 3.2

2020 kWh Reduction:

Supportive Policy

2020 $MTCO_2e$ Reduction:

Supportive Policy

Co-Benefits:

Reduces Peak Energy Demand, Provides Permanent Energy Reduction, Reduces Monthly Utility Costs, Improves Indoor Environmental Quality

GOAL 4: PLANNING FRAMEWORK: CREATE A PLANNING FRAMEWORK TO SUPPORT ENERGY EFFICIENCY AND NET ZERO DEVELOPMENT.

POLICY 4.1: COLLABORATE WITH HISTORIC BUILDING OWNERS IN THE VILLAGE AND THROUGHOUT THE COMMUNITY TO IMPROVE THE ENERGY EFFICIENCY OF HISTORIC PROPERTIES WHILE ENHANCING THE CHARACTER AND INTEGRITY OF THE BUILDINGS.

POLICY 4.1

2020 kWh Reduction:

Supportive Policy

2020 $MTCO_2e$ Reduction:

Supportive Policy

Co-Benefits:

Supports Community Education, Supports Local Economy & Job Creation, Reduces Peak Energy Demand, Reduces Monthly Utility Costs

Actions:

- Work with regional partners to train planning and building staff on appropriate energy efficiency policies for historic properties.
- Develop and disseminate information regarding energy efficiency upgrades and retrofits appropriate for historic buildings through brochures, websites, and local partnerships.
- Revise the City's Mills Act Historic Property Preservation Agreement Application to encourage property owners to identify projects that maintain the historic integrity of the building while improving energy efficiency.
- Encourage Mills Act participants to integrate appropriate energy efficiency improvements into building renovations.

POLICY 4.2: SUPPORT THE DEVELOPMENT OF LOCAL GREEN BUILDING CAPACITY AND EXPERTISE IN THE PRIVATE AND PUBLIC SECTORS.

POLICY 4.2

2020 kWh Reduction:

Supportive Policy

2020 $MTCO_2e$ Reduction:

Supportive Policy

Co-Benefits:

Supports Community Education, Supports Local Economy & Job Creation

Actions:

- Establish a Green Realtor Certification program to certify real estate professionals in how to appraise and sell green homes and fund energy efficiency improvements to homes that need the work in order to be more marketable.
- Leverage federal and state funding programs to achieve energy efficiency objectives, including programs such as the Energy Efficient Mortgage Program provided by the US Department of Housing and Urban Development, the Veterans Administration Energy Efficiency Mortgage, and the Fannie Mae and Freddie Mac Energy Improvement Mortgage.
- Partner with the San Gabriel Valley Council of Governments to encourage the regular meeting of regional real-estate development business representatives and energy program managers of industrial, commercial, and large multi-family or group residential facilities to share information and identify best building and operation practices for maximum energy efficiency in large nonresidential buildings.
- Work with local schools and colleges to create energy efficiency ambassadors to learn about energy efficiency and intern with City staff to support implementation of the City's energy efficiency efforts.

GOAL 5: URBAN COOLING: MAXIMIZE USE OF SHADING AND COOLING TO SUSTAIN A COMFORTABLE AND ENERGY-EFFICIENT URBAN ENVIRONMENT.

POLICY: 5.1: MAINTAIN AND INCREASE TREE CANOPY COVERAGE ON PRIVATE PROPERTY IN THE CLAREMONT COMMUNITY.

Actions:

- Strengthen the City's landscape requirements to require a minimum percentage of tree canopy coverage within a specified time frame. (SCP 5.4.5)
- Develop a good tree maintenance education program for private tree owners (5.5.2), using existing tree planting resources on the City's website.
- Produce a list of City-certified arborists. (5.4.4)
- Encourage use of deciduous trees to shade homes and buildings (passive solar).

POLICY 5.2

2020 kWh Reduction:

122,780–810,080

2020 $MTCO_2e$ Reduction:

30–210

Co-Benefits:

Reduces Urban Air Temperatures, Reduces Peak Energy Demand, Reduces Monthly Utility Costs, Supports Community Education

POLICY 5.2: MAINTAIN AND INCREASE TREE CANOPY COVERAGE NEAR PUBLIC FACILITIES.

Actions:

- Continue to expand urban forest on public lands and rights-of-way. (5.4.6)
- Continue existing efforts through the ACORN Project, and expand programs to regenerate oak woodlands in public parks and open space in coordination with the Rancho Santa Ana Botanic Garden, Rivers and Mountains Conservancy, and other partners in the conservation community.

POLICY 5.2

2020 kWh Reduction:

Supportive Policy

2020 $MTCO_2e$ Reduction:

Supportive Policy

Co-Benefits:

Reduces Urban Air Temperatures, Reduces Peak Energy Demand, Reduces Monthly Utility Costs

POLICY 5.3: FACILITATE THE APPLICATION OF ADVANCED COOL ROOFS IN EXISTING DEVELOPMENT.

Actions:

- Apply cool roofing to all public facilities undergoing upgrades to demonstrate effectiveness and savings.
- Work with the Claremont Colleges and large commercial businesses to expand existing green roof and showcase programs.

POLICY 5.3

2020 kWh Reduction:

100,620–195,180

2020 $MTCO_2e$ Reduction:

30–50

Co-Benefits:

Supports Community Education, Reduces Urban Air Temperatures, Reduces Monthly Utility Costs, Supports Local Economy & Job Creation

GOAL 6: INTEGRATE WATER RELATED ENERGY CONSERVATION AND EFFICIENCY PRACTICES IN NEW AND EXISTING DEVELOPMENT.

POLICY 6.1: ENCOURAGE WATER CONSERVATION PRACTICES IN RESIDENTIAL, COMMERCIAL, AND INSTITUTIONAL BUILDINGS.

POLICY 6.1

2020 kWh Reduction:

Supportive Policy

2020 $MTCO_2e$ Reduction:

Supportive Policy

Co-Benefits:

Conserves Water, Reduces Monthly Utility Costs

Actions:

- Continue to broadly implement and enforce the City's Water Conservation Ordinance and Water Efficient Landscaping Ordinance. (SCP 1.2.6)
- Continue to promote and facilitate education campaigns on water conservation practices.
- Continue to promote and facilitate school education programs in water conservation practices available in partnership with water providers and regional partners, including Golden State Water Company and Sustainable Claremont.

POLICY 6.2: PROMOTE ENERGY-EFFICIENT WATER APPLIANCES AND TECHNOLOGIES.

POLICY 6.2

2020 kWh Reduction:

256,280–283,260

2020 $MTCO_2e$ Reduction:

0–70

Co-Benefits:

Conserves Water, Reduces Monthly Utility Costs, Supports Local Economy & Job Creation

Actions:

- Facilitate gray water systems in the residential community.
- Facilitate reclaimed water systems in large institutional and commercial buildings.
- Continue to promote regional water appliance and technology programs including ultra high efficiency toilet distribution and other low-flow appliances
- Promote and facilitate the use of rebates on water-efficient appliances provided by Southern California Edison and other utility costs.

POLICY 6.3: REDUCE ELECTRICITY USED FOR IRRIGATION PURPOSES THROUGH CONSERVATION AND EFFICIENCY.

POLICY 6.3

2020 kWh Reduction:

351,490–388,480

2020 $MTCO_2e$ Reduction:

90–100

Co-Benefits:

Conserves Water, Reduces Monthly Utility Costs, Supports Local Economy & Job Creation

Actions:

- Expand use of climate-appropriate vegetation at parks and in the public right-of-way. (SCP 1.2.4)
- Continue to promote and facilitate turf removal service as a method of water conservation (SCP 1.2.6), building on the Turf Replacement Program funded by the Golden State Water Company and the Metropolitan Water District of Southern California.
- Continue to promote and facilitate residential audits of irrigation systems provided by the Golden State Water Company. (SCP 1.2.6)
- Continue to promote and facilitate commercial, industrial, and institutional audits of irrigation systems provided by the Golden State Water Company.

MUNICIPAL STRATEGIES

The following goals, policies, and actions are aimed at reducing electricity use within municipal operations. The actions will help the City achieve its own energy savings targets and the emissions reduction targets mandated by AB 32.

NEAR-TERM AND RECENTLY COMPLETED PROJECTS

A key objective of this EAP is to identify prioritized, actionable, turnkey strategies and projects that will lower the energy use for City-owned facilities and City operations. In working toward this objective, the EAP identifies future opportunities for municipal energy efficiency projects. In order to evaluate potential energy efficiency projects, the City conducted audits at several key facilities, reviewed audit results and opportunities at other facilities, and identified near-term projects to be implemented.

The City has committed to prioritizing the implementation of projects that yield cost savings and enhance municipal operations. Several of these projects have been implemented since the baseline year of 2006 and have already yielded reductions in municipal energy use. These recently completed projects are identified in **Table 17.**

Table 17: Energy Efficiency Projects Completed Since 2006

Location	Project	Status	Annual Electricity Reduction (kWh/year)	Annual $MTCO_2e$ Reduction
Facilities citywide	Lighting retrofits; motion sensors	Completed	235,880	60
Parking structure	Lighting upgrade	Completed	125,330	30
City facilities	Server virtualization	Completed	25,000	10
Total			386,210	100

The City is also identifying additional near-term projects to implement in close coordination with the San Gabriel Valley Council of Governments (SGVCOG) and SCE. It is anticipated that these priority short-term actions will help the City further advance toward ELP targets and long-term energy efficiency objectives. In partnership with the SGVCOG, the City is conducting additional audits at City facilities to identify additional near-term opportunities for electricity efficiency. Facilities with completed audits include City Hall, the police department, the Alexander Community Center, and the Joslyn Senior Center. The City has committed to prioritizing the implementation of projects with a payback period of six years or less, which are identified in priority order of shortest to longest payback period in **Table 18.**

Table 18: Near-Term Energy Efficiency Projects in Process

Location	Project	Annual Electricity Reduction (kWh/year)	Annual Cost Savings	Estimated SCE Incentive	Funding Opportunities
Joslyn Senior Center	Lighting upgrades and installation of occupancy sensors	16,660	3,470	1,310	On-Bill Financing, SoCalREN, CEC Loans
Police Department	Lighting upgrades and installation of occupancy sensors	39,060	4,510	2,240	On-Bill Financing, SoCalREN, CEC Loans
Alexander Community Center	HVAC retrofits and upgrades	95,920	14,580	8,800	On-Bill Financing, SoCalREN, CEC Loans
City Hall	Lighting upgrades and installation of occupancy sensors	43,320	6,940	4,200	On-Bill Financing, SoCalREN, CEC Loans
City Hall	HVAC tuning and upgrades	12,320	2,940	1,110	On-Bill Financing, SoCalREN, CEC Loans
Alexander Community Center	Lighting upgrades and installation of occupancy sensors	43,360	6,500	2,710	On-Bill Financing, SoCalREN, CEC Loans
Police Department	Heat plump replacement	9,250	1,070	1,150	On-Bill Financing, SoCalREN, CEC Loans
City-wide[1]	Replace HPS lamps in City streetlights with LED lamps	TBC	TBC	TBC	On-Bill Financing, SoCalREN, CEC Loans
Total		**259,890**	**40,010**	**21,520**	

1. To be confirmed. Data unavailable at the time of report preparation. Municipal Goals, Policies, and Actions

MUNICIPAL GOAL 7: MAXIMIZE MUNICIPAL ENERGY EFFICIENCY.

POLICY 7.1: INTEGRATE ENERGY MANAGEMENT PRACTICES INTO DAILY OPERATIONS.

Actions:

- Take advantage of free auditing resources for municipal buildings. (1.1.5)
- Use the tools of the Energy Enterprise Utility Management Information System to benchmark energy use in all municipal facilities. Distribute information to staff about best practices to maintain indoor comfort and conserve energy in their work environment.
- Implement an annual conservation competition between municipal departments for total energy consumption reductions.
- Highlight and share energy efficiency projects and savings from energy efficiency projects.

POLICY 7.2: ACHIEVE MAXIMUM ENERGY CONSERVATION IN CITY FACILITIES.

Actions:

- Use audits of City facilities to prioritize energy efficiency projects, based on payback period, cost savings, and benefits for municipal maintenance.
- Continue to implement full-building retrofits of existing facilities through lighting, HVAC, pumping, and envelope material upgrades with a payback period of less than four years.
- Set aside savings from energy efficiency projects to fund additional efforts to reduce energy use.
- Participate in the Southern California Regional Energy Network (SoCalREN) to fund and support energy efficiency projects.
- Achieve LEED Gold certification in all new municipal facilities. (4.1.1)

POLICY 7.3: IMPLEMENT AN ENERGY EFFICIENCY PROCUREMENT POLICY TO ENSURE THE PURCHASE OF EFFICIENT EQUIPMENT THAT WILL RESULT IN ENERGY COSTS SAVINGS WHICH OUTWEIGH ADDITIONAL UPFRONT COSTS.

Actions:

- Work with the San Gabriel Valley Council of Governments, the Southern California Regional Energy Network (SoCalREN), and regional partners to encourage development of regional mechanisms to finance bulk-purchasing efforts building on the SoCalREN's efforts for municipal bulk purchasing and to reduce the costs of energy-efficient appliances.
- Integrate proper energy efficiency maintenance recommendations for appliances and equipment into the energy-efficient procurement policy.

POLICY 7.4: ACHIEVE MAXIMUM ENERGY USE REDUCTIONS IN MUNICIPAL LIGHTING ACCOUNTS THROUGH RETROFITS AND CONVERSION PROGRAMS.

Actions:

- Work with Southern California Edison (SCE), the Southern California Regional Energy Network, and the San Gabriel Valley Council of Governments to identify cost-saving opportunities to retrofit all City-owned streetlights with energy-efficient models.
- Consider the purchase of SCE-owned streetlights to provide greater control over the energy efficiency of streetlights and reduce the costs associated with streetlight maintenance and replacement.
- Investigate opportunities to upgrade City-owned outdoor area and decorative lighting where appropriate to maximize energy and money savings while maintaining visual character.

POLICY 7.5: TRAIN STAFF TO SUPPORT IMPLEMENTATION OF ENERGY EFFICIENCIES IN THE WORKPLACE AND REDUCE THE COSTS OF MUNICIPAL OPERATIONS.

Actions:

- Support and encourage City staff participation in regional planning efforts and trainings related to energy efficiency.
- Consider using the municipal green team with representatives from all City departments to meet regularly and identify opportunities for energy efficiency improvements.
- Improve and expand education programs for City employees on energy conservation and efficiency.
- Develop an annual awards program for departments that do the most in achieving sustainability and energy consumption reductions.

REDUCTION SUMMARY

Completed and near-term municipal energy efficiency projects will help the City to achieve approximately an 18% reduction in municipal electricity use below 2006 levels. In addition, the City will be able to work toward the State-recommended AB 32 targets for all GHGs, which is equal to 15% below the 2006 baseline emissions by 2020. In total, state programs and policies in this EAP have the potential to reduce forecast emissions to 10% below 2006 levels, reducing emissions by approximately 5,180 $MTCO_2e$, based on the average reduction potential of recommended policies. All strategies in this EAP will reduce total community-wide electricity use by approximately 5% below the 2006 baseline levels. The high range of reduction potential may reduce community-wide electricity use by up to 8%. Additional mandatory standards or programs would be required to achieve the 30% reduction target by 2020. **Figures 19** and **20** illustrate the kWh and GHG reductions achieved by goal for 2020.

Figure 19: Estimated 2020 Savings by Goal Topic (kWh)

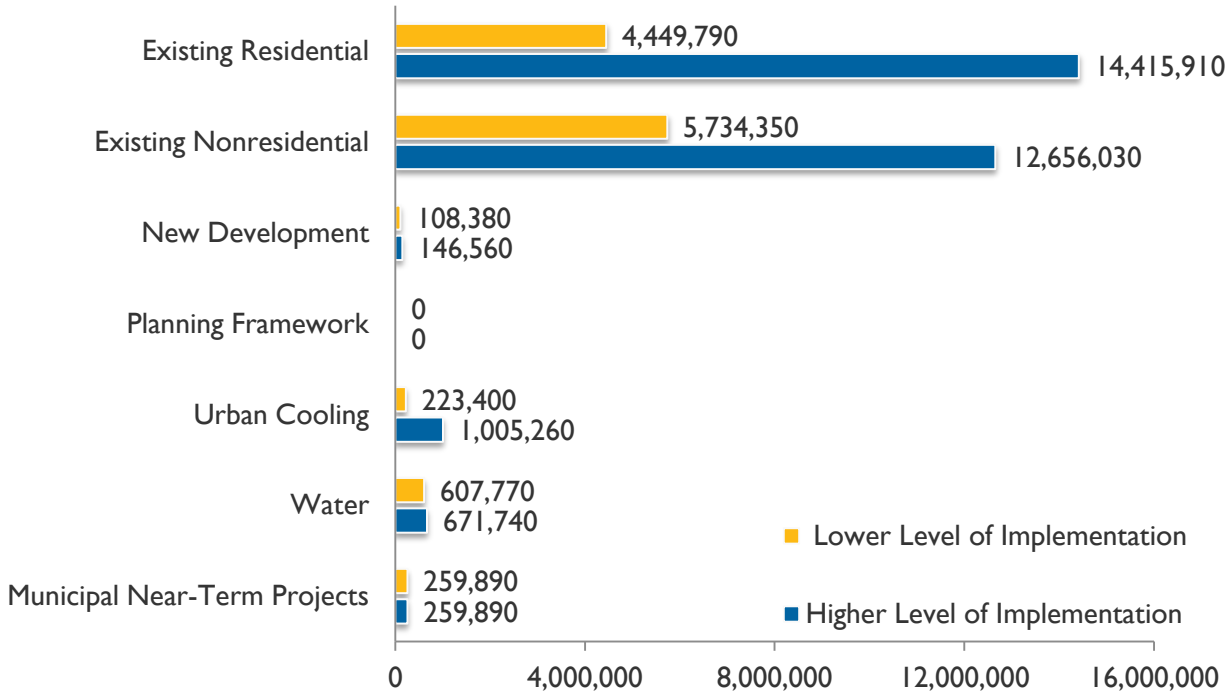
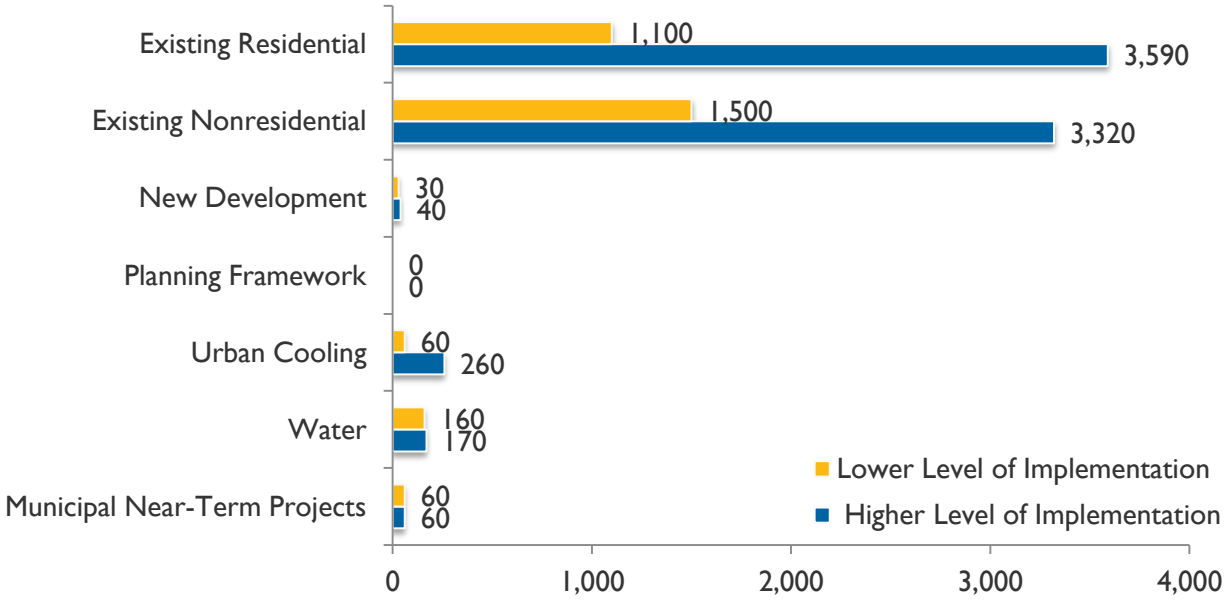


