

10. ENERGY ELEMENT



Table of Contents

	page
PURPOSE	10-1
NATURAL GAS AND ELECTRICITY	10-1
Renewables.....	10-2
Transmission and Distribution of Electricity	10-2
Tri-Valley Capacity Increase Project	10-3
Transmission and Distribution of Natural Gas	10-3
Local Power Sources.....	10-3
Distributed Generation	10-5
CONSERVATION EFFORTS	10-5
Water and Energy Conservation	10-6
Green Building	10-6
Community-Choice Aggregation	10-7
TRANSPORTATION ENERGY	10-7
VISUAL IMPACTS	10-8
RELATIONSHIP TO OTHER ELEMENTS	10-8
Land Use Element	10-8
Circulation Element	10-8
Housing Element	10-8
Air Quality and Climate Change Element	10-9
Economic and Fiscal Element	10-9
GOALS, POLICIES, AND PROGRAMS	10-10

	page
<u>Tables:</u>	
Table 10-1: Pleasanton’s Annual Energy Demand, 2005 and 2025	10-2
<u>Figures</u>	
Figure 10-1: Substations and Transmission Lines	10-4

10. ENERGY ELEMENT

PURPOSE

The purpose of the Energy Element is to guide Pleasanton toward a sustainable energy future. We define the term “a sustainable energy future” as development that meets the needs of the current generation without compromising the ability of future generations to meet their needs. The current energy system is dependent upon energy resources drawn from the natural environment, many of them non-renewable. In contrast, a sustainable city draws from the environment only those resources that are necessary and that can be used or recycled perpetually, or returned to the environment in a form that nature can use to generate more resources.



Solar panels on the green structure power Pleasanton Fire Station 4

Long-term sustainability requires that all energy management decisions be based upon an equitable accounting of all costs – those costs to be met today and those that will be borne by others in the future. This Element strives to maintain the highest quality environment and quality of life through energy efficiency and the use of renewable energy – or energy that can be recycled or be returned to nature to generate more resources.

Following the energy crisis of 2000-2001, the City Council set various energy-related priorities, one of which was to develop an Energy Element for the General Plan. In the aftermath of the energy crisis, the community was keenly aware that normal business functions and day-to-day living is dependent on reliable, sustainable and affordable energy supplies. While there are many programs included in this Element, most can be assigned to two central themes: support economic stability and improve environmental quality. These are the desired outcomes from the implementation of the Energy Element.

NATURAL GAS AND ELECTRICITY

The energy crisis experienced by California in 2000 and 2001 following power market deregulation was the impetus behind Pleasanton’s involvement in energy planning. In general, since the state regulates power utilities, it has more control over energy-related issues than local governments. Nevertheless, because of the opportunities for power generation and conservation at the local level, there is a role for cities to play. The City’s Energy Element includes measures which will help address issues of energy demand and energy supply at the State as well as local levels.

Table 10-1 summarizes existing (2005) and projected (2025) annual gas and electric energy demand for the City of Pleasanton.

TABLE 10-1:

PLEASANTON'S ANNUAL ENERGY DEMAND, 2005 AND 2025

	<u>Residential</u> ^a	<u>Non-Residential</u> ^b	<u>TOTAL</u>
Gas (Therms)			
2005 Total ^c	12.8 million	8.1 million	20.9 million
2025 Total	14.9 million	10.9 million	25.8 million
Electricity (Kwh)			
2005 Total ^c	209.9 million	463.1 million	673 million
2025 Total	234.3 million	620.5 million	854.8 million

Notes::

Therm = a unit of heat is equal to 100,000 British thermal units (BTU)
 BTU = energy required to raise one pound of water one degree Fahrenheit
 Kwh = kilowatt (power equal to 1,000 watts) hour

- ^a PG&E estimates that each household uses 540 therms of gas and 6,490 Kwh of electricity annually. General Plan buildout assumes 3,817 new dwelling units that would add 2.1 million therms of gas and 24.7 million Kwh of electricity.
- ^b Future growth of commercial and industrial development is estimated at 34 percent. This forecast assumes that all non-residential development will grow 34 percent and would add 2.8 million therms of gas and 157.4 million Kwh of electricity.
- ^c PG&E actual energy used in 2005. Thus for the 25,183 existing dwelling units in 2005, annual average usage was 508 therms of gas and 8,335 Kwh of electricity.

