Union City Climate Protection Taskforce News Update March 2010

The **Union City Climate Protection Taskforce** provides a community-based communication forum, recognized by its members as an official community mechanism for the exchange of information on the Climate Action Plan process.

Task Force Mission Statement

"To develop and recommend to the City Council a Climate Action Plan that prioritizes practices and programs that will further our community's sustainability efforts and assist in reaching Union City's Greenhouse Gas Emissions Reduction Goal of 30 percent below 2005 levels by 2020."

Scheduled Taskforce Meetings for 2010

Land Use and Transportation
Thursday, February 11
7:00-9:00 PM

Building Energy
Thursday, March 11
7:00-9:00 PM

Water, Waste, & Green Infrastructure
Thursday, April 15
7:00-9:00 PM

Measures Review
Thursday, May 13
7:00-9:00 PM

Website

Taskforce meeting materials are posted to the Union City website at http://www.ci.union-city.ca.us/going_green.html

CAP Taskforce Meeting

Topic: Building Energy

Thursday, March 11, 7:00-9:00 pm

Agenda Attached

Ruggieri Center, Dining Room
33997 Alvarado-Niles Road
Union City, CA

Agenda Topics

Building Energy

The consumption of energy in buildings generates approximately 50 percent of Union City's total GHG emissions. Considerable reductions in electricity and natural gas consumption within residential, commercial, and industrial buildings will be necessary to achieve the community's 2020 adopted GHG target. Reducing these emissions could fall into two main areas: reducing the carbon intensity of the City's energy sources and improving the energy efficiency of existing and future buildings. To reduce the carbon intensity of energy, the City could work to increase the amount of renewable energy within the electricity grid's generation portfolio and encourage the installation of rooftop solar photovoltaic and solar hot water systems and other low carbon energy sources throughout the community. To improve the energy efficiency of the building stock, the City could mandate certain energy efficiency standards, and encourage greater levels of energy efficiency through a combination of education and incentives.

Example Building Energy Strategies:

- *Energy Efficiency in Existing Residential Buildings*
- *Energy Efficiency in Existing Commercial Buildings*
- *New Construction Standards*
- *Community Energy*
- *Renewable Energy*

Recap – Discussion highlights from the last meeting

At the last meeting, potential transportation and land use strategies and measures were discussed. Specific transportation and land use measures discussed addressed the following: walking and bicycling, public transit, rideshare opportunities, parking pricing, municipal operations, transit-oriented development and neighborhood commercial centers. For more information, see meeting presentation posted on the Going Green website.

34009 ALVARADO-NILES ROAD
UNION CITY, CALIFORNIA 94587

AGENDA

FOR THE CITY OF UNION CITY
CLIMATE PROTECTION TASK FORCE
THURSDAY, MARCH 11, 2010 AT 7:00 p.m.
RUGGIERI SENIOR CENTER
DINING ROOM (MAP ATTACHED*)
33997 ALVARADO-NILES ROAD

I. CALL TO ORDER:

A. PLEDGE OF ALLEGIANCE

B. ROLL CALL
Mayor Mark Green; Commissioner Ray Gonzales, Jr.; Pat Gacoscos; Paul Bisbiglia; Paddy Iyer; Jenny Cutter; Melvin Matsumoto; Nicholas Shutes; Shannon Valle; Commissioner Eva Kamakea; Christine McCoy
Alternate(s): Councilmember Manny Fernandez; Commissioner Roy Panlilio; Kevin Armonio; Darwin Mathison
Staff: Joan Malloy, ECD Director; Carmela Campbell, Planning Manager; Roberto Munoz, Recycling Coordinator; Avalon Schultz, Associate Planner; Rich Currie, USD General Manager; David Livingston, USD Plant Manager; Dana Hernandez, Union City Chamber of Commerce Staff

II. APPROVAL OF MINUTES: Minutes of February 11, 2009 *

III. ORAL COMMUNICATIONS:

IV. WRITTEN COMMUNICATIONS:

V. BUSINESS MATTERS:

A. OVERVIEW OF THE BUILDING ENERGY ACTION AREA

B. REVIEW OF CURRENT BUILDING ENERGY RELATED POLICIES

C. PRESENTATION OF PRELIMINARY GHG REDUCTION STRATEGIES FOR THE BUILDING ENERGY SECTOR *

Any writings or documents provided to a majority of the Task Force regarding any item on this agenda will be made available for public inspection at the City Clerk's Counter at City Hall located at 34009 Alvarado-Niles Road, Union City, California, during normal business hours.