Figure 20: Estimated 2020 Savings by Goal Topic ($MTCO_2e$)



CHAPTER 5

PLAN IMPLEMENTATION

This chapter outlines a path for the City to implement the strategies described in this Energy Action Plan (EAP) and monitor overall progress toward achieving the EAP reduction targets. EAP implementation will require City leadership to execute strategies and report on the progress of implementation. This Plan identifies the responsible department for each measure and offers time frames and plan-level cost estimates for implementing each strategy. Lastly, successful implementation requires regular monitoring and reporting. City staff should monitor the progress on implementing the EAP on an annual basis and report to the City Council on EAP progress each year.

The City will work with the San Gabriel Valley Council of Governments (SGVCOG), the San Gabriel Valley Energy Wise Partnership (SGVEWP), and other partners as appropriate, such as Los Angeles County, the Los Angeles Regional Collaborative, and the Southern California Regional Energy Alliance, to identify effective procedures to track the status of energy efficiency projects without increasing the level of effort from existing City staff. A designated City staff lead will monitor Plan implementation and will support ongoing regional collaboration. The City staff lead will participate in the identification of regional resources available to support and streamline the implementation process.

All program activity managers will be required to submit regular project updates to the City's designated EAP implementation coordinator and/or energy manager, including written reports of activities and project outcomes. The energy manager will track both short- and long-term progress toward EAP targets. The SGVCOG is currently developing a regionally uniform method to collect, track, and report on EAP metrics and project outcomes. The City will work with the SGVCOG and the energy manager to benefit from these regional tools and standardize reporting processes.

City finance staff will maintain records of all project costs, funds, and expenditures. City staff will work closely with the energy manager to submit necessary reports to all funding agencies, including required financial reports and documentation of project outcomes. City staff or a third-party inspector will be responsible for all pre- and post-inspections of new or retrofitted work to confirm that the projects are installed, operational, and consistent with project objectives. The energy manager will be responsible for tracking all related project files and providing appropriate information to the SGVCOG and the SGVEWP. Crucial to the implementation of this Plan will be Claremont's implementation program. The implementation program identifies the anticipated electricity savings, GHG reduction, agency, or department responsible for implementation, starting time frame, and co-benefits.

MONITORING AND UPDATING THE EAP

The City will use the implementation program to track, monitor, and update the EAP. As the City reports on progress in implementing the EAP, staff will evaluate the effectiveness of each measure to ensure that the anticipated electricity and GHG reductions are occurring. In the event that GHG reductions do not occur as expected, the City will be able to modify and add further policies to the EAP to ensure the City meets its reduction target.

IMPLEMENTATION POLICY 1: ANNUALLY MONITOR AND REPORT THE CITY'S PROGRESS TOWARD ACHIEVING THE REDUCTION TARGET.

- Facilitate implementation of measures and actions related to municipal operations.
- Prepare an annual progress report for review and consideration by the Sustainability Committee and City Council.
- Utilize the monitoring and reporting tool to assist with annual reports.
- Identify key staff responsible for annual reporting and monitoring.

IMPLEMENTATION POLICY 2: REGULARLY REVIEW AND UPDATE THE CITY'S GREENHOUSE GAS INVENTORY, ENERGY PROFILE, AND ENERGY ACTION PLAN.

- Conduct an annual review of electricity usage and associated GHG emissions.

- Update the community and municipal GHG emissions inventory every three to five years for a current emissions estimate.
- Update the plan to incorporate new technology, programs, and policies as available to achieve electricity efficiency.
- Consider updating and amending the plan, as necessary, should the City find that policies and actions are not meeting the intended electricity reductions.
- When City resources are available, integrate the EAP into a comprehensive climate action plan or GHG reduction plan to incorporate GHG and energy/fuel reduction targets to address energy supply, natural gas demand, transportation, waste, wastewater, and other sectors as applicable.

IMPLEMENTATION POLICY 3: CONTINUE TO DEVELOP COLLABORATIVE PARTNERSHIPS THAT SUPPORT IMPLEMENTATION OF THE ENERGY ACTION PLAN.

- Continue collaboration with the San Gabriel Valley Council of Governments (SGVCOG) and participation as an active member of the San Gabriel Valley Energy Wise Partnership and the Energy, Environment, and Natural Resources Committee.
- Participate in other SGVCOG-sponsored programs, projects, and events to help meet the goals described in this EAP.

IMPLEMENTATION POLICY 4: SUPPORT REGIONAL FUNDING EFFORTS TO IMPLEMENT THE ENERGY ACTION PLAN.

- Work with the San Gabriel Valley Council of Governments to identify regional funding sources to support policies in this EAP.
- Ensure implementation through the inclusion of policies and action in department budgets, the capital improvement program, and other plans as appropriate.
- Pursue local, regional, state, and federal grants as appropriate to support implementation.

IMPLEMENTATION POLICY 5: FULFILL SCE'S ENERGY LEADER PARTNERSHIP PROGRAM REQUIREMENTS TO IMPLEMENT THIS ENERGY ACTION PLAN.

- Confirm review and acceptance/adoption of this EAP by City Council.
- Identify the plan's implementation time frame to begin within six months of approval.
- Integrate EAP implementation projects into the City's operating budget.
- Integrate EAP initiatives into the City's General Plan and other appropriate policy documents, or adopt a resolution committing to use the EAP as a guide for future energy efficiency actions and to incorporate it into long-term policy documents such as the General Plan, climate action plan, or sustainability plan.
- Implement the identified policies, actions, and projects identified in this EAP.

- Demonstrate to Southern California Edison that the energy efficiency actions identified in this EAP have been implemented and the criteria identified in **Appendix C** have been met.

IMPLEMENTATION AND MONITORING TOOLS

MONITORING AND REPORTING TEMPLATE

To determine whether the City is on track to meet the adopted target, it is important that the City monitor implementation progress on a regular basis and identify whether the policies as implemented are achieving their intended reductions or if additional measures will need to be implemented to meet the target.

The implementation and financial metrics identified in this EAP have been calculated using an Excel-based workbook. This workbook calculates energy savings, GHG reductions, and financial costs and savings based on the key metrics identified in the plan. These performance metrics include information such as the average energy reduction per household, the number of trees planted, or the square feet of facilities retrofitted.

To support City staff's reporting efforts on the progress of EAP implementation, the workbook includes a reporting template and space for staff to enter the actual performance of each measure based on the key metrics identified. Once the information is entered for each year, updated energy savings, GHG reductions, and monetary costs or savings incorporated into the report template can easily be exported and used to present EAP progress to City advisory bodies, assist in annual fiscal budget planning, and highlight City and community success in reducing energy use through City newsletters and online media.

ENTERPRISE ENERGY MANAGEMENT INFORMATION SYSTEM

The SGVCOG is collaborating with the City of Claremont and Los Angeles County to implement the Enterprise Energy Management Information System (EEMIS) utility manager to track municipal energy usage, enabling participating San Gabriel Valley municipalities to access facility energy consumption, archive billing data, and report and analyze energy consumption data via the Internet. The EEMIS project was developed in 2000 and has been adapted to assist cities in the SGVCOG with monitoring, forecasting, and budgeting for energy use at City facilities.

EEMIS includes the following components and features:

- Web-based application using browser-based technology.
- Collects data from all connected facilities and stores data in a standard format.
- Generates usage and demand profiles for the purpose of energy procurement and efficiency project identification.
- Provides utility bill data for the different department subtenants within a building based on prevailing rates or customized for modified rate schedule.
- Utilizes energy cost analysis and notifications based on user-defined parameters to control costs by gaining experience from similar usage facilities (based on area of facility, number of occupants, size of equipment, season, historical usage over user-defined periods, etc.).

IMPLEMENTATION PROGRAM

The information in this implementation program provides an overall, planning-level framework for achieving the reductions in this Plan. **Table 19** presents indicators for the implementation of each policy. These indicators represent the level of participation and energy reductions that would achieve the average range of the high and low electricity reductions in this Plan. The electricity metrics show the total number of participating households, nonresidential square footage, and energy reduction per participant necessary to achieve each policy's average reduction potential. Metrics for supportive policies are shown as "Supportive." **Appendix B** also presents the approach to quantification, including the analytical process for identifying appropriate regional reductions, costs, and financial benefits. **Implementation Program Table**

Policy	2020 Electricity Reductions (kWh)[1]	2020 Performance Targets	Participant Type	Average Reduction per Participant		Beginning Time Frame	Implementing Department	Supporting Departments and Organizations
1.1: Promote household energy conservation by residents in existing structures through small-scale, behavioral changes.	-1,002,220	4,670	Households achieving average reduction of 20% kWh through behavioral changes	210	kWh	Near-Term	Human Services	SGVCOG, SGVEWP
1.2: Encourage upgrades to more energy-efficient, cost-saving appliances and equipment.	-1,631,690	3,380	Households with at least 50% more energy-efficient appliances	210	kWh	Mid-Term	Planning Division	SGVCOG, SGVEWP, SCE, CEC, South Coast Air Quality Management District
		40	Households with solar water heater installed	640	kWh			
		110	Household solar PV panel installations approximately 5.4 kW size	7,890	kWh			

Policy	2020 Electricity Reductions (kWh)[1]	2020 Performance Targets	Participant Type	Average Reduction per Participant		Beginning Time Frame	Implementing Department	Supporting Departments and Organizations
1.3: Encourage voluntary residential retrofits single-family homes by 2015 and 20% by 2020 to improve the quality of the built environment, increase investment in the building stock, and spur local job creation.	-5,752,260	2,020	Single-family homes retrofitted to achieve approximately 33% kWh energy savings/house	2,710	kWh	Mid-Term	Planning Division	SGVCOG, SGVEWP, Sustainable Claremont, Los Angeles County, SoCalREN
1.4: Facilitate energy efficiency improvements in the community's special housing stock to achieve retrofits in 5% of units by 2015 and 10% of units by 2020 in group quarters, multi-family units, and affordable housing.	-1,046,680	140	Elderly households participating	2,710	kWh	Long-Term	Planning Division	SGVCOG, SGVEWP, Sustainable Claremont, Los Angeles County, SoCalREN
		210	Low-income households participating	2,710	kWh			
2.1: Educate Claremont's businesses in energy conservation opportunities through improvements in daily operations.	Supportive	Supportive	Supportive	Supportive	Supportive	Near-Term	Economic Development Division	SGVCOG, SGVEWP, Claremont Chamber of Commerce
2.2: Support the use of energy-efficient appliances and equipment in leased and owner-occupied businesses.	-7,156,090	50	Nonresidential buildings upgrading or installing energy-efficient equipment	132,520	kWh	Mid-Term	Planning Division	SGVCOG, SGVEWP, Los Angeles County, Claremont Chamber of Commerce

Policy	2020 Electricity Reductions (kWh)[1]	2020 Performance Targets	Participant Type	Average Reduction per Participant		Beginning Time Frame	Implementing Department	Supporting Departments and Organizations
2.3: Facilitate retrofits and energy efficiency improvements within the nonresidential building stock to achieve maximum energy savings and reduce operational expenses.	-1,792,140	4	Claremont shopping centers participating in retrofits	374,090	kWh	Long-Term	Planning Division	SGVCOG, SGVEWP, Los Angeles County , SoCalREN, Sustainable Claremont
		20	Small offices less than 10,000 square feet completing retrofits	10,650	kWh			
2.4: Provide tools that support the energy efficiency improvements of renter-occupied businesses.	Supportive	Supportive	Supportive	Supportive	Supportive	Long-Term	Economic Development Division	SGVCOG, SGVEWP, Los Angeles County
2.5: Promote distributed generation technologies for nonresidential uses.	-246,960	20	Existing nonresidential buildings installing 13 kW solar photovoltaic panels	19,600	kWh	Long-Term	Planning Division	Sustainable Claremont, Los Angeles County
3.1: Continue to encourage the achievement of LEED Silver certification for all new construction.	-127,470	50	New households achieving 15% greater efficiency than 2013 code	140	kWh	Mid-Term	Building Division	US Green Building Council, Sustainable Claremont
		50	New nonresidential buildings achieving 15% greater efficiency than 2013 code	930	kWh			
3.2: Revise development codes and commission review policies to promote sustainable practices in the built environment.	Supportive	Supportive	Supportive	Supportive	Supportive	Long-Term	Planning Division	SGVCOG, SGVEWP

Policy	2020 Electricity Reductions (kWh)[1]	2020 Performance Targets	Participant Type	Average Reduction per Participant		Beginning Time Frame	Implementing Department	Supporting Departments and Organizations
4.1: Collaborate with historic building owners in the Village and throughout the community to improve the energy efficiency of historic properties while enhancing the character and integrity of the buildings.	Supportive	Supportive	Supportive	Supportive	Supportive	Mid-Term	Planning Division	SGVCOG, SGVEWP, SCE
4.2: Support the development of local green building capacity and expertise in the private and public sectors.	Supportive	Supportive	Supportive	Supportive	Supportive	Mid-Term	Planning Division	SGVCOG, SGVEWP, SCE
5.1: Maintain and increase tree canopy coverage on private property in the Claremont community.	-466,430	2,900	Full-grown deciduous trees planted	40	kWh	Long-Term	Community Services	Sustainable Claremont, Rivers and Mountains Conservancy, Local Botanic Gardens
5.2: Maintain and increase tree canopy coverage near public facilities.	Supportive	Supportive	Supportive	Supportive	Supportive	Near-Term	Community Services	Sustainable Claremont, Rivers and Mountains Conservancy, Local Botanic Gardens

Policy	2020 Electricity Reductions (kWh)[1]	2020 Performance Targets	Participant Type	Average Reduction per Participant		Beginning Time Frame	Implementing Department	Supporting Departments and Organizations
5.3: Facilitate the application of advanced cool roofs in existing development.	-147,900	1,110	Single-family houses with roofs upgraded or constructed with high-albedo surfaces or high-efficiency foam and membranes	110	kWh	Long-Term	Planning Division	SGVCOG, SGVEWP, Los Angeles County
		70	Average-size nonresidential buildings with roofs upgraded or constructed with high-albedo surfaces or high-efficiency foam and membranes	370	kWh			
6.1: Encourage water conservation practices in residential, commercial, and institutional buildings.	Supportive	Supportive	Supportive	Supportive	Supportive	Long-Term	Community Services	SGVCOG, SGVEWP, Los Angeles County, Metropolitan Water District, Golden State Water Company
6.2: Promote energy-efficient water appliances and technologies.	-269,770	36,110	Residents implementing range of indoor water-savings actions	5,490	Gallons of Water	Mid-Term	Community Services	SGVCOG, SGVEWP, SCE, Los Angeles County, Metropolitan Water District, Golden State Water Company

Policy	2020 Electricity Reductions (kWh)[1]	2020 Performance Targets	Participant Type	Average Reduction per Participant		Beginning Time Frame	Implementing Department	Supporting Departments and Organizations
6.3: Reduce electricity used for irrigation purposes through conservation and efficiency.	-369,985	36,110	Residents implementing range of outdoor water-savings actions	8,380	Gallons of Water	Mid-Term	Community Services	SGVCOG, SGVEWP, SCE, Los Angeles County, Metropolitan Water District, Golden State Water Company
7.1: Integrate energy management practices into daily operations.	Supportive	Supportive	Supportive	Supportive	Supportive	Near-Term	Community Services, Planning Division	SGVCOG, SGVEWP, SoCalREN, Los Angeles County
7.2 Achieve maximum energy conservation in City facilities.	Supportive	Supportive	Supportive	Supportive	Supportive	Near-Term	Community Services, Planning Division	SGVCOG, SGVEWP, SoCalREN, Los Angeles County
7.3 Implement an energy efficiency procurement policy to ensure the purchase of efficient equipment that will result in energy costs savings which outweigh additional upfront costs.	Supportive	Supportive	Supportive	Supportive	Supportive	Near-Term	Community Services, Planning Division	SGVCOG, SGVEWP
7.4: Achieve maximum energy use reductions in municipal lighting accounts through retrofits and conversion programs.	Supportive	Supportive	Supportive	Supportive	Supportive	Near-Term	Community Services, Planning Division	SGVCOG, SGVEWP, SoCalREN, Los Angeles County

Policy	2020 Electricity Reductions (kWh)[1]	2020 Performance Targets	Participant Type	Average Reduction per Participant		Beginning Time Frame	Implementing Department	Supporting Departments and Organizations
7.5: Train staff to support implementation of energy efficiencies in the workplace and reduce the costs of municipal operations.	Supportive	Supportive	Supportive	Supportive	Supportive	Near-Term	Community Services, Planning Division	SGVCOG, SGVEWP,

1. Identifies the midpoint between the low and high range of potential electricity reductions.

Continued Partnership Opportunities

One component to the successful implementation of the City's EAP will be the sharing of resources through continued communication and collaboration with other cities in the region. Continued collaboration will foster a more supportive environment to share best practices, and potentially coordinate future requests for funding and/or implementation. Efforts to implement programs and policies on a regional scale will provide consistency in the energy efficiency market and leverage economies of scale. The City will continue to participate in SGVCOG discussions and events related to energy efficiency such as the Energy Wise Partnership, the Energy, Environment, and Natural Resources Committee, and other SGVCOG-sponsored events to help meet the goals described in this EAP.