Sources: Bill McLaren, Account Services, PG&E, email, January 30, 2007; PG&E Carbon Footprint Calculator Assumptions, Jan. 28, 2008, http://www.pge.com/about_us/environment/calculator/assumptions.html; Planning & Community Development Department, 2008.

Renewables

Since the energy crisis, the State has taken a leadership role in promoting the production of renewable energy. Renewables are sustainable energy sources that cause relatively few environmental impacts and pose a low risk to human health and include, but are not

limited to, passive solar, photovoltaic power, and wind power. In 2002 the State directed that the supply portfolio of all investor-owned utilities, such as Pacific Gas and Electric (PG&E), include 20 percent renewable energy supplies by 2017. In addition, as of 2005 the State's Emerging Renewables Program provides generous rebates for residential and commercial renewable energy installations.

Transmission and Distribution of Electricity

An electric power system consists of power plants, transmission lines, distribution substations, and distribution lines. Currently, the Tri-Valley's electric power is supplied by a combination of private suppliers which sell power to PG&E for resale. Electric power is stepped up to higher voltages¹ at the generating source to allow power to be delivered over a number of wires. The electricity is transported via a network or grid of high-voltage transmission lines.



Electrical Substation near Stanley Boulevard in Pleasanton

¹ Voltage equals the electric potential expressed in volts.

At substations, transformers step down the voltage to lower levels for distribution. There are four large substations in/near Pleasanton that serve many customers within the Planning Area: Vineyard, Radum, North Dublin, and San Ramon. Figure 10-1 shows the locations of these multi-customer substations. There are also three smaller substations that serve single customers.

Tri-Valley Capacity-Increase Project

Most electric power is brought to Pleasanton and other Tri-Valley substations via transmission lines connected to the statewide grid system. Electric power capacity is looked at on a subregional rather than citywide basis.

Local electrical capacity is a function of (1) transmission network capacity to bring this power to Pleasanton and the Tri-Valley, (2) capacity of the local substations to lower the voltages (or step down the power) to deliverable voltages, and (3) the ability of the local distribution network to deliver adequate power to customers.

In 2001 PG&E reported that the Tri-Valley electrical transmission and distribution system was in need of an upgrade to increase capacity. To address this issue, in 2002 PG&E constructed a transmission-capacity-increase project in the Tri-Valley. In Pleasanton, the project included the installation of a new underground 230 kV line under/near Vineyard Avenue and the upgrading of the existing Vineyard Substation to accommodate the increased capacity.

Transmission and Distribution of Natural Gas

A natural gas power system consists of underground natural gas reservoirs, drilling equipment, long-distance transmission pipelines, and local distribution pipelines. Natural gas is a fossil fuel made of decomposed plant and animal material and is usually found near a petroleum reservoir. Natural gas is pumped from the underground reservoir into large transmission pipelines which transport the gas to

local distribution pipelines. Some local distribution systems lead to underground storage. These natural gas storage areas are utilized during seasonal peaks.

In Pleasanton there are three natural gas transmission pipelines. These pipelines are located on Foothill Road, Santa Rita Road, and Stanley Boulevard. There are no natural gas storage areas in Pleasanton. The capacity of a natural gas distribution system is dependent upon local characteristics within the system, some of which include customer gas loads, pipe diameters, and flow behavior. Requests for usage increases are sent to PG&E, and PG&E adjusts the system to accommodate its customers.

Local Power Sources

Heat and/or light collected from the sun produces solar energy. Common uses of solar energy are solar water heating systems, which use the sun to heat water, and photovoltaic facilities, which convert sunlight into energy. Pleasanton’s sunny climate is suitable for the implementation of solar energy technologies. Solar water heating systems are installed each year in Pleasanton, typically to heat pools.