D. DISCUSSION ON DEVELOPMENT AND PRIORITIZATION OF STRATEGIES AND MEASURE

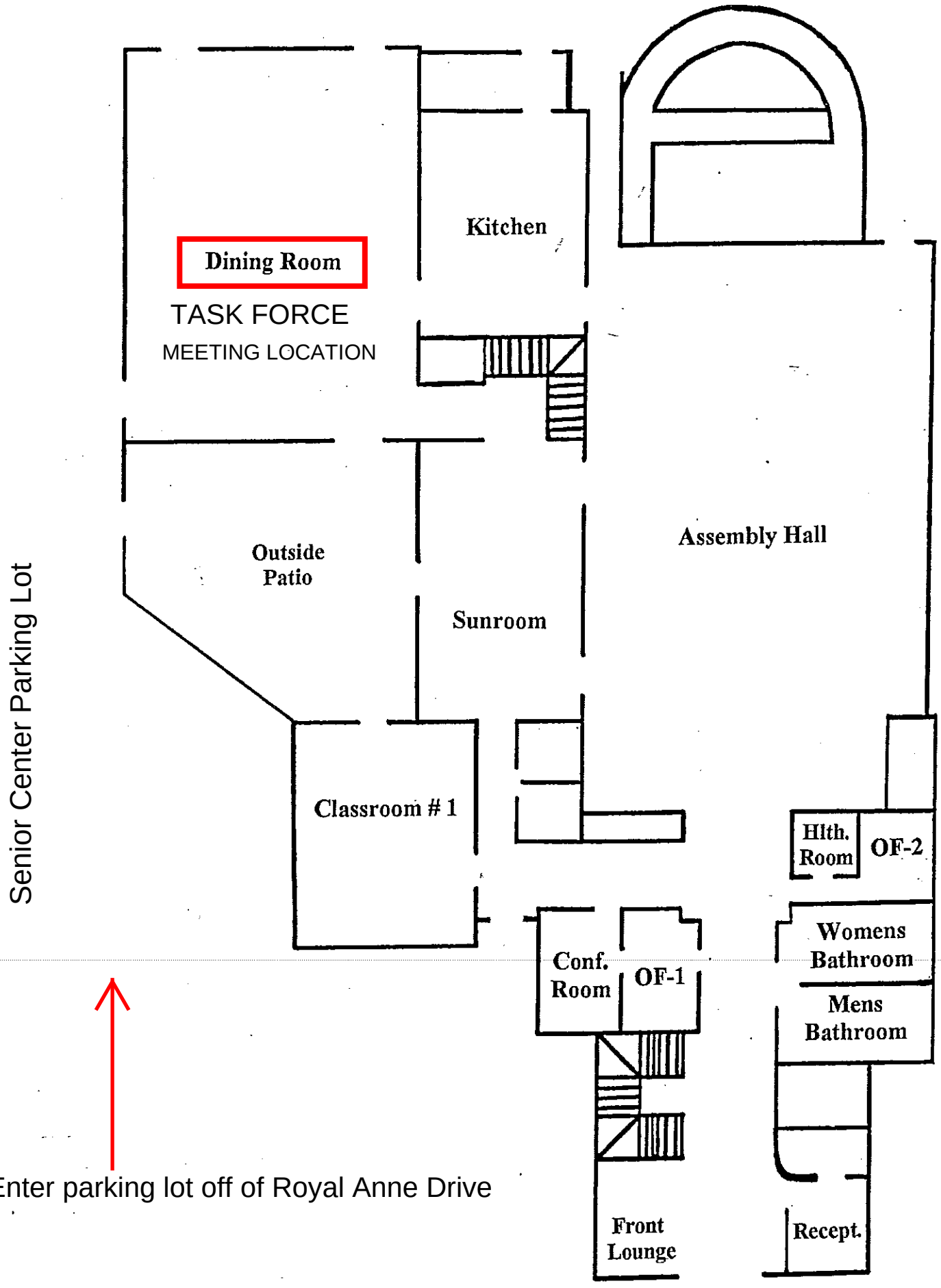
E. PUBLIC COMMENT

F. OVERVIEW OF UPCOMING MEETINGS

*Attachment(s) included with this packet

VI. GOOD OF THE ORDER:

VII. ADJOURNMENT:


Kitchen
Dining Room
TASK FORCE
MEETING LOCATION
Outside
Patio
Sunroom
Assembly Hall
Classroom # 1
Hlth.
Room
OF-2
Womens
Bathroom
Conf.
Room
OF-1
Mens
Bathroom
Front
Lounge
Recept.
Senior Center Parking Lot
Enter parking lot off of Royal Anne Drive