CONCLUSION

This Energy Action Plan is an opportunity for the City to create and achieve a long-term vision for energy efficiency. The City of Claremont has developed this plan as part of a regional framework that allows for close coordination and consistency between communities in the San Gabriel Valley, while responding to local community characteristics, values, and planning frameworks.

The policies and actions in this plan are meant to serve as a road map for reducing electricity use in the community and municipal facilities. While the primary focus of this plan is on reducing electricity and related greenhouse gas emissions, the policies and actions in this Energy Action Plan also provide the ancillary benefits of improving the quality of the local built environment, reducing household electricity costs, and stimulating the local economy through investments in energy efficiency.

GLOSSARY OF TERMS

GLOSSARY OF TERMS

Adjusted Business-as-Usual (ABAU) Forecast

An emissions forecast that accounts for actions and legislation implemented by the State of California to reduce greenhouse gas emissions statewide that will also have a measurable beneficial impact for local jurisdictions' emissions.

Assembly Bill 32 (AB 32), California Global Warming Solutions Act of 2006

Establishes a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gases for the State of California. Makes the California Air Resources Board (CARB) responsible for monitoring and reducing statewide greenhouse gas emissions, with a target to reduce emissions to 1990 levels by 2020.

Baseline Inventory

The base year for assessment of energy trends against which future progress can be measured for a single calendar year (2005–2008), consistent with legislative guidance and the Assembly Bill 32 Scoping Plan.

Best Practice

Coordinated technologies, systems, and design approaches, which (through research and experience) demonstrate the ability to consistently achieve above-standard results while avoiding negative environmental impacts. Best practices change over time as improved components, technologies, systems, and design approaches become available.

Source: California Long Term Energy Efficiency Strategic Plan

Building Envelope

All components of a building that enclose conditioned space and separate it from unconditioned space or the outdoors.

Buildout; Build-out

Development of land to its full potential or theoretical capacity as permitted under current or proposed planning or zoning designations.

Business as Usual (BAU)

A scenario that assumes that no specific actions will be taken to reduce emissions and growth coming from the expansion of activity and services within the city. All forecasts are based on this scenario.

California Air Pollution Control Officers Association (CAPCOA)

An association of air pollution control officers representing the 35 local air quality agencies throughout California.

California Air Resources Board (CARB)

A part of the California Environmental Protection Agency that reports directly to the Governor's Office in the Executive Branch of California State Government. CARB's mission is to promote and protect public health, welfare, and ecological resources through the effective and efficient reduction of air pollutants while recognizing and considering the effects on the economy of the state.

Source: California Long Term Energy Efficiency Strategic Plan

California Building Code (Title 24, Part 6)

California Code of Regulations, Title 24, also known as the California Building Standards Code (composed of 12 parts). Title 24, Part 6 sets forth California's energy efficiency standards for residential and nonresidential buildings and was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.

Source: Southern California Edison

California Environmental Quality Act

A state law requiring state and local agencies to regulate activities with consideration for environmental protection. If a proposed activity has the potential for a significant adverse environmental impact, an environmental impact report (EIR) must be prepared and certified as to its adequacy before action can be taken on the proposed project. General plans require the preparation of a program EIR.

California Global Warming Solutions Act of 2006

See Assembly Bill 32.

California Green Building Code (CALGreen, Title 24, Part 11)

Refers to CALGreen component of the California Building Code. See California Building Code.

California Long Term Energy Efficiency Strategic Plan (CEESP)

A plan adopted by the California Public Utilities Commission in 2008 that presents a single road map to achieve maximum energy savings across all major groups and sectors in California. This comprehensive plan for 2009 to 2020 is the state's first integrated framework of goals and strategies for saving energy, covering government, utility, and private sector actions, and holds energy efficiency to its role as the highest priority resource in meeting California's energy needs.

California Solar Initiative (CSI)

Allows the California Public Utilities Commission to provide incentives to install solar technology on existing residential, commercial, nonprofit, and governmental buildings if they are customers of the state's investor-owned utilities: Pacific Gas and Electric, San Diego Gas & Electric, or Southern California Edison.

Carbon Dioxide Equivalent (CO_2e)

A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP). The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP. For example, the GWP for methane is 21. This means that emissions of one million metric tons of methane are equivalent to emissions of 21 million $MTCO_2e$.

Clean Car Fuel Standard (AB 1493 – Pavley)

Signed into law in 2002 and commonly referred to as Pavley standards. Requires carmakers to reduce greenhouse gas emissions from new passenger cars and light trucks beginning in 2011. The California Air Resources Board anticipates that the Pavley standards will reduce greenhouse gas emissions from new California passenger vehicles by about 22% in 2012 and about 30% in 2016, all while improving fuel efficiency and reducing motorists' costs.

Climate Change (global climate change)

The term "climate change" is sometimes used to refer to all forms of climatic inconsistency, but because the earth's climate is never static, the term is more properly used to imply a significant change from one climatic condition to

another. In some cases, climate change has been used synonymously with the term "global warming"; scientists, however, tend to use the term in the wider sense to also include natural changes in climate.

Community-Wide Greenhouse Gas Inventory

Looks at greenhouse gas emissions caused by all activities within a city's geographic boundary. Typical sectors include residential, commercial, and industrial energy use, transportation, off-road equipment, waste generation, and energy associated with water delivery and treatment.

Demand Response

Mechanism for managing end user electricity consumption in response to energy supply conditions. A demand responsive system is one that can be controlled (either directly or remotely) to reduce electricity consumption during times of increased energy demand and/or constrained energy availability.

Source: California Long Term Energy Efficiency Strategic Plan

Direct Access Electricity

Direct access service is an optional choice that customers can select to purchase electricity and other services from an electric service provider (ESP), instead of from Southern California Edison. An ESP is an entity that contracts directly with its customers to provide electric service, and is responsible for arranging an adequate supply of electricity. ESPs are required to meet certain requirements with the California Public Utilities Commission in addition to meeting financial and technical requirements with Southern California Edison.

Electricity Sectors

The EAP groups electricity use into four key topics, based on the type of activity that consumes electricity and causes greenhouse gas emissions. The electricity sectors consist of existing residential, existing nonresidential, new development (residential and nonresidential), and City government operations.

Emissions Forecast

Baseline emissions are forecast to future years based on projected increases in population, jobs, households, and other local trends. Forecasts will show two scenarios: (1) outcomes if no behavioral or regulatory changes are made (a business-as-usual scenario), and (2) outcomes to account for reduction efforts mandated by the State of California, such as new vehicle standards and fuel standards.

Energy Conservation

Methods of reducing energy waste, such as turning off lights or heating when not needed.

Energy Efficiency

Doing the same or more work with less energy, such as replacing incandescent light bulbs with compact fluorescent light bulbs, using appliances that use less electricity to run than older models, or utilizing a vehicle that can travel farther using the same amount of gasoline.

Energy, Environment, and Natural Resources Committee

The San Gabriel Valley Council of Government's Energy, Environment, and Natural Resources Committee coordinates environment-related efforts among the valley's many jurisdictions, pursues funding opportunities for the valley, and promotes beneficial policies to its member agencies.

Energy Leader Partnership Model

Southern California Edison (SCE) has developed the Energy Leader Partnership (ELP) Model to provide support to local governments in identifying and implementing opportunities to improve energy efficiency in municipal facilities and promoting community awareness of demand side energy management opportunities. By participating in SCE's ELP, local governments are taking actions to support the California Long Term Energy Efficiency Strategic Plan while saving energy and fiscal resources for their communities. In the San Gabriel Valley, the San Gabriel Valley Council of Governments (SGVCOG) is leading the implementation of the ELP with SCE and 27 of the 31 member cities in the SGVCOG. The ELP comprises four focus areas: municipal retrofits, demand response, strategic plan support, and energy efficiency programs coordination. The ELP program has four incentive tiers for participating cities: (1) Valued Partner, (2) Silver, (3) Gold, and (4) Platinum. Each city begins the program as a valued partner and to advance to the next incentive tier, each participating city must achieve the pre-determined energy savings and requirements community-wide and for city facilities.

Energy Star

A joint program of the US Environmental Protection Agency and the US Department of Energy to provide consumers with information and incentives to purchase the most energy efficient products available.

Energy Upgrade California

Energy Upgrade California is a new statewide program that offers incentives to homeowners who complete select energy-saving home improvements on a single-family residence. These incentive packages encourage customers to take a "whole house" approach by combining several related improvements at once to increase a home's overall energy efficiency and achieve greater savings. By working with participating contractors, homeowners can choose from two incentive options, the Basic Upgrade Package or the Advanced Upgrade Package, based on their improvement needs and budget.

Source: Pacific Gas and Electric Company

Enterprise Energy Management Information Systems

The San Gabriel Valley Council of Governments (SGVCOG) has funded and created a program to set up a "utility manager" computer program to track municipal usage and identify need for sub-metering to plan, budget, and manage bills for each city facility. The SGVCOG is collaborating with the County of Los Angeles to implement the County's Enterprise Energy Management Information System (EEMIS) utility manager to track municipal energy usage, enabling participating San Gabriel Valley municipalities to access facility energy consumption, archive billing data, and report and analyze energy consumption data via the Internet. The County's EEMIS project was developed in 2000 and has been adapted to assist cities in the SGVCOG with monitoring, forecasting, and budgeting for energy use at city facilities.

Goal

The desired end state or expected outcome related to electricity reduction targets in the Energy Action Plan (EAP). Each goal corresponds to one of the EAP's seven topic areas: existing residential buildings, existing nonresidential buildings, new development, planning framework, urban cooling, water and electricity efficiency, and municipal operations.

Gray water (also recycled water, reclaimed water)

Untreated water from showers, sinks, and washing machines that is captured before going down the drain, for re-use in below-ground irrigation rather than being directed to the sewer.

Green Building

Sustainable or "green" building is a holistic approach to design, construction, and demolition that minimizes the building's impact on the environment, the occupants, and the community.

Greenhouse Gases

Gases, which cause heat to be trapped in the atmosphere, warming the earth. Greenhouse gases are necessary to keep the earth warm, but increasing concentrations of these gases are implicated in global climate change. The majority of greenhouse gases come from natural sources, although human activity is also a major contributor. The principal greenhouse gases that enter the atmosphere because of human activities are:

- Carbon Dioxide (CO_2): Carbon dioxide is a colorless, odorless gas that occurs naturally in the earth's atmosphere. Carbon dioxide also enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees, and wood products, and as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (or "sequestered") when plants absorb it as part of the biological carbon cycle.
- Methane (CH_4): Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- Nitrous Oxide (N_2O): Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- Fluorinated Gases: Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as high global warming potential gases ("high GWP gases").

Greenhouse Gas Inventory

A greenhouse gas inventory provides estimates of the amount of greenhouse gases emitted to and removed from the atmosphere by human activities. A city or county that conducts an inventory looks at both community emissions sources as well as emissions from government operations. A base year is chosen and used to gather all data from that year. Inventories include data collection from such things as vehicle miles traveled (VMT), energy usage from electricity and gas, and waste. Inventories include estimates for carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs), which are referred to as the six Kyoto gases.

Green Teams

A formal or informal group of people in a company who are passionate about environmental issues. The groups brainstorm solutions and promote ways in which their company's practices can become more environmentally sustainable, often creating sustainability plans and approaching management for funding to meet plans.

Source: California Long Term Energy Efficiency Strategic Plan

Green Waste

Refers to lawn, garden, or park plant trimmings and materials and can be used in home composts or picked up curbside by municipal waste haulers.

Implementation Action

An action, procedure, program, or strategy to achieve the electricity reductions of a policy. Action items may provide interim steps or supporting strategies. Actions may also indicate the range of opportunities to increase the electricity reduction potential of a policy.

Integrated Systems

Lighting systems that include components, assemblies, and controls designed to work together effectively.

Kilowatt-Hour (kWh)

A unit of energy equivalent to one kilowatt (kW) of energy used for an hour. For example, if an appliance requires a kW of energy to function, leaving the appliance on for one hour would consume one kWh of energy.

Source: California Long Term Energy Efficiency Strategic Plan

Leadership in Energy and Environmental Design (LEED)

A green building standard and set of rating systems established by the US Green Building Council.

Methods

A consistent body of methods or procedures to approach a given task; in terms of a greenhouse gas emissions inventory and forecast, refers to an internally consistent approach to quantify greenhouse gas emissions that supports the principles of inventories identified in the Local Government Operations Protocol: relevance, completeness, consistency, transparency, and accuracy.

Mixed Use

Properties on which various uses such as office, commercial, institutional, and residential are combined in a single building or on a single site in an integrated development project with significant functional interrelationships and a coherent physical design. A "single site" may include contiguous properties.

Municipal Operations Greenhouse Gas Inventory

Looks at greenhouse gas emissions caused by City operations. Typical sectors include energy associated with City facilities, vehicle fleets, equipment, waste generation, employee commutes, and more.

Participating Municipality

Those jurisdictions or member cities that: (i) are located in Southern California Edison's (SCE) service territory; and (ii) have been selected by SCE and the SGVCOG to participate in the program as set forth in the Statement of Work. Includes 27 participating cities (Alhambra, Arcadia, Baldwin Park, Bradbury, Claremont, Covina, Diamond Bar, Duarte, El Monte, Glendora, Irwindale, La Cañada-Flintridge, La Puente, La Verne, Monrovia, Montebello, Monterey Park, Pomona, Rosemead, San Dimas, San Gabriel, San Marino, Sierra Madre, South El Monte, South Pasadena, Temple City, and West Covina).

Source: Southern California Edison

Performance Indicators

Specific, measurable, actionable, realistic, and time-specific requirements that will directly and measurably contribute to the City's Energy Action Plan goals.

Source: Southern California Edison

Policy

A statement that guides decision-making and indicates a commitment to achieve the specified outcomes of the goal. Policies provide the foundation for quantification of electricity reduction potentials in the Energy Action Plan.

Project Steering Committee (PSC)

Along with other San Gabriel Valley cities taking part in the regional Energy Action Plan (EAP) project, the City participated in a PSC throughout EAP development. The purpose of the PSC is to confirm a regional approach to EAP development, guide the project, and share best practices among jurisdictions. The PSC convened approximately once a month between June 2011 and September 2012. During PSC meetings, representatives from San Gabriel Valley Council of Governments staff and the technical consultant project team facilitated discussions and presentations to review options to achieve electricity efficiency.

Property Assessed Clean Energy (PACE)

A form of financing that creates municipal finance districts to provide loans to homeowners and businesses for energy-efficient retrofits and renewable energy system installations. Loans are repaid through an annual surcharge on property tax assessments. Governor Schwarzenegger signed the nation's first law allowing PACE financing in 2008.

Source: California Long Term Energy Efficiency Strategic Plan

Public Goods Charge

Funds that may be collected from electric utility ratepayers pursuant to Section 381 of the California Public Utilities Code for public purposes programs, including energy efficiency programs approved by the California Public Utilities Commission.

Source: Southern California Edison

Reach Codes

Codes that direct contractors to construct buildings significantly more energy efficient than required by conventional building codes.

Source: California Long Term Energy Efficiency Strategic Plan

Renewable Energy

Energy from sources that regenerate and are less damaging to the environment, such as solar, wind, biomass, and small-scale hydroelectric power.

Renewables Portfolio Standard

Requires utility providers to increase the portion of energy that comes from renewable sources to 20% by 2010 and to 33% by 2020. Due to potential implementation issues, the adjusted business-as-usual forecast assumes that energy providers will achieve a minimum 28% renewable portfolio by 2020.

San Gabriel Valley Council of Governments (SGVCOG)

A Joint Powers Authority representing 31 incorporated cities and unincorporated areas in the San Gabriel Valley. The SGVCOG works with member agencies to collectively address transportation, housing, economic growth, and environment issues that are most effectively addressed at a regional scale.

San Gabriel Valley Energy Wise Partnership

An alliance between the San Gabriel Valley Council of Governments and Southern California Edison to bring energy savings to the San Gabriel Valley through innovative public education and energy efficiency projects.

SCE Energy Leader Partnership

A program run by Southern California Edison (SCE) that provides support to local governments and institutions to assist them in achieving a joint vision of sustainability. SCE works closely with partners to address key issues that are barriers to achieving this vision and develop a long-term energy efficiency strategy. For local governments, SCE provides support to identify and address energy efficiency opportunities in municipal facilities, take actions supporting the California Long Term Energy Efficiency Strategic Plan, and increase community awareness and participation in demand side management opportunities. A key goal in SCE's local government partnerships is helping cities and counties lead by example in addressing energy efficiency first in their own municipal facilities.

SCE Incentive (financial incentive)

Provisions issued by Southern California Edison in order to promote the installation of energy efficiency and renewable projects in the utility territory. There are a variety of types of incentives, including rebates, loans, and alternative rates. The incentives are paid through the statewide Public Goods Charge.

Sector

Emissions are grouped by the type of activity that generated the emissions, such as transportation, residential energy use, or commercial energy use.

Senate Bill 375

Requires the California Air Resources Board to develop regional greenhouse gas emissions reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035. The regional targets adopted by the Southern California Association of Governments are an 8% reduction in per capita transportation emissions by 2020 and a conditional 13% reduction by 2035, which will be achieved through the development of a Sustainable Communities Strategy as part of the 2012 Regional Transportation Plan update.