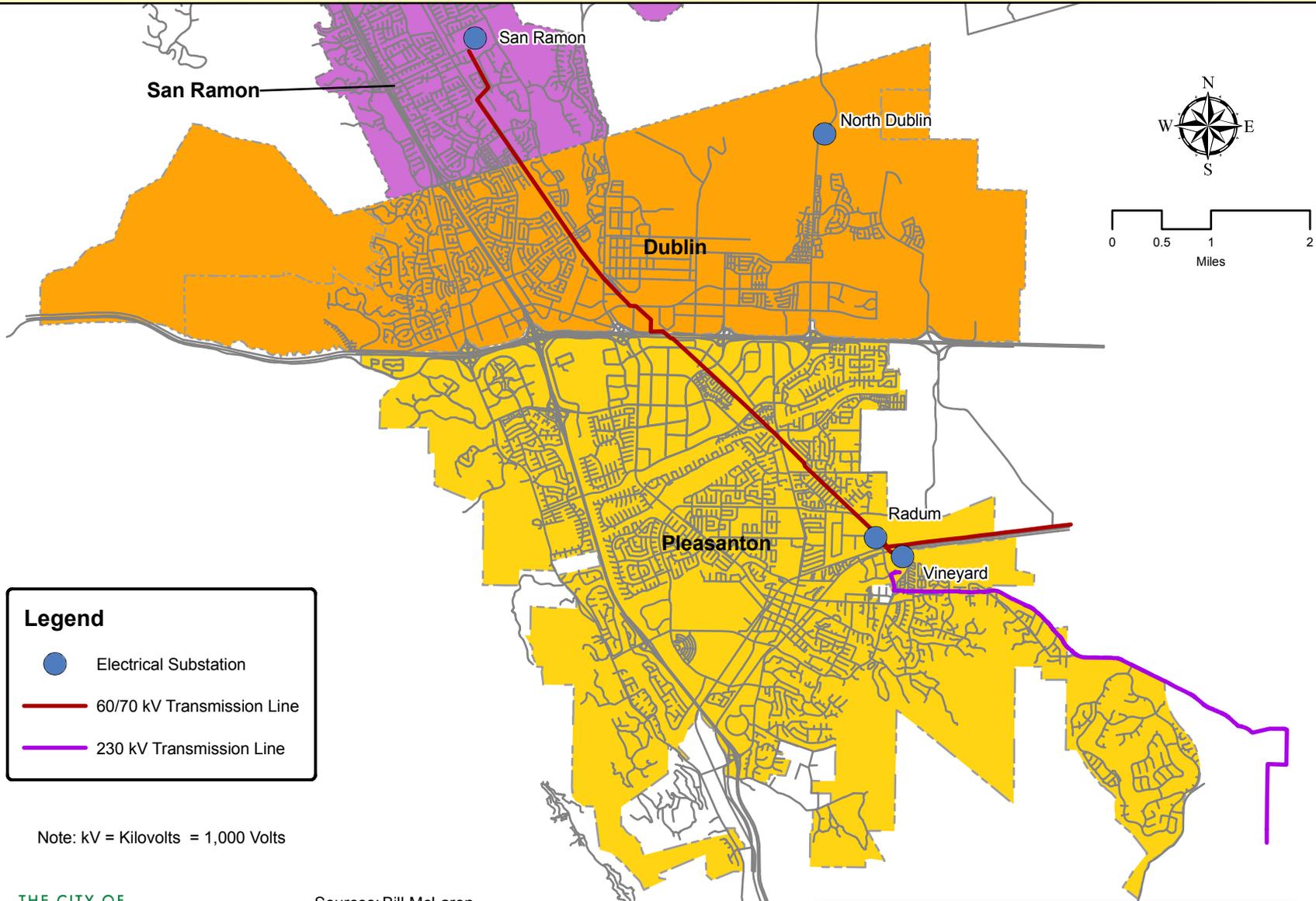
In 2000 and 2001 the City approved its first photovoltaic systems. Since that time, about one or two photovoltaic facilities have been

installed each year at various commercial and residential locations in the city. Excess power from photovoltaic systems reduces the peak-hour load and the need for additional power capacity. The promotion and installation of solar water heating and photovoltaic facilities is consistent



Electrical usage in a City office

2005 PLEASANTON PLAN 2025



Legend

- Electrical Substation
- 60/70 kV Transmission Line
- 230 kV Transmission Line

Note: kV = Kilovolts = 1,000 Volts



Sources: Bill McLaren,
PG&E Account Services, 2007.

Tri Valley Phase 1 230 kV Transmission Line
Electric T & D Engineering Department,
PG&E, 2003.

Figure 10 - 1
Substations and Transmission Lines



Solar panels on the roof of Borg Fencing

with the overarching goal of the Energy Element which is to guide Pleasanton toward a sustainable energy future. Passive solar energy design is also suitable for Pleasanton. Passive solar energy techniques do not employ mechanical means to utilize heat or light from the sun, but instead employ strategic building and landscaping placement as well as building design to naturally heat and cool buildings.

Distributed Generation

A distributed generation system involves small amounts of energy generation for the purpose of meeting local loads and/or displacing the need to build (or upgrade) local distribution lines or large central power plants. The City’s *Generator Siting Ordinance* encourages the development of distributed generation facilities by permitting

photovoltaic facilities throughout the City. Other types of distributed generation facilities, such as wind energy facilities, small fuel-cell facilities, and small natural gas co-generation facilities, are allowed in selected areas of the City, typically away from residential areas where they may generate noise or air quality impacts. One small natural gas co-generation facility is in operation at the Roche Molecular System’s facility in Hacienda Business Park.

CONSERVATION EFFORTS

In July of 2001, the City Council adopted a pledge endorsing the Governor’s “Energy Conservation Pledge” and committed Pleasanton to pursue a 15 percent reduction in energy use. To conserve energy, in 2000 and 2001 the City updated its traffic signal lighting by replacing standard incandescent bulbs with light-emitting-diode (LED) bulbs. In addition to the traffic signal upgrades, in 2001 the City enrolled in an Energy Star building performance improvement program. As part of the program, the City is currently upgrading its facilities based on energy audits. Although difficult to quantify, staff believes that the energy usage of facilities existing in 2001 has been reduced by approximately 15 percent. The City has played a role in conservation outreach to the general public, largely through the distribution of conservation-related reading materials. Conserving energy now and in the future will leave more resources for future generations.

In 2007, the City joined the International Council for Local Environmental Initiatives (ICLEI) for a one year period – an organization of local governments that takes action on climate protection. Although this organization focuses on reducing greenhouse gases, many of the actions Pleasanton could take would also reduce energy usage. See the Air Quality Element for additional discussion of ICLEI and what Pleasanton hopes to accomplish regarding reducing the City’s carbon footprint.

Water and Energy Conservation

Water and energy conservation are linked. A tremendous amount of energy is required to pump water. The California State Water Project consumes approximately 2-3 percent of the State's energy supply to pump water.² In addition to energy used for pumping water, wastewater treatment also consumes energy. Thus, when water is conserved, so is energy. Conserving water is one step the City can take toward long-term sustainability.

Green Building

There are many different conceptions of green building design due to the broad range of sustainable issues. Definitions range from broad concepts that incorporate all aspects of sustainability to narrow definitions that focus on one specific sustainable design feature such as recycled content materials or energy efficiency. While there is no formal definition of green building, the term implies a structure that is friendlier to its occupants and the environment and is more resource efficient. In general, green building design entails the implementation of these related goals: energy efficiency, healthy indoor air quality, waste reduction, water efficiency, and performance and reduced environmental impact involves the sustainability planning. The development of a green building with improved integration of these design concepts, as well as building maintenance and lifetime operation. The green building design field continues to evolve as new technologies and products come into the marketplace and innovative designs improve their effectiveness. The goals of green building are consistent with the Energy Element's overarching purpose of guiding Pleasanton toward a sustainable energy future.