Simple Payback Period

Amount of time required to recover an initial investment.

Source: California Long Term Energy Efficiency Strategic Plan

South Coast Air Quality Management District (SCAQMD)

The air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties, the smoggiest region of the United States. The SCAQMD's goal is to protect the health of residents while remaining sensitive to businesses.

Southern California Edison (SCE)

An investor-owned utility that is the primary electricity provider to Southern California and the San Gabriel Valley.

Southern California Regional Energy Network (SoCalREN)

A Los Angeles County program that will fund a wide spectrum of energy efficiency projects, including community-wide projects such as Energy Upgrade California, commercial property assessed clean energy financing, and municipal technical assistance projects.

Standard Practice

As opposed to best practices, standard practices include techniques, policies, methodologies, procedures, technologies, and systems that are typically employed by practitioners and generally do not achieve optimal results (in terms of energy efficiency, demand-responsiveness, high quality, environmental sustainability, smart-grid connectedness, and integration with renewable energy generation sources).

Source: California Long Term Energy Efficiency Strategic Plan

Sustainability

Community use of natural resources in a way that does not jeopardize the ability of future generations to live and prosper.

Sustainability Committee

Appointed by the Claremont City Council on January 13, 2009, this nine-member committee provides broad citizen oversight for implementation of the Claremont Sustainable City Plan. The committee consists of representatives from the community and a City staff representative.

Sustainable Development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Source: *Report of the World Commission on Environment and Development: Our Common Future*, also known as the Brundtland Commission or Brundtland Report

Tariff

Electricity rates set by the utility and approved by the California Public Utilities Commission to recover costs. Customers may be placed in different rate classes based on a combination of parameters such as level of demand, end-use applications, or economic situation.

Title 24

See California Building Code.

Vehicle Miles Traveled (VMT)

A key measure of overall street and highway use. Reducing VMT is often a major objective in efforts to reduce vehicular congestion and achieve regional air quality goals.

Water Conservation

Reducing water use, such as turning off taps, shortening shower times, and cutting back on outdoor irrigation.

Water Efficiency

Replacing older technologies and practices in order to accomplish the same results with less water; for example, by replacing toilets with new low-water-using models and by installing "smart controllers" in irrigated areas.

Zero Net Energy

For buildings, use of no more energy over the course of a year than can be generated onsite through renewable resources such as solar, wind, or geothermal power.

Source: California Long Term Energy Efficiency Strategic Plan

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APPENDIX A

GREENHOUSE GAS EMISSIONS INVENTORY REPORT

This greenhouse gas (GHG) emissions inventory and forecast (Inventory) update will act as a foundation for the City of Claremont's Energy Action Plan (EAP) by informing the City and the community of the largest sources of GHG emissions, and thus the largest opportunities for reduction. The Inventory identifies the major and minor sources of GHG emissions to help in the process of creating reduction strategies in the EAP in response to local emissions characteristics. This inventory also serves as an update to the 2010 GHG inventory and forecast prepared by CTG Energetics and utilizes approaches and methods recommended for the 27 participating cities as described in the Best Practices Memo, Regional Framework, and California Air Resources Board's (CARB) Local Government Operations Protocol (LGOP).

Specifically, the Inventory does the following:

- Presents GHGs from community-wide and municipal activities in calendar year 2006.
- Updates the existing GHG inventory and forecast prepared by CTG Energetics in 2010 for consistency with the regional EAP approach.
- Forecasts how community-wide emissions will increase by 2020 and 2035 if no behavioral or regulatory changes are made (known as a business-as-usual scenario).
- Adjusts the GHG forecasts to account for reduction efforts mandated by the State of California, such as new energy efficiency and vehicle standards.
- Provides City staff, decision-makers, and stakeholders with adequate information to direct development of an EAP and to establish GHG emissions reduction and energy efficiency targets, if desired.

RELEVANT EMISSIONS

The Inventory includes the major sources of GHGs caused by activities in 2006 per best practice and consistent with the methods outlined in the Best Practices Memo and in the Regional Framework and those recommended by CARB. The Inventory analyzes the following community and municipal emissions sources:

COMMUNITY

- **Energy** – Electricity and natural gas consumed by residents, businesses, and industry in the city in 2006.
- **Direct Access Electricity** – Electricity purchased by commercial customers from utilities other than Southern California Edison (SCE). Direct access natural gas was not requested and will not be reported in the Inventory.
- **Street and Traffic Lighting** – Electricity used by street and traffic lights within the city but not owned by the City of Claremont.
- **On-Road Transportation** – Vehicle miles traveled (VMT) in, to, and from the city in 2006.
- **Waste** – Methane emissions from solid waste, also known as municipal solid waste, and green waste (alternative daily cover or ADC) sent to landfills and regional incinerators (also known as transformation facilities) from the city in 2006.
- **Water** – The electricity used to pump, deliver, and treat water for consumption in city limits.
- **Wastewater** – The energy required to collect and treat the wastewater disposed of in the city in 2006.
- **Off-Road Equipment** – Emissions from construction as well as lawn and garden equipment/vehicles operated within the city.

MUNICIPAL

- **Buildings** – Electricity and natural gas consumed by City buildings and facilities in 2006.
- **Fleet** – Gasoline, diesel, and compressed natural gas (CNG) used by all City-owned vehicles.
- **Lighting** – Electricity, paid for by the City, used by street, traffic, and outdoor lighting within city limits.
- **Employee Commute** – Emissions from the vehicles City employees use to get to and from work.
- **Government-Generated Solid Waste** – Indirect emissions from the waste disposed of by employees and operations of the City.

KEY CONCEPTS

The following terms are used throughout the Inventory and are fundamental to understanding the contents of the greenhouse gas inventory and forecast:

- **Baseline year** – Emissions are quantified for the baseline year of 2006, which is consistent with the baseline year definition of Assembly Bill (AB) 32, the California Global Warming Solutions Act. This baseline year allows the City to track and observe the impact of its actions taken to date and better inform future GHG reduction strategies.
- **Business-as-usual (BAU)** – The scenario on which all forecasts are based. Assumes no specific actions are taken to reduce emissions and growth comes from the expansion of activity and services within the city.
- **Carbon dioxide equivalent (CO_2e)** – Represents the three main GHGs—carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O)—in comparable terms, since all three gases trap heat in the atmosphere differently. Greenhouse gases are reported in metric tons of CO_2e ($MTCO_2e$).
- **Sectors** – Emissions are grouped by the type of activity that generated the emissions, such as on-road transportation, residential energy use, or commercial energy use.

COMMUNITY-WIDE INVENTORY

INVENTORY SUMMARY

The community of Claremont emitted approximately 312,880 $MTCO_2e$ in the baseline year 2006. As shown in **Figure A-1** and **Table A-1**, on-road transportation was responsible for the majority of emissions with its 163,720 $MTCO_2e$ making up 52% of baseline emissions. Commercial/industrial energy and residential energy were a close tie for second, with the former contributing 20% (63,580 $MTCO_2e$) and the latter adding 59,550 $MTCO_2e$ (19% of total). The remaining 9% of emissions (totaling 26,030 $MTCO_2e$) came from solid waste, street and traffic lighting, water, direct access electricity, off-road equipment, and wastewater.

Figure A-1: Community-Wide GHG Emissions by Sector

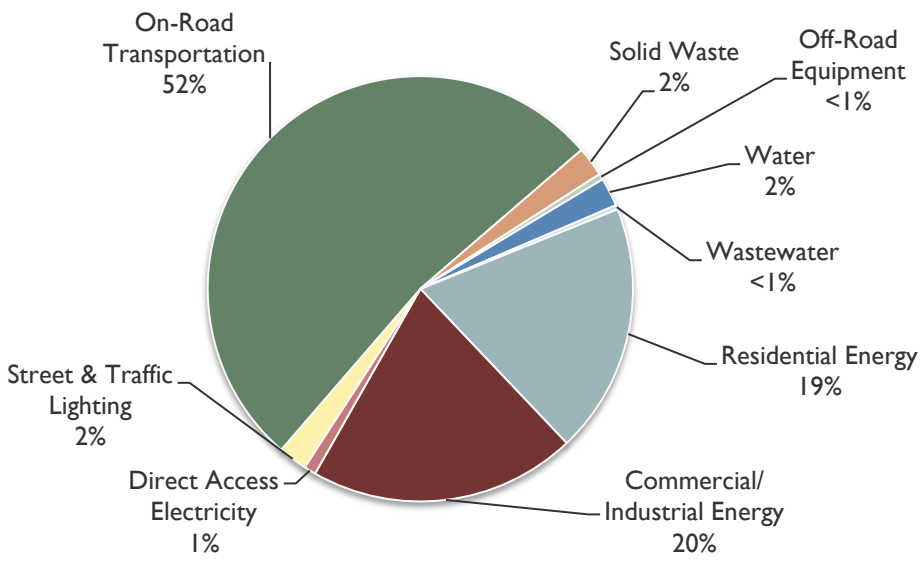


Table A-1: Community-Wide GHG Emissions by Sector

Sector	$MTCO_2e$	Percentage of Total
Residential Energy	59,550	19%
Commercial/Industrial Energy	63,580	20%
Direct Access Electricity	2,840	1%
Street & Traffic Lighting	6,880	2%
On-Road Transportation	163,720	52%
Solid Waste	7,080	2%
Off-Road Equipment	1,430	<1%
Water	6,800	2%
Wastewater	1,000	<1%
Total*	**312,880**	100%

** Due to rounding, the total may not equal the sum of component parts.*

DETAILED ANALYSIS BY SECTOR

Each sector in the community inventory consists of multiple subsectors that contribute to the total emissions. **Table A-2** summarizes activity data and GHG emissions for each community sector and subsector. This information shows the individual impact of each activity included in summary **Table A-1**. For example, the residential energy category in **Table A-1** consists of emissions below from residential electricity and residential natural gas. Water is broken into two subsectors: within city and outside city. These two subsectors represent the geographical breakdown of where energy is

used to deliver clean drinking water in Claremont. Electricity used by the City of Claremont to deliver water within city limits is included in "Water – Within City," and electricity used to bring the water from various sources across California to the city is included in "Water – Outside City."

Table A-2: Detailed Activity Data and GHG Emissions

Subsector	Activity Data	Unit	$MTCO_2e$
Residential Electricity	95,449,510	kWh	27,910
Residential Natural Gas	5,948,560	Therms	31,640
Commercial/Industrial Electricity	136,067,710	kWh	39,790
Commercial/Industrial Natural Gas	4,472,570	Therms	23,790
Direct Access Electricity	7,010,850	kWh	2,840
Street & Traffic Lighting	23,521,940	kWh	6,880
On-Road Transportation	307,655,310	VMT	163,720
Waste – Solid Waste	32,290	Tons of Waste	5,940
Waste – Green Waste	7,370	Tons of ADC	1,140
Waste – Transformed	10	Tons Transformed	<10
Off-Road Equipment – Lawn and Garden	11,650	Households	10
Off-Road Equipment – Construction	120	Permits Issued	1,420
Water – Within City	7,940,610	kWh	2,320
Water – Outside City	15,325,780	kWh	4,480
Wastewater	3,419,000	kWh	1,000
Total*			312,880

** Due to rounding, the total may not equal the sum of component parts.*

MUNICIPAL INVENTORY

INVENTORY SUMMARY

Operations and activities by the City of Claremont in 2006 resulted in approximately 2,590 $MTCO_2e$. **Figure A-2** and **Table A-3** depict the contribution of each activity to total 2006 baseline emissions. Fleet fuel use was the most significant municipal sector, contributing 39% of emissions. Building energy use followed closely behind fleet with its 870 $MTCO_2e$ making up 34% of emissions. Public lighting was responsible for 15% of emissions and employee commute for 12%. The smallest sector in the municipal baseline was government-generated solid waste, making up <1% of total emissions.

Figure A-2: Municipal GHG Emissions by Sector

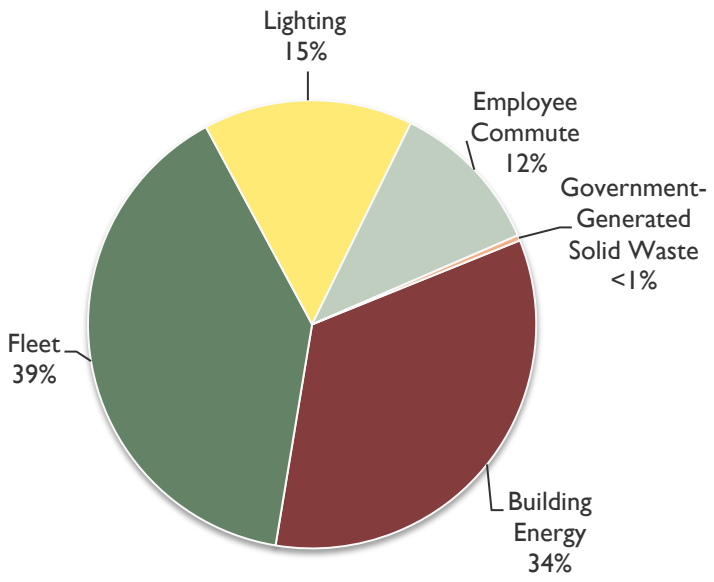


Table A-3: Municipal GHG Emissions by Sector

Sector	$MTCO_2e$	Percentage of Total
Building Energy	870	34%
Fleet	1,020	39%
Lighting	390	15%
Employee Commute	300	12%
Government-Generated Solid Waste	10	<1%
Total*	**2,590**	100%

** Due to rounding, the total may not equal the sum of component parts.*

DETAILED ANALYSIS BY SECTOR

Much like the community inventory, the municipal inventory has multiple subsectors that are included in each sector reported in **Table A-3**. Detailed activity data for each municipal subsector and its individual contribution to GHG emissions are shown in **Table A-4**.

Table A-4: Detailed Municipal Activity Data and GHG Emissions

Subsector	Activity Data	Unit	$MTCO_2e$
Buildings – Electricity	2,251,510	kWh	660
Buildings – Natural Gas	39,510	Therms	210

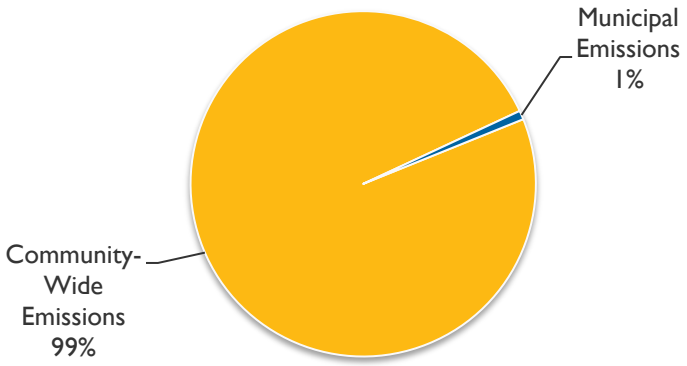
Subsector	Activity Data	Unit	$MTCO_2e$
Fleet – Gasoline	46,140	Gallons	430
Fleet – Diesel	31,400	Gallons	340
Fleet – CNG	47,580	Therms	250
Lighting – Streetlights	562,310	kWh	160
Lighting – Traffic Lights	84,590	kWh	20
Lighting – SCE-Owned Streetlights	489,330	kWh	140
Lighting – Other Public Lights	235,630	kWh	70
Employee Commute	844,740	VMT	300
Government-Generated Solid Waste	50	Tons	10
Total*			2,590

** Due to rounding, the total may not equal the sum of component parts.*

RELATION TO COMMUNITY-WIDE INVENTORY

Municipal emissions account for approximately 1% of community-wide emissions, as shown in **Figure A-3**. Municipal GHG emissions are considered a subset of community-wide GHG emissions since the majority of municipal activities occur within the boundaries of Claremont. This means that all municipal operations are included in the commercial, industrial, transportation, waste, or other categories of this community-wide inventory as applicable. For example, electricity use by City buildings is part of the community-wide commercial energy sector. Similar to the way in which businesses and factories perform their own facility-scale GHG inventories, the City municipal operations emissions inventory analyzes municipal emissions in more detail in order to help the City assess and identify its major sources of GHGs. **Figure A-3** is intended for informational purposes and to show the relative scale of municipal and community-wide emissions.

Figure A-3: Municipal and Community GHG Emissions



Summary of Changes from CTG Energetics Inventory

Table A-5 summarizes the major differences in methods between the existing CTG inventory and the 2006 baseline inventories reported in the previous sections. The sector with the greatest change in GHG emissions due to the revised methods was employee commute, which decreased 37% from 474 $MTCO_2e$ to 300 $MTCO_2e$. Municipal fleet also saw significant changes in emissions with a 22% drop in emissions. Community energy, municipal energy, and on-road transportation had increases in GHG emissions ranging from 1% to 12%. In summary, inventory updates resulted in a 12% increase to the community-wide CTG inventory and a 19% decrease to the municipal inventory.

Table A-5: Changes from Existing CTG GHG Inventory

Sector	Existing Inventory	Updated Approach	Reason for Update	Percentage Change with Update
Community Energy	Estimated energy use based on statewide trends	Energy use based on data from SCE and The Gas Company	Greater accuracy and consistency with regional EAP approach	12%
On-Road Transportation	Estimated using countywide VMT	VMT analysis using 2003 SCAG model with "through trips" removed.	Greater accuracy and consistency with regional EAP approach	1%
Community Solid Waste	Not included	Disposal based on state database and emissions analysis from CARB recommendations	Greater accuracy and consistency with regional EAP approach	Not Applicable
Community Off-Road Equipment	Not included	Analysis based on regional characteristics and countywide off-road equipment emissions	Greater accuracy and consistency with regional EAP approach	Not Applicable
Municipal Fleet	Emissions factors from the LGOP v1.0	Updated emissions factors from the LGOP v1.1	Greater accuracy and consistency with State-recommended protocol	-22%
Municipal Energy	Estimated using state trends and local building characteristics	Energy use billing data from SCE and The Gas Company	Greater accuracy and consistency with State-recommended protocol	6%
Employee Commute	Survey utilizing assumed commute and vehicle characteristics	Survey of employee specific commute and vehicle trends	Greater accuracy and consistency with regional EAP approach	-37%

2010 EMISSIONS ASSESSMENT

Activity data for 2010 was available for many community and several municipal sectors, including energy, on-road transportation, solid waste, off-road equipment, wastewater, and water. This information has been translated into GHG emissions for Claremont and all other participating cities. This common inventory year will serve as a shared platform that will allow activities from all participating cities in the San Gabriel Valley to be compared accurately. The 2010

interim inventory will also help cities track the GHG and energy reductions from programs implemented since the baseline year. **Table A-6** summarizes activity data and emissions for both 2006 and 2010, and outlines the 4% decrease in total emissions.