In 2002 the City Council adopted a green building ordinance (codified as Chapter 17.50 Green Building of the *Municipal Code*) which requires

² Greenbiz.com, *Saving Water Cuts Energy Use Says Report*, <http://www.greenbiz.com/news>, September 2004.



Solar-paneled roof at Applied Biosystems (Chris Crannell and Ken Mantoani)

new civic and commercial projects over 20,000 square feet in size to incorporate green building measures from the US Green Building Council's LEED (Leadership in Energy and Environmental Design) Rating System. In 2006 the City Council adopted amendments to *Planning Code* Chapter 17.5 to also require that most new residential projects incorporate green building measures.

At the regional level, Alameda County Waste Management Authority (ACWMA) has developed green-building guidelines and green-building rating systems for single-family and multi-family residences following a collaborative process with the development community. Section 17.50 of the *Pleasanton Municipal Code* requires its use for building residences.

Pleasanton has continued fine-tuning its green building program and is currently working on a Solar Cities Program, jointly with the City of Livermore, that will consider additional green-building practices. This

program will consider standardized solar-energy-system-installation designs for residences and potentially for businesses. By standardizing designs within a larger geographic area, both cities expect economies of scale that might encourage more future green-building implementation.

Fire Station 4, which opened in 2005, is the only fire station in the United States to achieve a LEED™ Gold Certification. It incorporates many green-building ideas including a photovoltaic system that produces electrical energy, recycled and sustainable building materials, and landscaping that creates a more environmentally friendly system for managing rainwater.

In addition, the Pleasanton Unified School District is partnering with Honeywell to install solar panels on the roofs of seven schools in the District. These panels, which are scheduled to be installed by the end of 2007, will supply about 20 percent of the District’s electrical needs. Energy from these panels will cost 25 percent less than energy from PG&E.

The Alameda County Fairground installed a photovoltaic (solar-power) system that produces about 1,200 megawatt hours of electricity annually and provides about 50 percent of the electricity consumed at the Fairgrounds.



Alameda County Fairgrounds at night

Alameda County Fair Association

Green building is indicative of Pleasanton’s efforts to plan for sustainability so that many generations can enjoy a high quality of life. See the Green Building section of the Community Character Element as well as the Sustainable Development and Planning section of the Air Quality Element for further discussion of green building.

Retrofit Financing

The high upfront cost of purchasing and installing solar energy systems, high efficiency heating and air conditioning systems, or other renewable energy and energy efficiency improvements prevents many property owners from independently making these improvements. Consequently, the City will explore the possibility of funding voluntary actions by owners of commercial and residential buildings to undertake energy efficiency measures, install solar rooftop panels, install “cool” (highly reflective) roofs, and take other measures to reduce greenhouse gas emissions. In 2008, the State Legislature enacted *Assembly Bill 811*, which expressly authorizes cities to make such loans to property owners, who will then repay their loans through assessments collected on their property tax bills. The bill gives the City broad authority to determine the type of improvements that would be financed and the particulars of the financing arrangements. Thus, *AB 811* helps property owners overcome the key obstacle to improving their properties’ energy efficiency and promoting the installation of such improvements to address global climate change.

Community-Choice Aggregation

In 2002, the State passed *Assembly Bill 117* which allows local governments, cities, and counties to become Community Choice Aggregators (CCAs) by giving local governments, cities, and counties the authority to combine the electrical load of their residents, businesses, and municipal facilities in an electricity buyers’ program. Under this bill, the investor-owned utility, in Pleasanton’s case PG&E, would still provide transmission and distribution services.

If the City chooses to become a Community Choice Aggregator, it would procure a power supply for distribution to all classes of electricity customers within the City limits and it would set the rate structure for participants in the program. There would be an opportunity for ratepayers to opt out of the program and revert to service by PG&E. Some benefits of becoming a CCA may include more local control over Pleasanton's energy supply portfolio and energy rates. The City needs to fully assess the costs, benefits, and potential risks of this program before proceeding.

TRANSPORTATION ENERGY

A large proportion of energy used in Pleasanton is related to transportation and includes gasoline and other fuels that vehicles may use in the future. Currently traffic congestion threatens the quality of air residents breathe, the satisfaction of roadway users, and the City's economic vitality. Congestion occurs when traffic demand exceeds available capacity. Causes of recurring congestion include insufficient facility capacity and ineffective management of existing capacity (such as poor signal timing). Reducing congestion and the use of renewable fuels is consistent with the overarching purpose of this Energy Element, guiding Pleasanton toward a sustainable energy future. Thus, this Energy Element includes measures to help reduce congestion and the use of traditional vehicle fuels.

VISUAL IMPACTS

Power lines can be unsightly and detract from the surrounding character of an area. In addition, power lines can be a safety hazard during a strong storm or earthquake. For aesthetic and safety reasons, the City requires local and regional transmission and distribution lines to be placed underground whenever feasible. Creating a safe, attractive environment is consistent with the notion of sustainability.

RELATIONSHIP TO OTHER ELEMENTS

Policies and programs established throughout the General Plan affect energy resources and usage in Pleasanton.

Land Use Element

The Land Use Element provides guiding principles for the type, location, size, and density of land uses throughout the City of Pleasanton. Land use objectives relating to density, neighborhood design, proximity to transit, proximity to shopping/employment, walkability, street layout, and construction techniques (green building) all affect energy usage. The Land Use Element provides policies allowing mixed-use developments, high-density uses near transit facilities, and neighborhood-serving retail near residential neighborhoods.

Circulation Element

The Circulation Element strives to provide safe and efficient circulation systems throughout Pleasanton including for public transit as well as trails for pedestrian and bicycle travel. Circulation objectives that limit energy usage would comply with the Energy Element, including continued-inclusion of Transportation Systems Management policies (Chapter 17.24 of the *Pleasanton Municipal Code*), which reduce both vehicular trips and traffic congestion.

Housing Element

The Housing Element guides housing development throughout Pleasanton. This would comply with the Energy Element. Housing policies that encourage additional lower-income housing could encourage more lower-income workers to live near employment, thus lowering vehicle trips and energy usage, as would the policy to promote transit-oriented development. Policies in the Housing Element to conserve energy and comply with green-building policies would also lower energy usage.

Air Quality and Climate Change Element

The Air Quality Element guides Pleasanton toward reducing air emissions by reducing vehicle trips and energy consumption. Energy objectives that would lessen energy use would also reduce air emissions. The Air Quality Element encourages increasing energy efficiency, conservation, and the use of renewable resources.

Economic and Fiscal Element

The Economic and Fiscal Element strives to enhance Pleasanton's economic base. Economic objectives that would lead to fewer automobile trips would also reduce energy usage. A program to encourage recruitment of Pleasanton and other Tri-Valley residents for local jobs would result in fewer commute trips (Program 4.4).

ENERGY GOALS, POLICIES, AND PROGRAMS

The following goals, policies, and programs, in addition to those contained in other Elements, constitute an action program to implement the objectives described in this element.

GOALS, POLICIES, AND PROGRAMS

Goal 1: Move toward a sustainable energy future that increases renewable energy use, energy conservation, energy efficiency, energy self-sufficiency, and limits energy-related financial burdens in Pleasanton.

City Leadership in Energy Sustainability

Policy 1: Reduce the City government’s energy demand.