Decreases in both activity data and $MTCO_2e$ were seen in residential electricity, commercial/industrial electricity, direct access electricity, and all subsectors of waste, water, and wastewater. Construction off-road equipment saw a 67% decline in permits issued but saw a 5% increase in emissions. The model created by CARB to estimate off-road equipment emissions does not have the capability to incorporate the household construction slowdown reflected by census household statistics in 2010.

Table A-6: Baseline and 2010 Community Activity Data and Emissions

Sector	2006 Activity Data	2010 Activity Data	Percentage Change 2006–2010	Unit	2006 $MTCO_2e$	2010 $MTCO_2e$	Percentage Change 2006–2010
Residential Electricity	95,449,510	88,052,830	-8%	kWh	27,910	25,350	-9%
Residential Natural Gas	5,948,560	5,999,780	1%	Therms	31,640	31,920	1%
Commercial/Industrial Electricity	136,067,710	132,033,950	-3%	kWh	39,790	38,010	-4%
Commercial/Industrial Natural Gas	4,472,570	4,502,840	1%	Therms	23,790	23,950	1%
Direct Access Electricity	7,010,850	3,803,450	-46%	kWh	2,840	1,590	-44%
Street & Traffic Lighting	23,521,940	23,894,602	2%	kWh	6,880	6,880	0%
On-Road Transportation	307,655,310	311,659,770	1%	VMT	163,720	161,330	-1%
Waste – Solid Waste	32,290	22,540	-30%	Tons of Waste	5,940	4,190	-29%
Waste – Green Waste	7,370	110	-99%	Tons of ADC	1,140	20	-98%
Waste – Transformed	10	0	-100%	Tons Transformed	<10	0	-100%
Off-Road Equipment – Lawn and Garden	11,650	11,610	0%	Households	10	10	0%
Off-Road Equipment – Construction	120	40	-67%	Construction Permits Issued	1,420	1,450	5%
Water – Within City	7,940,610	6,558,290	-17%	kWh	2,320	1,890	-19%
Water – Outside City	15,325,780	14,636,010	-5%	kWh	4,480	4,210	-6%
Wastewater	3,419,000	3,265,000	-5%	kWh	1,000	940	-6%
Total*					**312,880**	**301,740**	**-4%**

** Due to rounding, the total may not equal the sum of component parts.*

Table A-7 shows the changes in activity data and emissions for the municipal inventory from 2006 to 2010. Sectors without updated 2010 activity data include fleet gasoline and diesel fuel use and government-generated solid waste. CNG fleet fuel use was reflected in data requests from the Southern California Gas Company. It is likely that the increase in CNG fuel use in 2010 offset either gasoline or diesel used. However, without updated 2010 information on gasoline and diesel use from the City, the real effects of this change in fuel use are not properly reflected below.

Table A-7: Baseline and 2010 Municipal Activity Data and Emissions

Sector	2006 Activity Data	2010 Activity Data	Percentage Change 2006–2010	Unit	2006 $MTCO_2e$	2010 $MTCO_2e$	Percentage Change 2006–2010
Buildings – Electricity	2,251,510	2,181,560	-3%	kWh	660	630	-5%
Buildings – Natural Gas	39,510	35,650	-10%	Therms	210	190	-10%
Fleet – Gasoline**	46,140	46,140	0%	Gallons	430	430	0%
Fleet – Diesel**	31,400	31,400	0%	Gallons	340	340	0%
Fleet – CNG	47,580	111,030	133%	Therms	250	590	136%
Lighting – Streetlights	562,310	652,620	16%	kWh	160	190	19%
Lighting – Traffic Lights	84,590	127,860	51%	kWh	20	40	100%
Lighting – SCE-Owned Streetlights	489,330	495,440	1%	kWh	140	140	0%
Lighting – Other Public Lights	235,630	160,410	-32%	kWh	70	50	-29%
Employee Commute	844,740	760,030	-10%	VMT	300	260	-13%
Government-Generated Solid Waste**	50	50	0%	Tons	10	10	0%
Total*					**2,590**	**2,870**	**11%**

** Due to rounding, the total may not equal the sum of component parts.*
*** Activity data was not available at the time of this report. Baseline information is used as a proxy.*

Business-as-Usual Forecast

A business-as-usual (BAU) forecast is an estimate of how GHG emissions will grow over time, without influence from state, regional, and local reduction efforts. This BAU emissions forecast assumes 2006 energy consumption, waste disposal, and energy efficiency rates and focuses on two target years: 2020 and 2035. The 2020 target year is estimated for consistency with AB 32 targets and 2035 is studied for consistency with the Senate Bill 375 horizon.

COMMUNITY BAU INDICATORS

Table A-8 below lists the various growth indicators and sources used in the forecasting of Claremont's community-wide emissions. All indicators for 2020 and 2035, except those used for transportation and baseline jobs, are from the

Southern California Association of Government (SCAG) Proposed Final 2012 Regional Transportation Plan (RTP). Baseline jobs are estimated using the 2003 SCAG RTP projections using a compounding annual growth rate (CAGR). Residential energy use is tied to the number of households within city limits for the target years. Similarly, commercial and industrial energy use emissions are assumed to grow with the number of jobs. Growth in waste emissions is based on the total service population of Claremont as this includes projected residential, commercial, and industrial growth.

Fehr & Peers Transportation Consultants used SCAG's 2003 RTP travel model to forecast the growth in VMT. Fehr & Peers compared population, household, and jobs forecasts from the 2003 RTP model with comparable data sources to confirm the accuracy of the VMT forecasts. After analysis against the 2010 census, the 2003 RTP travel model forecasts for Claremont were discovered to be far beyond Fehr & Peers' 5% adjustment margin of error. To correct this, the model's baseline (2003) and forecast (2035) years' VMT were decreased by 7.1% and 5.6%, respectively. Using the 2003 RTP travel model, Fehr & Peers calculated VMT for 2003 and 2035, and estimated VMT for 2010 and 2020. Daily VMT is converted into annual VMT using a factor recommended by Fehr & Peers of 347 days per year. This adjusted yearly factor incorporates differences in driving patterns on weekends and weekdays. In order to calculate data for the City's baseline year and 2010, annual VMT was interpolated using the CAGR from 2003 to 2035. For consistency with the 2006 calculation, VMT for 2010 and 2020 were recalculated using the CAGR.

Table A-8: BAU Growth Indicators and Affected Sectors

Growth Indicator	Emissions Sector	2006	2010	2020	2035	Sources
Jobs	Commercial/ Industrial Energy	18,470	18,300	19,400	20,600	2010 Census, SCAG 2012 & 2003 RTP
Service Population (Residents + Jobs)	Solid Waste, Water, Wastewater	55,040	53,230	55,500	58,500	2010 Census, SCAG 2012 RTP
Households	Residential Energy, Off-Road Equipment	11,650	11,610	12,100	12,600	2010 Census, SCAG 2012 RTP
Annual VMT	On-Road Transportation	307,655,310	311,659,840	321,900,600	337,896,110	Fehr & Peers Transportation Consultants, SCAG 2003 RTP

COMMUNITY BUSINESS-AS-USUAL FORECAST

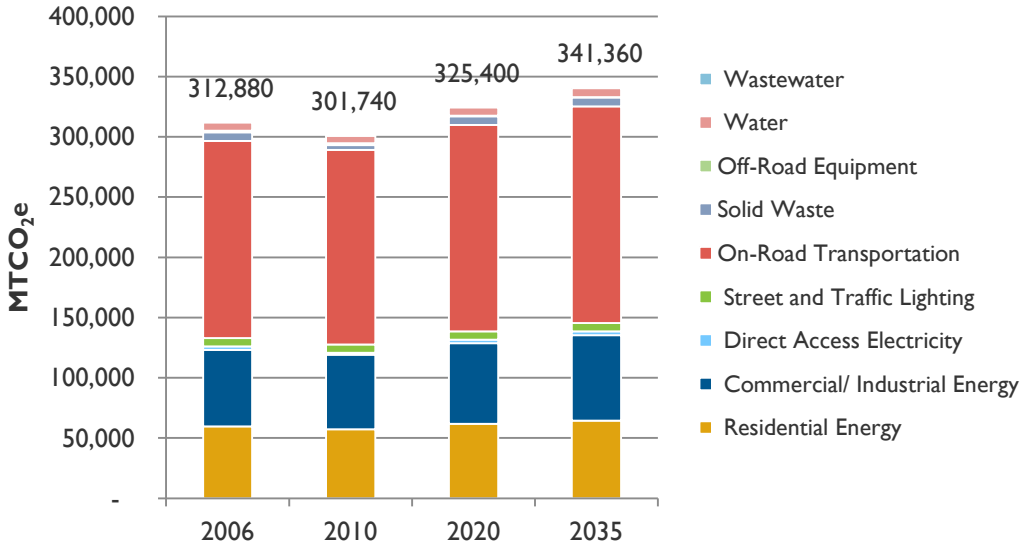
Table A-9 and **Figure A-4** summarize the growth forecast of GHG emissions by activity sector without any actions or policies in place to reduce GHG emissions. Under the BAU growth scenario, emissions are estimated to grow by 4% in 2020 to 325,400 $MTCO_2e$ and by 9% from baseline to 341,450 $MTCO_2e$ in 2035. Emissions were forecast from baseline levels for all sectors.

Table A-9: Community BAU Emissions by Sector

Sector	2006 $MTCO_2e$	2010 $MTCO_2e$	2020 $MTCO_2e$	2035 $MTCO_2e$
Residential Energy	59,550	57,270	61,850	64,410
Commercial/Industrial Energy	63,580	61,960	66,780	70,910
Direct Access Electricity	2,840	1,590	2,980	3,170
Street & Traffic Lighting	6,880	6,880	6,880	6,880
On-Road Transportation	163,720	161,330	171,300	179,810
Solid Waste	7,080	4,210	7,140	7,520
Off-Road Equipment	1,430	1,460	600	370
Water	6,800	6,100	6,860	7,320
Wastewater	1,000	940	1,010	1,060
Total*	312,880	301,740	325,400	341,360
Percentage Change from 2006	-	-4%	4%	9%

** Due to rounding, the total may not equal the sum of component parts.*

Figure A-4: Community BAU Emissions by Sector



MUNICIPAL BUSINESS-AS-USUAL FORECAST

As shown in **Table A-10** and **Figure A-5**, which outline the municipal BAU forecast, the City is expected to have static growth from 2010 through 2035. In other words, 2020 and 2035 emissions are forecasted to be the same as 2010 emissions. This no-growth scenario is based on the City's lack of large and solidified plans for expansion of municipal

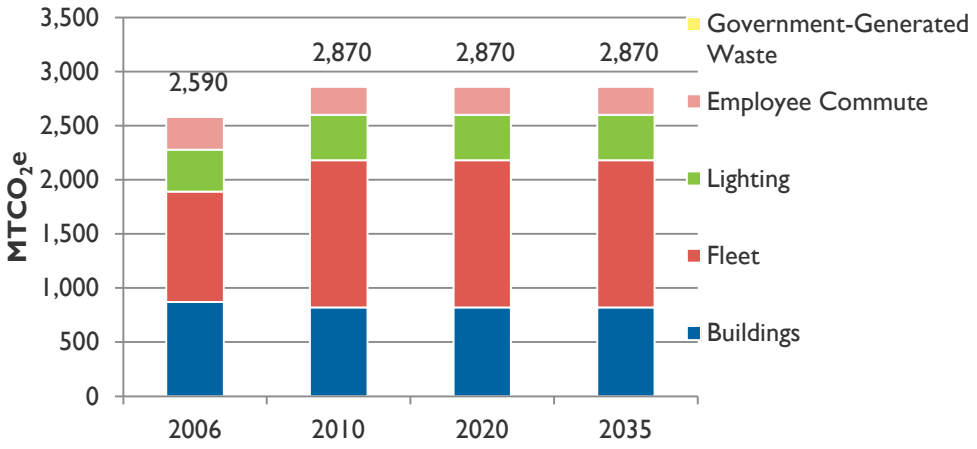
services. Emissions are expected to remain at 2010 levels, and not baseline, because the growth seen in that year is from updated activity data sources and reflects the most current GHG emissions profile of the city.

Table A-10: Municipal BAU Emissions by Sector

Sector	2006 $MTCO_2e$	2010 $MTCO_2e$	2020 $MTCO_2e$	2035 $MTCO_2e$
Building Energy Use	870	820	820	820
Fleet	1,020	1,360	1,360	1,360
Lighting	390	420	420	420
Employee Commute	300	260	260	260
Government-Generated Solid Waste	10	10	10	10
Total*	**2,590**	**2,870**	**2,870**	**2,870**
Percentage Change from 2006	-	**11%**	**11%**	**11%**

** Due to rounding, the total may not equal the sum of component parts.*

Figure A-5: Municipal BAU Emissions by Sector



STATE-ADJUSTED FORECAST

State Reduction Programs

The State has been a proactive force in reducing GHG emissions. Regulations affecting vehicle standards, building standards, and the renewable energy content of electricity will reduce GHG levels in the city. The state actions summarized below are incorporated into the BAU forecast to create a more realistic estimate of Claremont's future emissions.

Assembly Bill 1493 (Pavley). Signed into law in 2002, AB 1493 requires carmakers to reduce GHG emissions from new passenger cars and light trucks beginning in 2011. Regulations were adopted by CARB in 2004 and took effect in 2009 with the release of a waiver from the US Environmental Protection Agency granting California the right to implement the bill. CARB anticipates that the Pavley standards will reduce GHG emissions from California passenger vehicles by about 22% in 2012 and by about 30% in 2016, all while improving fuel efficiency and reducing motorists' costs.[2] The car industry is well on its way to meeting these efficiency targets.

Renewables Portfolio Standard. Established in 2002 in Senate Bill 1078, the Renewables Portfolio Standard (RPS) targets utility providers to increase the portion of energy that comes from renewable sources to 20% by 2010 and to 33% by 2020. A June 2009 report from the California Public Utilities Commission indicated that it is unlikely that the state and its investor-owned utilities will be able to reach the RPS goal of 33% by 2020; according to state assessments, the forecast assumes that energy providers will achieve a 28% renewable portfolio by 2020.[3]

California Building Code Title 24. Title 24 of the California Code of Regulations mandates how each new home and business is built in California. It includes requirements for the structural, plumbing, electrical, and mechanical systems of buildings and for fire and life safety, energy conservation, green design, and accessibility in and around buildings. The 2010 triennial edition of Title 24 pertains to all occupancies that applied for a building permit on or after January 1, 2011, and remains in effect until the effective date of the 2013 triennial edition. This Inventory focuses on two sections of Title 24: Part 6 (the California Energy Code) and Part 11 (the California Green Building Standards Code). These two sections require direct electricity, natural gas, and water savings for every new home or business built in California. Title 24 is a statewide standard applied at the local level by local agencies through project review.

This Inventory incorporates the net energy benefit of new Title 24 requirements that did not exist in the baseline year. These estimates are based on California Energy Commission studies that compare each new update of Title 24 to its former version. The AB 32 Scoping Plan calls for ongoing triennial updates to Title 24 that yield regular increases in mandatory energy and water savings for new construction. As such, the GHG forecast also includes a conservative estimate of the energy and water reductions due to future updates of Title 24 based on historic growth rates. The energy reductions quantified in the forecast from Part 6 Energy Code updates are based on the assumption that the triennial updates to the code will yield regular decreases in the maximum allowable amount of energy used from new construction.

Low Carbon Fuel Standard. The Low Carbon Fuel Standard (LCFS) calls for CARB to achieve a reduction of at least 10% in the carbon intensity of California's transportation fuels by 2020. A preliminary injunction was issued in December 2011, which required implementation of the LCFS to be put on hold. CARB is currently appealing the decision. Until the legal standing of the program has been resolved, the LCFS will not be considered in the adjusted business-as-usual (ABAU) forecast.

California Solar Initiative. The California Solar Initiative (CSI) is a state program that provides cash rebates for the installation of an electric solar panel system. In order to qualify, the customer must buy electricity from one of California's three investor-owned utilities (Southern California Edison, Pacific Gas and Electric, or San Diego Gas & Electric).

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[2] California Air Resources Board 2010.

[3] California Public Utilities Commission 2009.

Community ABAU Forecast

All of the state programs highlighted above are included in the community-wide ABAU forecast. As shown in **Table A-11** and **Figure A-5,** these state reduction efforts are anticipated to reduce emissions by 39,170 $MTCO_2e$ in 2020 and 62,650 $MTCO_2e$ in 2035. The majority of these reductions are from the Pavley standards and the RPS. In comparison to the BAU scenario, **Table A-12** shows 2020 emissions with state reduction measures are 9% below baseline 2006 levels rather than 4% above. Similarly, 2035 emissions go from 9% above baseline levels to 11% below after state efforts are taken into account.

Table A-11: Impact of State Policies on Community GHG Emissions

State Reductions Summary	2020 $MTCO_2e$	2035 $MTCO_2e$
Pavley Reductions	-26,440	-41,590
RPS Reductions	-10,530	-17,570
CA Building Code Reductions	-1,270	-2,640
CSI Reductions	-930	-850
Total State Reductions*	**-39,170**	**-62,650**

**Due to rounding, the total may not equal the sum of component parts.*

Table A-12: Comparison of Community BAU and ABAU Forecast

State Reductions Summary	2006 $MTCO_2e$	2010 $MTCO_2e$	2020 $MTCO_2e$	2035 $MTCO_2e$
Growth Projection	312,880	301,740	325,400	341,450
Total State Reductions	–	–	-39,170	-62,650
Adjusted BAU Forecast (2020, 2035)*	312,880	301,740	286,230	278,800
Percentage Change from 2006	–	-4%	-9%	-11%

**Due to rounding, the total may not equal the sum of component parts.*

State reductions from baseline and 2010 were not quantified because the effects of those programs are already reflected in the activity data collected. For example, the efforts to increase the amount of clean energy in electricity through RPS are already captured in the emissions coefficients used to translate electricity use into $MTCO_2e$.