- Program 1.1: Develop a comprehensive program to reduce City government energy consumption. As part of this program explore ways to designate one or more city employees, as determined by the city manager, to be responsible for energy conservation efforts.
- Program 1.2: Make the City a model by increasing the insulation and weatherization of its facilities, whenever possible. In particular, when remodeling City facilities, the City should increase insulation and weatherization.
- Program 1.3: Improve coordination between the school district and the City regarding the energy management of facilities.
- Program 1.4: Adopt a City “Green Fleet” policy to guide the City in purchasing energy efficient and clean vehicles.
- Program 1.5: Use the most energy efficient lighting, air conditioning, heating, and irrigation systems in City buildings and in landscaping. Use LED lighting, where feasible.
- Program 1.6: Encourage other public agencies within Pleasanton, including the Pleasanton Unified School District, to consider green-building practices in all public facility remodels and new construction.

Reducing Demand

Policy 2: Encourage energy efficiency and the conservation of electricity and natural gas through education.

- Program 2.1: Sponsor energy-related workshops and invite local builders, architects, homeowners, and business owners.
- Program 2.2: Distribute energy-related educational materials to schools, the library, the media, homeowners, and other organizations.

- Program 2.3: Create educational displays on energy conservation in public areas.
- Program 2.4: Display energy conservation and energy efficiency information on the City’s web page.
- Program 2.5: Develop an educational program about conservation, renewable energy sources, public and private energy-related programs, and rebates.
- Program 2.6: Promote using less energy during peak demand periods.
- Program 2.7: Share information about the link between water and electricity use, i.e., reducing water use reduces the need for electricity for water pumping.

Policy 3: Reduce demand for electricity and natural gas by establishing guidelines, programs, and incentives that would achieve this end.

- Program 3.1: Create incentives for energy efficiency. Continue to support PG&E incentives for conserving energy.
- Program 3.2: Identify where insulation would be most beneficial, and consider developing an incentive program to help owners, including apartment owners, insulate their buildings.
- Program 3.3: Develop a program or a policy that encourages the installation of alternative energy technology in residential, commercial, and public projects.
- Program 3.4: Develop educational materials to assist property owners in implementing energy efficient upgrades.
- Program 3.5: Establish financial incentives (such as fee waivers) to encourage the development of low energy homes.
- Program 3.6: Establish a category of low-energy homes under the City’s Growth Management Program, and establish a sub-allocation of housing units for this category.

Policy 4: Reduce heating and cooling energy use in the city.

- Program 4.1: Require a built environment that uses the properties of nature. For example: where feasible, requiring projects to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use; and, requiring projects to use regenerative energy heating and cooling source alternatives to fossil fuels.

Program: 4.2: Continue to implement parking lot tree planting standards that would substantially cool parking areas and help cool the surrounding environment. Encourage landscaping conducive to solar panels in areas where appropriate. –

Program 4.3: Reduce heat gain and air-conditioning demand by requiring light-colored paving material for roads, parking areas, and cool roofs in both new and redeveloped areas when feasible and cost effective.

Policy 5: Reduce electricity and natural gas demand by entering into partnerships with businesses.

Program 5.1: Enter into partnerships that would improve energy conservation and/or increase energy efficiency.

Policy 6: Preserve and strengthen the City’s green building policies and regulations.

Program 6.1: Better educate the public about green building opportunities.

Program 6.2: Review the *Green Building Ordinance* and increase the number of Green Points required, if feasible.

Program 6.3: Require green building practices to be used in all projects, including those not covered by the mandatory *Green Building Ordinance*, if feasible.

Program 6.4: Provide recognition for exemplary green building projects in the form of awards and presentations at Council meetings.

Program 6.5: Continue working with the stakeholders (architects, engineers, builders, property owners) who implement the *Green Building Ordinance* to ensure that the review and implementation process of the ordinance is working as intended.

Increasing Supply

Policy 7: Promote renewable energy.

Program 7.1: Encourage public and private entities to generate renewable energy.

Program 7.2: Use solar in public facilities and encourage the use of solar in private facilities, where feasible and cost effective.