Municipal ABAU Forecast

Only certain state reduction programs affect the municipal BAU forecast. These include the RPS and the Pavley standards. Updates to the California Building Code Standards such as Title 24 are not quantified since the City has no solid plans to construct new buildings. The CSI is not quantified since the program is regional and the methods used in the community ABAU forecast cannot be replicated in the municipal ABAU forecast. **Table A-13** shows the effect of the included state reduction efforts, and **Table A-14** shows how this changes the BAU emissions. Emissions are reduced by 280 $MTCO_2e$ in 2020 and by 460 $MTCO_2e$ in 2035. These reductions are from the RPS and the Pavley standards. With state reduction measures, 2020 emissions reach baseline levels instead of 11% above in the BAU scenario. Similarly, 2035 emissions go from 11% above baseline to 7% below after state efforts are taken into account.

Table A-13: Impact of State Policies on Municipal GHG Emissions

State Reductions Summary	2020 $MTCO_2e$	2035 $MTCO_2e$
Pavley Reductions	-160	-250
RPS Reductions	-120	-210
CA Building Code Reductions	0	0
CSI Reductions	0	0
Total State Reductions*	**-280**	**-460**

**Due to rounding, the total may not equal the sum of component parts.*

Table A-14: Comparison of Municipal BAU and ABAU Forecast

State Reductions Summary	2006 $MTCO_2e$	2010 $MTCO_2e$	2020 $MTCO_2e$	2035 $MTCO_2e$
Growth Projection	2,590	2,870	2,870	2,870
Total State Reductions	-	-	-280	-460
Adjusted BAU Forecast (2020, 2035)*	2,590	2,870	2,590	2,410
Percentage Change from 2006	-	11%	0%	-7%

**Due to rounding, the total may not equal the sum of component parts.*

All electricity reductions that the City has achieved since the baseline year through major energy efficiency retrofits or other programs will be quantified in the Energy Action Plan.

Summary of Changes from CTG Energetics Inventory Forecast

There are two primary differences between the CTG ABAU forecast and the updated community ABAU forecast: (1) assumptions for RPS implementation, and (2) and vehicle emissions standards. In the CTG ABAU community forecast, calculations assume that SCE would generate 33% of its electricity from renewable sources in 2020, consistent with the goals set out in the RPS. Based on actual RPS implementation to date, the inventory forecast update assumes an incomplete implementation of the RPS. Technological and political challenges may prevent some investor-owned utilities from meeting the 33% target by 2020. The California Public Utilities Commission, the agency responsible for regulating and tracking the progress of the RPS, reported that 18% of California's electricity came from renewable sources in 2010, missing the 20% interim goal by 2%. California utilities have more than enough renewable electricity under consideration to meet the 33% target by 2020; however, due to contract and transmission limitations, not all of this new electricity will be available soon enough to meet the 2020 target.[4] It is for these reasons that the RPS assumptions in the community ABAU forecast were modified.

In the CTG forecast, reductions to on-road transportation emissions were contributed to federal Corporate Average Fuel Economy (CAFE) standards through improvements in vehicle fuel efficiency standards. This update includes the impact of California-specific reductions from the Pavley standards instead of CAFE standards to better reflect

[4] http://www.cpuc.ca.gov/NR/rdonlyres/2A2D457A-CD21-46B3-A2D7-757A36CA20B3/0/Q3RPSReporttotheLegislatureFINAL.pdf

California's regulatory climate. The Pavley standards are facilitating a greater reduction in fuel use and GHG emissions from passenger vehicles than will be achieved through the CAFE standards. For example, the average fuel efficiency of a vehicle in 2020 under the CAFE standards will be 35 miles per gallon whereas a vehicle following the Pavley standards will be rated at 43 miles per gallon.[5]

REDUCTION TARGETS

The next step for the City is to determine energy reduction targets for 2020 and 2035. The new energy reduction targets will be the goal of the EAP and a quantitative way of measuring the plan's success. The EAP's energy reduction targets will set the groundwork for any GHG reduction targets found in a future climate action plan.

STATE-RECOMMENDED 2020 AND 2035 REDUCTION TARGETS

While the state reductions represent a significant decrease in emissions, AB 32 recommends that local governments adopt a GHG reduction target of 15% below baseline (2005–2008) levels by 2020. The State has not adopted GHG reduction targets beyond 2020; however, in 2005, then-Governor Schwarzenegger signed Executive Order S-3-05, which created a goal to reduce GHG emissions to 1990 levels by 2020 and to 80% below 1990 levels by 2050. While not legislatively mandated, it is anticipated that the State will adopt targets similar to those included in Executive Order S-3-05 after the State's achievement of the 2020 target can be better evaluated.

As shown in **Table A-15**, the City would need to facilitate an additional 7% reduction in community-wide emissions to meet the AB 32 Scoping Plan GHG reduction goal for 2020. In GHG emissions, this 7% reduction translates to a reduction of 20,300 $MTCO_2e$ below ABAU emissions in 2020. Similarly, to be on a trajectory toward the Executive Order S-3-05 target for 2050, the City would need to reduce community-wide emissions 49%, or 137,970 $MTCO_2e$, by 2035.

Table A-15: Community GHG Emissions and State-Recommended Reduction Targets

	2020	2035
State-Recommended Reduction Targets (percent below baseline)	15%	55%
State-Recommended Emissions Goal ($MTCO_2e$)	265,950	140,800
ABAU Forecast with State Reductions ($MTCO_2e$)	286,230	278,710
Local Reduction Needed from Adjusted BAU ($MTCO_2e$)	20,280	137,910

The State-recommended reduction targets for community-wide GHG emissions can also be applied to municipal operations. **Table A-16** outlines the State-recommended reduction targets and necessary further reductions the City would need to facilitate in order to meet the recommended goals for 2020 and 2035. Municipal emissions in Claremont are forecast to reach 390 $MTCO_2e$ below the State-recommended reduction targets for 2020. It is important to remember, however, that state reduction programs are not guaranteed to be fully implemented, much like the LCFS. Local action by City facility and fleet managers is the best way to guarantee a 15% reduction below baseline levels in 2020.

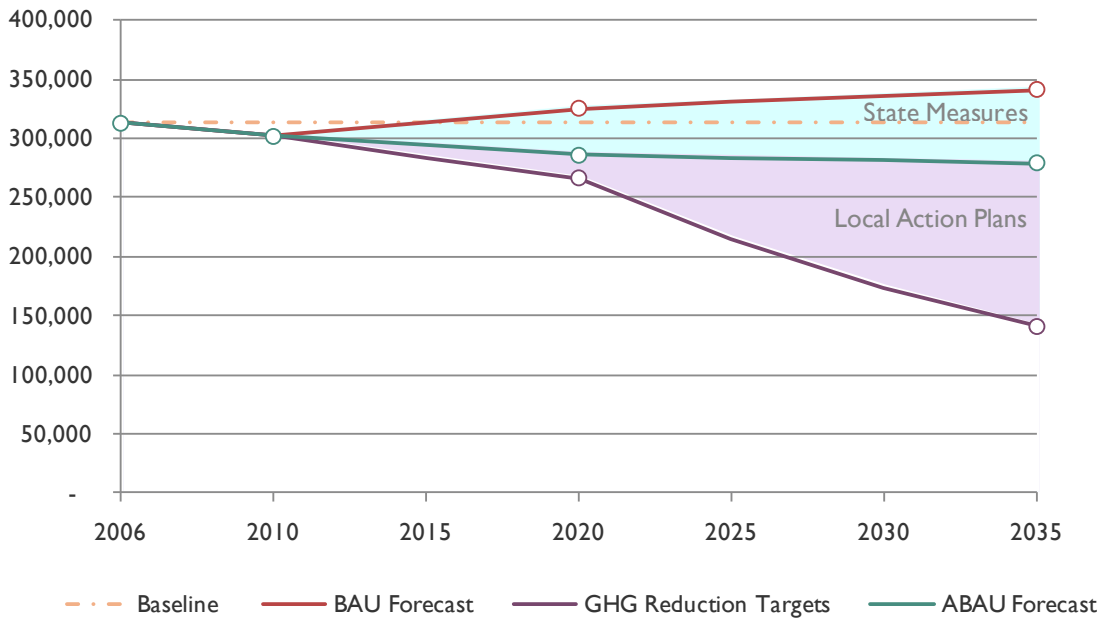
[5] http://www.arb.ca.gov/cc/ccms/reports/pavleycafe_reportfeb25_08.pdf

Table A-16: Municipal GHG Emissions and State-Recommended Reduction Targets

	2020	2035
State-Recommended Reduction Targets (percent below baseline)	15%	55%
State-Recommended Emissions Goal ($MTCO_2e$)	2,200	1,170
ABAU Forecast with State Reductions ($MTCO_2e$)	2,590	2,410
Local Reduction Needed from Adjusted BAU ($MTCO_2e$)	**-390**	**-1,240**

Figure A-6 shows the City's BAU and ABAU forecasts in relation to baseline and recommended 2020 and 2035 reduction targets. The blue shaded area represents the reductions Claremont is estimated to see through state GHG reduction programs such as the RPS and CSI. The purple section shows the GHG reductions that fall under local jurisdictions. The intent of the Energy Action Plan, and all future GHG reduction plans, is to close the gap represented by the purple area through energy efficiency projects and GHG reduction efforts.

Figure A-6: GHG Forecast and State-Recommended Reduction Target Summary



Conclusion and Next Steps

The community and municipal inventories are important milestones for assessing and mitigating the City of Claremont's impact on climate change from the activities of people, businesses, and industry. The Inventory also provides data that will shape the development of the EAP by providing a justifiable basis for the City's analysis of its impact on climate change. The next step will be for the City to review and confirm Inventory findings and determine how the community will achieve the desired 2020 GHG reduction target through development of the Energy Action Plan.

APPENDIX B

GREENHOUSE GAS REDUCTIONS REPORT

This technical appendix provides a summary of the data sources, assumptions, and performance metrics utilized in this Energy Action Plan (EAP) to quantify the estimated kilowatt-hours (kWh) savings, greenhouse gas (GHG) reductions, and costs. The sources and metrics are organized by policy and rely on four primary types of data and research: (1) Claremont's GHG emissions inventory and forecast, (2) government agency tools and reports, (3) case studies in similar jurisdictions, and (4) scholarly research.

The baseline GHG inventory and forecast serve as the foundation for quantifying the City's GHG reduction measures. Activity data from the inventory, e.g., vehicle miles traveled and kWh of electricity, is combined with the performance targets and indicators identified in this Plan to calculate the reduction benefit of each measure. This approach ensures that the City's kWh savings and GHG reductions are tied to the baseline and future activities that are actually occurring in Claremont.

Whenever possible, emissions reduction estimates are based on tools and reports provided by government agencies such as the US Environmental Protection Agency, California Environmental Protection Agency, California Energy Commission, California Air Resources Board, California Air Pollution Control Officers Association, and local air districts. If accurate reduction estimates are not available through these tools, a case study may be used if the case study is comparable to the conditions in the city. Finally, for reduction measures that lack actual on-the-ground testing or analysis, current scholarly and peer-reviewed research is combined with knowledge of existing city practices to create an estimate of potential kWh and GHG reductions.

Table B-1 outlines the sources of activity data for the community-wide GHG inventory, and **Table B-2** shows the sources for municipal inventory activity data. **Table B-3** and **Table B-4** list the specific emission coefficients used for each piece of activity data and GHG emissions as shown in **Appendix A** as well as those used in the quantification presented below in **Table B-5**.

Table B-1: Sources for Community Inventory Activity Data

Subsector	Source
Residential Electricity	Southern California Edison
Residential Natural Gas	Southern California Gas Company
Commercial/Industrial Electricity	Southern California Edison
Commercial/Industrial Natural Gas	Southern California Gas Company
Direct Access Electricity	Southern California Edison
Street & Traffic Lighting	Southern California Edison
On-Road Transportation	Fehr & Peers Transportation Consultants; SCAG 2003 RTP
Waste – Solid Waste	CalRecycle online Disposal Reporting System
Waste – Green Waste	CalRecycle online Disposal Reporting System
Waste – Transformed	CalRecycle online Disposal Reporting System
Off-Road Equipment	California Air Resources Board's OFFROAD2007 model
Water	PMC's San Gabriel Valley Regional Water Model
Wastewater	PMC's San Gabriel Valley Regional Water Model

Table B-2: Sources for Municipal Inventory Activity Data

Subsector	Source
Buildings – Electricity	Southern California Edison
Buildings – Natural Gas	Southern California Gas Company
Fleet Fuel Use	City records
Public Lighting Electricity	Southern California Edison
Employee Commute	City survey completed by City employees
Government-Generated Solid Waste	City records

Table B-3: Baseline Emissions Factors and Sources, 2006

Subsector	Original Emissions Factor		Source	Final Emissions Factor	
SCE Electricity	641.26	lbs CO_2/MWh	LGOP v1.1, Table G.6	0.00029	$MTCO_2e$/kWh
	0.031	lbs CH_4/MWh	LGOP v1.1, Table G.7		
	0.009	lbs N_2O/MWh	LGOP v1.1, Table G.7		
Direct Access Electricity	889.75	lbs CO_2/MWh	LGOP v1.1, Table G.7	0.00041	$MTCO_2e$/kWh
	0.031	lbs CH_4/MWh	LGOP v1.1, Table G.7		
	0.009	lbs N_2O/MWh	LGOP v1.1, Table G.7		
SoCal Gas – Natural Gas	53.06	kg CO_2/MMBtu	LGOP v1.1, Table G.1	0.00532	$MTCO_2e$/therm
	0.005	kg CH_4/MMBtu	LGOP v1.1, Table G.3		
	0.0001	kg N_2O/MMBtu	LGOP v1.1, Table G.3		
Stationary Diesel	10.21	lbs CO_2/gallon	LGOP v1.1, Table G.1	0.01027	$MTCO_2e$/gallon
	0.0015	lbs CH_4/gallon	LGOP v1.1, Table G.4		
	0.0001	lbs N_2O/gallon	LGOP v1.1, Table G.4		
Fleet Gasoline	8.78	kg CO_2/gallon	LGOP v1.1, Table G.11	0.00878	$MTCO_2$/gallon
	.0107 – .4090	g CH_4/mile*	LGOP v1.1, Table G.12	.0107 – .4090	g CH_4/mile*
	.0038 – .1726	g N_2O/mile*	LGOP v1.1, Table G.12	.0038 – .1726	g N_2O/mile*
Fleet Diesel	10.21	kg CO_2/gallon	LGOP v1.1, Table G.11	0.01021	$MTCO_2$/gallon
	.0005 – .0051	g CH_4/mile*	LGOP v1.1, Table G.12	.0005 – .0051	g CH_4/mile*
	.0012 – .0048	g N_2O/mile*	LGOP v1.1, Table G.12	.0012 – .0048	g N_2O/mile*
Fleet CNG	0.054	kg CO_2/scf	LGOP v1.1, Table G.11	0.000054	$MTCO_2$/scf
	0.737	g CH_4/mile	LGOP v1.1, Table G.13	0.000031	$MTCO_2e$/mile
	0.05	g N_2O/mile	LGOP v1.1, Table G.13		
Fleet LPG	5.59	kg CO_2/gallon	LGOP v1.1, Table G.11	0.00559	$MTCO_2$/gallon
	0.037	g CH_4/mile	LGOP v1.1, Table G.13	0.000022	$MTCO_2e$/mile
	0.067	g N_2O/mile	LGOP v1.1, Table G.13		
On-Road Transportation	505.5	g CO_2/mile	EMFAC 2011	0.00053	$MTCO_2e$/mile
	1.05	CO_2e/CO_2	Fehr & Peers Transportation Consultants		
Off-Road Construction	825	tons CO_2/day in LA County	OFFROAD2007	273,900	$MTCO_2e$/year in LA County
	0.0989	tons CH_4/day in LA County	OFFROAD2007		
	0.0007	tons N_2O/day in LA County	OFFROAD2007		
Off-Road Lawn and Garden	8.03	tons CO_2/day in LA County	OFFROAD2007	3,410	$MTCO_2e$/year in LA County
	0.0148	tons CH_4/day in LA County	OFFROAD2007		
	0.0063	tons N_2O/day in LA County	OFFROAD2007		

** Dependent on vehicle's model year and size.*

Table B-4: Emissions Factors and Sources, 2010

Subsector	Original Emissions Factor		Source	Final Emissions Factor	
SCE Electricity*	630.89	lbs CO_2/MWh	LGOP v1.1, Table G.6	0.00029	$MTCO_2e$/kWh
	0.029	lbs CH_4/MWh	LGOP v1.1, Table G.7		
	0.01	lbs N_2O/MWh	LGOP v1.1, Table G.7		
Direct Access Electricity*	919.64	lbs CO_2/MWh	LGOP v1.1, Table G.7	0.00042	$MTCO_2e$/kWh
	0.029	lbs CH_4/MWh	LGOP v1.1, Table G.7		
	0.01	lbs N_2O/MWh	LGOP v1.1, Table G.7		
SoCal Gas – Natural Gas	53.06	kg CO_2/MMBtu	LGOP v1.1, Table G.1	0.00532	$MTCO_2e$/therm
	0.005	kg CH_4/MMBtu	LGOP v1.1, Table G.3		
	0.0001	kg N_2O/MMBtu	LGOP v1.1, Table G.3		
Stationary Diesel	10.21	lbs CO_2/gallon	LGOP v1.1, Table G.1	0.01027	$MTCO_2e$/gallon
	0.0015	lbs CH_4/gallon	LGOP v1.1, Table G.4		
	0.0001	lbs N_2O/gallon	LGOP v1.1, Table G.4		
Fleet Gasoline	8.78	kg CO_2/gallon	LGOP v1.1, Table G.11	0.00878	$MTCO_2$/gallon
	.0107 – .4090	g CH_4/mile**	LGOP v1.1, Table G.12	.0107 – .4090	g CH_4/mile**
	.0038 – .1726	g N_2O/mile**	LGOP v1.1, Table G.12	.0038 – .1726	g N_2O/mile**
Fleet Diesel	10.21	kg CO_2/gallon	LGOP v1.1, Table G.11	0.01021	$MTCO_2$/gallon
	.0005 - .0051	g CH_4/mile**	LGOP v1.1, Table G.12	.0005 – .0051	g CH_4/mile**
	.0012 – .0048	g N_2O/mile**	LGOP v1.1, Table G.12	.0012 – .0048	g N_2O/mile**
Fleet CNG	0.054	kg CO_2/scf	LGOP v1.1, Table G.11	0.000054	$MTCO_2$/scf
	0.737	g CH_4/mile	LGOP v1.1, Table G.13	0.000031	$MTCO_2e$/mile
	0.05	g N_2O/mile	LGOP v1.1, Table G.13		
Fleet LPG	5.59	kg CO_2/gallon	LGOP v1.1, Table G.11	0.00559	$MTCO_2$/gallon
	0.037	g CH_4/mile	LGOP v1.1, Table G.13	0.000022	$MTCO_2e$/mile
	0.067	g N_2O/mile	LGOP v1.1, Table G.13		
On-Road Transportation	491.8	g CO_2/mile	EMFAC 2011	0.00052	$MTCO_2e$/mile
	1.05	CO_2e/CO_2	Fehr & Peers Transportation Consultants		
Off-Road Construction	879	tons CO_2/day in LA County	OFFROAD2007	291,660	$MTCO_2e$/year in LA County
	0.0853	tons CH_4/day in LA County	OFFROAD2007		
	0.0007	tons N_2O/day in LA County	OFFROAD2007		
Off-Road Lawn and Garden	8.97	tons CO_2/day in LA County	OFFROAD2007	3,690	$MTCO_2e$/year in LA County
	0.0144	tons CH_4/day in LA County	OFFROAD2007		
	0.0061	tons N_2O/day in LA County	OFFROAD2007		

** 2010 factors not available. 2007 factors used as a proxy.*

*** Dependent on vehicle's model year and size.*

QUANTIFICATION OF GHG AND ELECTRICITY REDUCTIONS

Table B-5: GHG and Electricity Reduction Methods and Sources, 2020

Policy	1.1 Promote household energy conservation by residents in existing structures through small-scale, behavioral changes.
Actions:	• Produce a best practices manual in energy conservation to distribute to the public at City facilities and at continued energy efficiency education outreach events. (SCP 1.1.2) • Provide education for homeowners regarding the importance of home energy retrofits and improved access to high quality home energy audits. (SCP 1.1.1) • Continue to recognize CHERP participants, community members who are leaders in implementing energy conservation and efficiency practices through events, awards, and publications. Considering posting a plaque in City Hall to honor all net-zero homes. • Encourage resident participation in energy-monitoring programs that inform energy use decisions and reduce peak energy demand, such as utility-provided smart meter monitoring programs. (SCP 1.1.7) • Partner with the Claremont Unified School District and educational institutions such as Claremont Graduate University to develop an education program and curriculum for students in energy saving at school and in the community. (SCP goal 1.1) ○ Develop a program to include student groups and community volunteers in organizing and helping in City events, classes, and other services for energy savings.
Implementation Time Frame:	Near-Term
Implementation Department(s):	Human Services
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020.
kWh Reductions (2020):	-572,700 to -1,431,740
$MTCO_2e$ Reductions (2020):	-140 to -360
Assumed Reduction per Participant:	210 kWh
Performance Target(s) (2020):	4,670 participating households
Reduction Method:	Using the Bonneville Power Administration source on behavioral-based energy efficiency programs, a 2–3% reduction per participant was multiplied by the average household kWh use. This figure was multiplied by target participation of 4–5% of city households.
Reduction Sources:	Bonneville Power Administration. 2011. Residential Behavior Based Energy Efficiency Program Profiles 2011. http://www.bpa.gov/Energy/n/pdf/BBEE_Res_Profiles_Dec_2011.pdf.

Policy	1.2 Encourage upgrades to more energy-efficient, cost-saving appliances and equipment.
Actions:	• Continue to support utility-sponsored exchanges for household appliances and equipment, including light bulbs and halogen lights, as well as refrigerators and freezers. Promote existing energy efficiency rebate offerings for appliances, refrigeration units, water heaters and pumps, area HVAC equipment, and lighting fixtures as programs become available, including rebates from the California Energy Commission and the South Coast Air Quality Management District. • Work with regional and utility partners to create a community appliance trade-in rebate program for energy-saving appliance, including rebates from the California Energy Commission and Southern California Edison. • Facilitate home-distributed generation renewable energy installations through fast-tracked and lowered fees on permitting for appliances such as solar water heaters and solar photovoltaic systems (~5.4 kW in size). (SCP 1.1.8 calls for facilitating installation of solar systems citywide) ○ Develop a program to include student groups and community volunteers in organizing and helping in City events, classes, and other services for energy savings.
Implementation Time Frame:	Mid-Term
Implementation Department(s):	Planning Division
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020. • Reduce municipal electricity use 20% by 2015 and 30% by 2020 (SCP). • Additional solar reduction target to be identified by City staff.
kWh Reductions (2020):	-1,164,160 to -2,099,220
$MTCO_2e$ Reductions (2020):	-290 to -520
Assumed Reduction per Participant:	210 kWh per household for efficient appliances, 640 kWh per household for a solar water heater, and 7,890 kWh per household for a PV unit
Performance Target(s) (2020):	3,380 households purchasing new appliances, 40 households installing a solar water heater, and 110 households installing a PV unit
Reduction Method:	Using the California Residential Appliance Saturation Study, the most common appliances and their yearly average electricity use were combined to create a model of how much electricity was used by appliances in Claremont households in 2006. Assumed high and low reductions were then applied with assumed participation rate ranges for single-family and multi-family households. The emission reductions due to photovoltaic installments were calculated using data on the average PV installation size in Claremont from the California Solar Initiative—data that was also used in the original GHG inventory—along with estimations on the number of residents who would install PV. Using data on the amount of energy utilized for hot water in homes from the US Building-Sector Energy Efficiency Potential study, and the average amount of energy produced by solar water heater installations in California, the benefit of installing a solar water heater system was combined with estimates of total household participation to calculate total reductions.

Policy	1.2 Encourage upgrades to more energy-efficient, cost-saving appliances and equipment.
Reduction Sources:	Brown, Rich, Sam Borgeson, Jon Koomey, and Peter Biermayer. 2008. US Building-Sector Energy Efficiency Potential. Ernest Orlando Lawrence Berkeley National Laboratory, University of California. http://enduse.lbl.gov/info/LBNL-1096E.pdf. California Energy Commission and California Public Utilities Commission. 2011. California Solar Initiative: California Solar Statistics - Geographical Statistics. http://www.californiasolarstatistics.ca.gov/reports/locale_stats/. CAPCOA (California Air Pollution Control Officers Association). 2010. Quantifying Greenhouse Gas Mitigation Measures. http://capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf. ICLEI - Local Governments for Sustainability. 2012. Climate and Air Pollution Planning Assistant (CAPPA) Version 1.5.

Policy	1.3 Encourage voluntary residential retrofits in 10% of single-family homes by 2015 and 20% by 2020 to improve the quality of the built environment, increase investment in the building stock, and spur local job creation.
Actions:	• Continue to implement the Claremont Home Energy Retrofit Program (CHERP), and work with the San Gabriel Valley Council of Governments (SGVCOG) to secure additional funding for retrofit incentives. Participate in a revolving loan program that will provide small loans to local homeowners in order to assist them with the cost of energy efficiency improvements. (SCP 1.1.4) • Continue utilizing the Housing Rehabilitation Program to target energy efficiency and "greening" of homes for income-qualified homeowners, leveraging state funding and Community Development Block Grants (CDBG) to improve energy efficiency in the existing housing stock. • Promote the California Energy Savings Assistance Program for income-qualified renters. • Develop an online energy "one-stop shop" to present local and state programs, resources, and educational documents regarding energy efficiency and renewable energy programs. * Utilize CHERP in partnership with local energy technology businesses to facilitate a full-service residential auditing and retrofit program that includes post-audit and retrofit inspections. • Run a quarterly ad in the paper(s) listing all CHERP participants and thanking them for doing their part. The ad should include positive testimonials and statistics. • Continue to provide rebates to cover the cost of home energy audits to anyone who completes some portion of energy efficiency recommendations contained in the audit.
Implementation Time Frame:	Mid-Term
Implementation Department(s):	Planning Division
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 and 30% by 2020.
kWh Reductions (2020):	-2,344,870 to -9,159,650
$MTCO_2e$ Reductions (2020):	-580 to -2,280
Assumed Reduction per Participant:	2,710 kWh per single-family retrofit
Performance Target(s) (2020):	2,020 participating single-family households

Policy	**1.3 Encourage voluntary residential retrofits in 10% of single-family homes by 2015 and 20% by 2020 to improve the quality of the built environment, increase investment in the building stock, and spur local job creation.**
Reduction Method:	Using electricity use from the Claremont inventory and forecast, the number of households reported by the California Department of Finance, and the 2010 US Census, an average electricity use per occupied household was created for the baseline year. High and low reductions from Los Angeles County Energy Upgrade California projects were multiplied by assumed participation rate ranges.
Reduction Sources:	Building Doctors. 2011. Los Angeles CA Home Energy Performance Assessment. Residential Energy Assessment Services (REAS), Inc. 2011. Encino CA Home Energy Assessment. Residential Energy Assessment Services (REAS), Inc. 2011. San Fernando CA Home Energy Performance Assessment.

Policy	**1.4 Facilitate energy efficiency improvements in the community's special housing stock to achieve retrofits in 5% of units by 2015 and 10% of units by 2020 in group quarters, multi-family units, and affordable housing.**
Actions:	• Promote cost-effective improvements to rental housing stock through outreach in partnership with the Claremont Colleges and affordable housing groups. • Work with community groups such as the Friends of the Joslyn Senior Center and the City's senior programs to educate the senior community and distribute special retrofit incentives to limited-income seniors. • Consider creation of a revolving loan program for energy efficiency improvements in multi-unit and affordable housing, using seed money or through creation of a regional loan program together with potential partners such as the Southern California Regional Energy Network and the San Gabriel Valley Council of Governments.
Implementation Time Frame:	Long-Term
Implementation Department(s):	Planning Division
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020.
kWh Reductions (2020):	-368,060 to -1,725,300
$MTCO_2e$ Reductions (2020):	-90 to -430
Assumed Reduction per Participant:	2,710 kWh per elderly household retrofit, 2,710 kWh per other low-income retrofit
Performance Target(s) (2020):	140 participating elderly households, 210 participating other low-income households
Reduction Method:	Using electricity use from the Claremont inventory and forecast, the number of elderly and low-income households from the City's Housing Element, and the number of occupied households from the California Department of Finance and the 2010 Census, the average electricity use per household was calculated for the baseline year. High and low reductions from Los Angeles County Energy Upgrade California projects were multiplied by assumed participation rate ranges.

Policy	**1.4 Facilitate energy efficiency improvements in the community's special housing stock to achieve retrofits in 5% of units by 2015 and 10% of units by 2020 in group quarters, multi-family units, and affordable housing.**
Reduction Sources:	Building Doctors. 2011. Los Angeles CA Home Energy Performance Assessment. City of Claremont. 2009. General Plan. Chapter 8: Housing Element. Residential Energy Assessment Services (REAS), Inc. 2011. Encino CA Home Energy Assessment. Residential Energy Assessment Services (REAS), Inc. 2011. San Fernando CA Home Energy Performance Assessment.

Policy	**2.1 Educate Claremont's businesses in energy conservation opportunities through improvements in daily operations.**
Actions:	• Continue to work with San Gabriel Valley Council of Governments (SGVCOG) and Southern California Edison (SCE) to promote services that provide operational energy data to business owners. • Work with the Southern California Regional Energy Network, SGVCOG, and SCE to create regional funding programs for bulk purchases of energy-efficient equipment and financing for nonresidential projects. • Host an annual tour of new and retrofitted green buildings in the city to demonstrate successful energy efficiency features and opportunities. • Create an energy efficiency awards program to recognize and award prizes to businesses that have achieved energy efficiency improvements. • Initiate the development of a "green business" association that aids collaboration on energy efficiency opportunities and practices and provides recognition of businesses committed to energy-saving goals.
Implementation Time Frame:	Near-Term
Implementation Department(s):	Economic Development Division
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020.

Policy	**2.2 Support the use of energy-efficient appliances and equipment in leased and owner-occupied businesses.**
Actions:	• Partner with the San Gabriel Valley Council of Governments, the Southern California Regional Energy Network, and Southern California Edison (SCE) to promote rebates for commercial activities, including SCE rebates through the Energy Management Solutions Program for cooking and refrigeration appliances, lighting, and manufacturing equipment. • Promote the practice of yearly energy benchmarking in nonresidential buildings to help track savings and identify energy-efficient appliances and technology that are cost-effective purchases. • Provide materials to encourage business participation in energy-monitoring programs through SCE or programs such as Energy Star Portfolio Manager to help businesses understand and track the impact of appliances on energy use.
Implementation Time Frame:	Mid-Term
Implementation Department(s):	Planning Division

Policy	2.2 Support the use of energy-efficient appliances and equipment in leased and owner-occupied businesses.
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020.
kWh Reductions (2020):	-4,770,730 to -9,541,450
$MTCO_2e$ Reductions (2020):	-1,250 to -2,500
Assumed Reduction per Participant:	132,520 kWh
Performance Target(s) (2020):	50 participating businesses
Reduction Method:	Using the California End-Use Survey (CEUS), the average percentage of electricity used on appliances was applied to the overall nonresidential electricity kWh used in Claremont. Citywide kWh nonresidential consumption by appliance was calculated by applying the CEUS figures for percentage of electricity consumed by each appliance. The kWh figures were then multiplied by the Climate and Air Pollution Planning Assistant reduction by appliance estimates to calculate total kWh reductions by appliance, which were then summed to calculate overall reductions.
Reduction Sources:	ICLEI - Local Governments for Sustainability. 2012. Climate and Air Pollution Planning Assistant (CAPPA) Version 1.5. Itron, Inc. 2007. California Commercial End-Use Survey – Results Page. http://capabilities.itron.com/CeusWeb/Chart.aspx.

Policy	2.3 Facilitate retrofits and energy efficiency improvements within the nonresidential building stock to achieve maximum energy savings and reduce operational expenses.
Actions:	• Educate local building owners about free financial assistance for energy efficiency, and use local pilot efforts for ongoing education efforts. Potential programs include Southern California Edison's Direct Install program for free energy efficiency improvements and Los Angeles County's Building Performance Partnership, which provides up to $250,000 in free engineering services. • Promote nonresidential financing options for energy efficiency improvements, including traditional mortgages, energy service agreements, on-bill financing, and efficiency bidding programs. Work with regional entities such as the Southern California Regional Energy Network and Los Angeles County to create a revolving loan fund to pay the cost of nonresidential retrofits that are not covered by utility rebates or other existing incentives. (builds on SCP 1.1.4) • Encourage commercial buildings to voluntarily display energy performance ratings. • Work with the San Gabriel Valley Council of Governments to distribute information on energy efficiency opportunities and financing to businesses through the business license renewal process. • Partner with the Claremont Chamber of Commerce to identify candidate businesses and older facilities that could benefit from energy efficiency improvements and consider targeting them with extra education or incentives. Potential facilities that could benefit include Pepper Tree Square and Sprouts Shopping Center.
Implementation Time Frame:	Long-Term
Implementation Department(s):	Planning Division
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020.

Policy	2.3 Facilitate retrofits and energy efficiency improvements within the nonresidential building stock to achieve maximum energy savings and reduce operational expenses.
kWh Reductions (2020):	-798,980 to -2,785,300
$MTCO_2e$ Reductions (2020):	210 to 730
Assumed Reduction per Participant:	374,090 kWh per shopping center, 10,650 kWh per small office
Performance Target(s) (2020):	4 participating shopping centers, 20 participating small offices
Reduction Method:	Shopping center kWh per square foot was calculated using total nonresidential electricity from the GHG inventory and data on commercial square footage from LA County Parcel Data. Square footage for retail shopping centers was available from the Claremont General Plan update to identify total square footage of targeted commercial areas. Then, using California Commercial End-Use Survey figures on the amount of electricity used from retail functions and US Building-Sector Energy Efficiency Potential information on the potential benefits of retrofitting, total electricity savings were calculated based on assumptions about shopping center participation. For the shopping centers, square footage includes nonretail area. Similarly for office space under 10,000 square feet, kWh per square foot was calculated using total nonresidential electricity use from the GHG inventory and data on commercial square footage from LA County Parcel Data. Square footage for office space under 10,000 square feet, from the LA County Parcel Data, was used to calculate electricity use per square foot. Then, using California Commercial End-Use Survey figures on the amount of electricity used from retail functions and US Building-Sector Energy Efficiency Potential information on the potential benefits of retrofitting, total electricity savings were calculated based on assumptions about office space participation.
Reduction Sources:	Brown, Rich, Sam Borgeson, Jon Koomey, and Peter Biermayer. 2008. US Building-Sector Energy Efficiency Potential. Ernest Orlando Lawrence Berkeley National Laboratory, University of California. http://enduse.lbl.gov/info/LBNL-1096E.pdf. Itron, Inc. 2007. California Commercial End-Use Survey – Results Page. http://capabilities.itron.com/CeusWeb/Chart.aspx. Los Angeles County Office of the Assessor. 2012. Los Angeles County Parcel Viewer. Los Angeles. http://maps.assessor.lacounty.gov/mapping/viewer.asp. Stanley R. Hoffman Associates. 2004. City of Claremont General Plan Update. http://www.stanleyrhoffman.com/reports/Claremont%20Economic%20Development%20Analysis.pdf.

Policy	2.4 Provide tools that support the energy efficiency improvements of renter-occupied businesses.
Actions:	• Provide sample tenant-landlord agreements and pledges to interested landlords to show model agreements that integrate energy efficiency improvements into leases and contract provisions. Work with the Claremont Chamber of Commerce and the Energy Wise Partnership to develop a model lease that allows tenants and owners to share the costs of capital investments in energy efficiency and operational benefits through energy-aligned leases for commercial properties, which would support shared landlord-tenant agreements that facilitate shared financing of energy efficiency retrofits to renter-occupied buildings.
Implementation Time Frame:	Long-Term
Implementation Department(s):	Economic Development Division

Policy	2.4 Provide tools that support the energy efficiency improvements of renter-occupied businesses.
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020.