- Program 7.3: Promote and encourage photovoltaic demonstration projects in association with public or private development.
- Program 7.4: Study the feasibility of starting or joining a photovoltaic co-op program and explore related financial considerations.
- Program 7.5: For new construction, require roofs that are strong enough and have roof truss spacing to hold photovoltaic panels, where feasible and cost effective.
- Program: 7.6: Require solar water heating and/or photovoltaic-ready roofs in new construction, i.e., roofs with wiring installed for a roof-mounted photovoltaic system, where feasible.
- Program 7.7: Support the production of alternative and renewable fuels and fuelling stations in Pleasanton.
- Program 7.8: Consider a photovoltaic joint venture project on private property.
- Program 7.9 Work with the City of Livermore and Spectrum Energy to develop a solar cities program or standardized solar-energy-system-installation designs for residences and potentially for businesses.
- Program7.10 : Explore the concept of funding energy efficiency upgrades for residential and commercial buildings as authorized by *AB 811*.

Policy 8: Consider other sustainable means of supplying energy in the city.

- Program 8.1: Explore the use of alternative energy technologies.
- Program 8.2: Continue to support Dublin San Ramon Services District’s use of methane from the sewage treatment plant for heating and mechanical energy.
- Program 8.3: Encourage distributed generation which is consistent with the *Generator Siting Ordinance*. This program would encourage relatively small electrical-generation facilities that could rely on a variety of energy sources such as natural gas, wind, and solar compared to larger facilities that rely almost entirely on diesel fuel. The City specifically targets large businesses to supply their own small electrical-generation facilities.

Financial Impacts

Policy 9: Support policies and programs that encourage stable and affordable electric and natural gas rates to benefit local economic vitality.

Program 9.1: Include energy cost impacts in the evaluation of potential new City programs.

Program 9.2: Continue to require new development to pay its fair share to underground distribution facilities fronting the development and total costs within the development.

Policy 10: Encourage businesses to implement appropriate sustainable energy projects.

Program 10.1: Encourage energy efficiency reviews.

Program 10.2: Develop a City-sponsored or managed program for businesses for energy efficiency reviews. Program elements could include an educational component, an informational component, financial and/or expedited permitting incentives, technical and design assistance, case studies, award programs, and other types of support.

Program 10.3: Require the installation of energy efficient lighting.

Program 10.4: Provide a program to publicly commend and acknowledge businesses or individuals that construct or remodel buildings that save more energy than required by *Title 24* or by the City's *Green Building Ordinance*.

Reliable Power

Policy 11: Strive to meet peak electricity and natural gas needs and to assure reliable power.

Program 11.1: Work to increase the use of distributed generation technologies that are consistent with the *Generator Siting Ordinance*.

Local Control

Policy 12: Achieve more local control of energy decisions.

Program 12.1: Fully assess the costs, benefits, and potential risks before deciding whether to implement Community Choice Aggregation.

Program 12.2: Consider a range of municipal utility options for Pleasanton.

Alliances

Policy 13: Join or work with regional energy alliances where there are clear benefits for Pleasanton.

Program 13.1: Identify and join existing energy alliances, and create energy alliances when appropriate. When possible, assume a leadership role in alliances.

Program 13.2: Work with PG&E to design and locate appropriate expansions of the gas and electric system.

See also the policy and programs in the Air Quality Element regarding the City joining International Council for Local Environmental Initiatives (ICLEI) – an organization of local governments that takes action on climate protection. Many of these policies and programs would also reduce energy usage.

Design of Energy Facilities

Policy 14: Minimize the visual impact of distribution and transmission lines and facilities.

Program 14.1: Underground local serving electrical transmission and distribution lines in residential and commercial areas where feasible.

Program 14.2: Place new regional serving transmission and distribution lines underground where feasible.

Program 14.3: Design utility substations in a visually appealing manner, and minimize their impact on nearby residential areas.

Policy 15: Experimental technology should not be used for power transmission in Pleasanton. Established technology appropriate for the environment should be used.

Transportation Energy

Goal 2: Save transportation energy by implementing a more effective transportation system.

Policy 16: Reduce vehicle fuel consumption in the City.

Program 16.1: Synchronize traffic lights and smooth traffic flow so that gas is not wasted accelerating and decelerating.