Policy	2.5 Promote distributed generation technologies for nonresidential uses.
Actions:	• Promote existing rebate and incentive offerings for purchase of on-site renewable energy as they become available. • Use the Sustainability Report Card, Claremont City Letter, and more to highlight the newest and most promising solar photovoltaic, smart metering, and other renewable technology features, installation, and maintenance in new construction and retrofits citywide.
Implementation Time Frame:	Long-Term
Implementation Department(s):	Planning Division
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020. • Achieve high energy efficiency performance for all new residential and nonresidential buildings. • Additional solar reduction target to be identified by City staff. • Reduce municipal electricity use 20% by 2015 and 30% by 2020 (SCP).
kWh Reductions (2020):	-164,640 to -329,280
MTCO2e Reductions (2020):	-40 to -90
Assumed Reduction per Participant:	19,600 kWh
Performance Target(s) (2020):	20 participating businesses
Reduction Method:	Using the average size of photovoltaic installations in Claremont provided by California Solar Initiative, and assumptions about the number of total businesses participating, emissions reductions from commercial PV installations were calculated. Assumes participating businesses will install 13 kW of solar photovoltaic panels.
Reduction Sources:	California Energy Commission and California Public Utilities Commission. 2011. California Solar Initiative: California Solar Statistics – Geographical Statistics. http://www.californiasolarstatistics.ca.gov/reports/locale_stats/.

Policy	3.1 Continue to encourage the achievement of LEED Silver certification for all new construction.
Actions:	• Provide incentives to encourage private development to reach LEED Silver certification. (SCP 4.2.2) • Consider the adoption of a Green Building Ordinance requiring LEED Silver certification for private nonresidential construction projects over 20,000 square feet. (SCP 4.2.3) • Create a green building tour for local homes and buildings achieving exemplary energy reductions. • Track all green buildings in the city and provide recognition in the annual Sustainability Report Card and other City communications.
Implementation Time Frame:	Mid-Term
Implementation Department(s):	Building Division

Policy	3.1 Continue to encourage the achievement of LEED Silver certification for all new construction.
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020. • Achieve high energy efficiency performance for all new residential and nonresidential buildings, exceeding minimum standards of Title 24. • Reduce municipal electricity use 20% by 2015 and 30% by 2020 (SCP).
kWh Reductions (2020):	-108,380 to -146,560
$MTCO_2e$ Reductions (2020):	-30 to -40
Assumed Reduction per Participant:	140 kWh per new residential building, 930 kWh per new nonresidential building
Performance Target(s) (2020):	50 new residential buildings, 50 new nonresidential buildings
Reduction Method:	Achieving LEED Silver was assumed to have a similar effect as achieving a Tier 1 standard—improving 15% over Title 24. Unlike Tier 1, no phasing in was assumed. A participation rate was applied to this calculation since achieving LEED standards for residential buildings will be voluntary. For nonresidential buildings, achieving LEED Silver status was assumed to be similar to a 15% improvement over Title 24. No phasing in was assumed; however, a nonresidential participation rate was factored into the measure since this policy may be voluntary for businesses.
Reduction Sources:	California Energy Commission. 2012. Proposed 2013 Building Energy Efficiency Standards. Title 24, Part 6, and Associated Administrative Regulations. http://www.energy.ca.gov/2012publications/CEC-400-2012-004/CEC-400-2012-004-15DAY.pdf . City of Claremont. 2009. General Plan: Housing Element. Simon and Associates, Inc. 2010. CALGreen Low-Rise Residential comparison to GreenPoint and LEED for Homes. http://www.builditgreen.org/_files/GovRel/AIACC/CALGreen_Res_GPR_LEED_Comp_v1_Sep01.pdf.

Policy	3.2 Revise development codes and commission review policies to promote sustainable practices in the built environment.
Actions:	• Require large-scale developments to be built solar-ready, and continue to encourage the use of LEED neighborhood development design principles for applicable projects. • Consider adopting standards to require all residential additions greater than a certain threshold to trigger the requirement to achieve Build It Green's Green Point Rated or to exceed the minimum mandatory energy efficiency standards identified by CALGreen.
Implementation Time Frame:	Long-Term
Implementation Department(s):	Planning Division
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020. • Achieve high energy efficiency performance for all new residential and nonresidential buildings, exceeding minimum standards of Title 24. • Additional solar reduction target to be identified by City staff.

Policy	**4.1 Collaborate with historic building owners in the Village and throughout the community to improve the energy efficiency of historic properties while enhancing the character and integrity of the buildings.**
Actions:	• Work with regional partners to train planning and building staff on appropriate energy efficiency policies for historic properties. • Develop and disseminate information regarding energy efficiency upgrades and retrofits appropriate for historic buildings through brochures, websites, and local partnerships. • Revise the City's Mills Act Historic Property Preservation Agreement Application to encourage property owners to identify projects that maintain the historic integrity of the building while improving energy efficiency. • Encourage Mills Act participants to integrate appropriate energy efficiency improvements into building renovations.
Implementation Time Frame:	Mid-Term
Implementation Department(s):	Planning Division
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020.

Policy	**4.2 Support the development of local green building capacity and expertise in the private and public sectors.**
Actions:	• Establish a Green Realtor Certification program to certify real estate professionals in how to appraise and sell green homes and fund energy efficiency improvements to homes that need the work in order to be more marketable. • Leverage federal and state funding programs to achieve energy efficiency objectives, including programs such as the Energy Efficient Mortgage Program provided by the US Department of Housing and Urban Development, the Veterans Administration Energy Efficiency Mortgage, and the Fannie Mae and Freddie Mac Energy Improvement Mortgage. • Partner with the San Gabriel Valley Council of Governments to encourage the regular meeting of regional real-estate development business representatives and energy program managers of industrial, commercial, and large multi-family or group residential facilities to share information and identify best building and operation practices for maximum energy efficiency in large nonresidential buildings. • Work with local schools and colleges to create energy efficiency ambassadors to learn about energy efficiency and intern with City staff to support implementation of the City's energy efficiency efforts.
Implementation Time Frame:	Mid-Term
Implementation Department(s):	Planning Division
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020.

Policy	5.1 Maintain and increase tree canopy coverage on private property in the Claremont community.
Actions:	• Strengthen the City's landscape requirements to require a minimum percentage of tree canopy coverage within a specified time frame. (SCP 5.4.5) • Develop a good tree maintenance education program for private tree owners (5.5.2), using existing tree planting resources on the City's website. • Produce a list of City-certified arborists. (5.4.4) • Encourage use of deciduous trees to shade homes and buildings (passive solar).
Implementation Time Frame:	Long-Term
Implementation Department(s):	Community Services
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020.
kWh Reductions (2020):	-122,780 to -810,080
$MTCO_2e$ Reductions (2020):	-30 to -210
Assumed Reduction per Participant:	40 kWh per residential tree, 1,670 kWh per commercial tree
Performance Target(s) (2020):	2,900 residential trees, 60 commercial trees
Reduction Method:	Identified percentage of homes and businesses with cooling appliances and calculated the kWh used per home and business on cooling. Applied the CAPPA percentage reduction in cooling kWh per participant to calculate community-wide reductions.
Reduction Sources:	ICLEI - Local Governments for Sustainability. 2012. Climate and Air Pollution Planning Assistant (CAPPA) Version 1.5. Itron, Inc. 2007. California Commercial End-Use Survey – Results Page. http://capabilities.itron.com/CeusWeb/Chart.aspx.

Policy	5.2 Maintain and increase tree canopy coverage near public facilities.
Actions:	• Continue to expand urban forest on public lands and rights-of-way. (5.4.6) • Continue existing efforts through the ACORN Project, and expand programs to regenerate oak woodlands in public parks and open space in coordination with the Rancho Santa Ana Botanic Garden, Rivers and Mountains Conservancy, and other partners in the conservation community.
Implementation Time Frame:	Near-Term
Implementation Department(s):	Community Services
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020. • Reduce municipal electricity use 20% by 2015 and 30% by 2020 (SCP).

Policy	5.3 Facilitate the application of advanced cool roofs in existing development.
Actions:	• Apply cool roofing to all public facilities undergoing upgrades to demonstrate effectiveness and savings. • Work with the Claremont Colleges and large commercial businesses to expand existing green roof and showcase programs.
Implementation Time Frame:	Long-Term
Implementation Department(s):	Planning Division

Policy	5.3 Facilitate the application of advanced cool roofs in existing development.
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020. • Reduce municipal electricity use 20% by 2015 and 30% by 2020 (SCP).
kWh Reductions (2020):	-100,620 to -195,180
$MTCO_2e$ Reductions (2020):	-30 to -50
Assumed Reduction per Participant:	110 kWh per single-family home, 370 kWh per average size nonresidential building
Performance Target(s) (2020):	1,110 participating single-family homes, 70 participating nonresidential buildings
Reduction Method:	Sacramento Municipal Utility District (SMUD) case studies were used to find a range of reductions per residential cool roof. Since the case studies were not in Los Angeles County, the reduction rates were lowered to be conservative. These reductions were then applied to the target residential participation rate. For nonresidential reductions, the US Department of Energy low slope cool roof calculator was used to identify a range of kWh reductions per square foot. This range was then applied to the nonresidential target participation rate.
Reduction Sources:	Sacramento Municipal Utilities District. 2012. "Cool Roofs." https://www.smud.org/en/residential/save-energy/rebates-incentives-financing/cool-roofs.htm. US Department of Energy. 2012. "DOE Cool Roof Calculator Version 1.2" http://www.ornl.gov/sci/roofs%2Bwalls/facts/CoolCalcEnergy.htm.

Policy	6.1 Encourage water conservation practices in residential, commercial, and institutional buildings.
Actions:	• Continue to broadly implement and enforce the City's Water Conservation Ordinance and Water Efficient Landscaping Ordinance. (SCP 1.2.6) • Continue to promote and facilitate education campaigns on water conservation practices. • Continue to promote and facilitate school education programs in water conservation practices available in partnership with water providers and regional partners, including Golden State Water Company and Sustainable Claremont.
Implementation Time Frame:	Long-Term
Implementation Department(s):	Community Services
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020. • Reduce municipal electricity use 20% by 2015 and 30% by 2020 (SCP).

Policy	6.2 Promote energy-efficient water appliances and technologies.
Actions:	• Facilitate gray water systems in the residential community. • Facilitate reclaimed water systems in large institutional and commercial buildings. • Continue to promote regional water appliance and technology programs including ultra high efficiency toilet distribution and other low-flow appliances. • Promote and facilitate the use of rebates on water-efficient appliances provided by Southern California Edison and other utility costs.
Implementation Time Frame:	Mid-Term

Policy	6.2 Promote energy-efficient water appliances and technologies.
Implementation Department(s):	Community Services
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020. • Reduce municipal electricity use 20% by 2015 and 30% by 2020 (SCP).
kWh Reductions (2020):	-256,280 to -283,260
$MTCO_2e$ Reductions (2020):	-0 to -70
Assumed Reduction per Participant:	5,490 gallons of water saved per resident
Performance Target(s) (2020):	36,110 residents served
Reduction Method:	Baseline (a 10-year average) and 2020 gallons per capita per day were multiplied by EAP identified baseline and 2020 service population estimates, and converted to gallons per year. The difference between the two figures was identified to estimate the target gallons per year reduction. 2020 projected water use by account type was utilized to estimate the amount of the target water reduction that would be removed from indoor and outdoor use, respectively. The estimated reduction in outdoor water use was multiplied by the Claremont kWh per gallon coefficient, identified in the GHG inventory and forecast.
Reduction Sources:	California Energy Commission. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. Kennedy/Jenks Consultants. 2011. 2010 Urban Water Management Plan – San Dimas. Accessed October 6, 2011. http://www.gswater.com/csa_homepages/documents/Claremont_GSWCUWMPDraf.pdf. Three Valleys Municipal Water District. 2011. Urban Water Management Plan 2010. https://drivehq.com/folder/p8997658.aspx. Accessed November 28, 2011.

Policy	6.3 Reduce electricity used for irrigation purposes through conservation and efficiency.
Actions:	• Expand use of climate-appropriate vegetation at parks and in the public right-of-way. (SCP 1.2.4) • Continue to promote and facilitate turf removal service as a method of water conservation (SCP 1.2.6), building on the Turf Replacement Program funded by the Golden State Water Company and the Metropolitan Water District of Southern California. • Continue to promote and facilitate residential audits of irrigation systems provided by the Golden State Water Company. (SCP 1.2.6) • Continue to promote and facilitate commercial, industrial, and institutional audits of irrigation systems provided by the Golden State Water Company.
Implementation Time Frame:	Mid-Term
Implementation Department(s):	Community Services
Applicable Reduction Target:	• Reduce community-wide electricity use 20% by 2015 (SCP) and 30% by 2020. • Reduce municipal electricity use 20% by 2015 and 30% by 2020 (SCP).
kWh Reductions (2020):	-351,490 to -388,480
$MTCO_2e$ Reductions (2020):	-90 to -100
Assumed Reduction per Participant:	8,380 gallons of water saved per resident
Performance Target(s) (2020):	36,110 residents served

Policy	6.3 Reduce electricity used for irrigation purposes through conservation and efficiency.
Reduction Method:	Baseline (a 10-year average) and 2020 gallons per capita per day were multiplied by EAP identified baseline and 2020 service population estimates, and converted to gallons per year. The difference between the two figures was identified to estimate the target gallons per year reduction. 2020 projected water use by account type was utilized to estimate the amount of the target water reduction that would be removed from indoor and outdoor use, respectively. The estimated reduction in outdoor water use was multiplied by the Claremont kWh per gallon coefficient, identified in the GHG inventory and forecast. Indoor water use was assumed to enter the wastewater system.
Reduction Sources:	California Energy Commission. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. Kennedy/Jenks Consultants. 2011. 2010 Urban Water Management Plan – San Dimas. Accessed October 6, 2011. http://www.gswater.com/csa_homepages/documents/Claremont_GSWCUWMPDraf.pdf. Three Valleys Municipal Water District. 2011. Urban Water Management Plan 2010. https://drivehq.com/folder/p8997658.aspx. Accessed November 28, 2011.

APPENDIX C

ELP REQUIREMENTS CHECKLIST

Silver Level – Initiate EAP

The Partner City demonstrates initiation of an EAP to qualify for the Silver level criteria. This can include any of the following options:

A. Partner selected and was approved for Strategic Plan menu item 3.2.1

B. A draft of an EAP is submitted by Partner City

C. RFP issued or consultant hired to complete EAP

Gold Level – Complete EAP

The Partner City must submit a completed plan to SCE, which includes (at least) the following components:

A. Establishes long-term vision and plan for energy efficiency in city

B. Clearly states the aim and objectives of the plan

C. Records the baseline municipal energy usage (kWh)

D. Displays the highest users (facilities) that the city should target

E. Identifies the City reduction goals and milestones

F. Provides the plan of municipal facility projects that the City can complete to assist in achieving its reduction

   a. Provides savings calculated for each project

   b. Identifies priority of projects

   c. Identifies expected funding mechanisms to complete municipal facility energy efficiency projects

G. Identifies any policies or procedures the City can implement to assist in reducing energy

H. Add statement/paragraph identifying all actions including (but not limited to) municipal retrofit projects and policies that will constitute meeting the "Implementation" requirement in the ELP Platinum level

I. Language stating the EAP will be integrated in the next General Plan update or other policy documents

Platinum Level – Implement EAP

A. EAP approved by Council

B. Implementation actions must include the following:

   i. Evidence of inclusion (as a line item) of EAP implementation in city operating budget

   Example: Establishment of energy revolving fund or reference to energy efficiency in the annual maintenance budget demonstrating long term implementation of EAP

   ii. Evidence of integration of EAP into long term policies such as the General Plan, climate action plan, or sustainability plan or adopt the following resolution, "RESOLVED that the completed Energy Action Plan will serve to guide the City of Claremont in future energy efficiency actions and initiatives that will be incorporated in a long term policy document such as the General Plan, climate action plan, or sustainability plan."

iii. As referenced in Gold level H, the completion of the identified actions that were delineated in the EAP *(items such as invoices for municipal projects or signed resolutions)*

Please use the following page to help identify areas of the EAP that satisfy the requirements.

EAP Requirements for Gold	Page Number and Section Found
A. Establishes long-term vision and plan for energy efficiency in the City	Chapter 1, "Role of the EAP" section, page 6
B. Clearly states the aim and objectives of the plan	Chapter 1, "Role of the EAP" section, page 6
C. Records the baseline municipal energy usage (kWh)	Chapter 3, "Municipal Electricity Profile" section, page 33
D. Displays the highest users (facilities) that the city should target	Chapter 3 , "Municipal Electricity Profile" section, pages 36
E. Identifies the City reduction goals and milestones	Chapter 4, "Reduction Targets" section, page 38
F. Provides the plan of municipal facility projects that the City can complete to assist in achieving its reduction (Provides savings calculated for each project) a. Identifies priority of projects b. Identifies expected funding mechanisms to complete municipal facility energy efficiency projects	Chapter 4, "Near-Term and Recently Completed Projects" section, pages 50, Table 18
G. Identifies any policies or procedures the City can implement to assist in reducing energy	Chapter 4, "Community Strategies" section, Policy 1.1 – Policy 7.5, pages 40–52
H. Add statement/paragraph identifying all actions including (but not limited to) municipal retrofit projects and policies that will constitute meeting the "Implementation" requirement in the ELP Platinum level	Chapter 5, "Monitoring and Updating the EAP" section, page 56
I. Language stating 1) the EAP's long term policies will be integrated in the local government's policy documents such as the next General Plan, climate action plan or sustainability plan or 2) that the following resolution will be adopted, "RESOLVED that the completed Energy Action Plan will serve to guide the City of Claremont in future energy efficiency actions and initiatives that will be incorporated in a long term policy document such as the General Plan, climate action plan, or sustainability plan."	Chapter 5, "Monitoring and Updating the EAP" section, Implementation Policy 5, page 56