34009 ALVARADO-NILES ROAD
UNION CITY, CALIFORNIA 94587

MINUTES

FOR THE CITY OF UNION CITY
CLIMATE PROTECTION TASK FORCE
THURSDAY, FEBRUARY 11, 2010 AT 7:00 p.m.
RUGGIERI SENIOR CENTER
33997 ALVARADO-NILES ROAD

I. CALL TO ORDER:

The Meeting was called to order at 7:05 pm

A. PLEDGE OF ALLEGIANCE

B. ROLL CALL

Commissioner Ray Gonzales, Jr.; Pat Gacoscos; Paul Bisbiglia; Jenny Cutter; Melvin Matsumoto; Shannon Valle; Darwin Mathison
Staff: Carmela Campbell, Planning Manager; Roberto Munoz, Recycling Coordinator; Avalon Schultz, Associate Planner; Rich Currie, USD General Manager; David Livingston, USD Plant Manager; Dana Hernandez, Union City Chamber of Commerce Staff

II. APPROVAL OF MINUTES:

The minutes of December 10, 2009 were approved by Pat Gacoscos and seconded by Jenny Cutter.

III. ORAL COMMUNICATIONS: None

IV. WRITTEN COMMUNICATIONS: None

V. BUSINESS MATTERS:

A. OVERVIEW OF GREENHOUSE GAS (GHG) EMISSIONS FOR LAND USE AND TRANSPORTATION SECTORS

B. REVIEW OF CURRENT TRANSPORTATION AND LAND USE RELATED PROGRAMS AND POLICIES

Regarding agenda items A and B listed above, AECOM staff provided an overview of land use and transportation in Union City including a discussion of related GHG emissions The powerpoint presentation can be found on the City's Climate Protection Task Force meeting page which can be accessed on-line at http://www.ci.unioncity.ca.us/green_city/PowerPoint_GreenCity/100211_Union%20City%20CAP_Task%20Force_Land%20Use%20&%20Transportation[3].pdf

C. PRESENTATION OF PRELIMINARY LIST OF GHG REDUCTION STRATEGIES AND MEASURES

D. DISCUSSION REGARDING DEVELOPMENT AND PRIORITIZATION OF STRATEGIES AND MEASURES FOR LAND USE AND TRANSPORTATION SECTORS

Regarding items C and D listed above, AECOM staff prepared a handout that contained a list of sample transportation land use measures for discussion and prioritization by the Task Force. Attached to the minutes is a revised version of the handout that includes a summary of the comments received. Both the handout and the powerpoint presentation referenced above provide an overview of the sample measures.

E. OVERVIEW OF UPCOMING MEETINGS

The following is an overview of upcoming Task Force meetings.

- Thursday, March 11, 2010 - Discussion of sample measures to reduce greenhouse gas emissions associated with energy use
- Thursday, April 15, 2010 - Discussion of sample measures to reduce greenhouse gas emissions associated with water, waste, & green infrastructure
- Thursday, May 13, 2010 – Overview of Task Force recommendations regarding sample measures from February, March and April meetings

VI. GOOD OF THE ORDER: None

VII. ADJOURNMENT: Meetings was adjourned at 9:07 pm.

Taskforce Meeting: Building Energy Action Area

Preliminary Strategies for Discussion

The consumption of energy in buildings generates approximately 50 percent of Union City's total greenhouse gas (GHG) emissions. Considerable reductions in electricity and natural gas consumption within residential, commercial, and industrial buildings will be necessary to achieve the community's 2020 adopted GHG target. Reducing these emissions could fall into two main areas: reducing the carbon intensity of the City's energy sources and improving the energy efficiency of existing and future buildings. To reduce the carbon intensity of energy, the City could work to increase the amount of renewable energy within the electricity grid's generation portfolio and encourage the installation of rooftop solar photovoltaic and solar hot water systems and other low carbon energy sources throughout the community. To improve the energy efficiency of the building stock, the City could mandate certain energy efficiency standards, and encourage greater levels of energy efficiency through a combination of education and incentives.

This preliminary list has been put together for discussion with the Task Force following an analysis of existing policies and programs in Union City, and discussions with City staff. This document is not meant to be comprehensive at this point; new strategies will likely be developed with input from the City and Task Force. We wish to get input on the strategies presented and hope that this document helps to generate new ideas. The Building Energy Strategies addressed in this document are:

1. Energy Efficiency in Existing Residential Buildings
2. Energy Efficiency in Existing Commercial Buildings
3. New Construction Standards
4. Community Energy
5. Renewable Energy

Rating

1

2

Rating (*Task Force Members, please complete before meeting, if possible*)

In this box, please rate your initial take on the appropriateness of a given strategy. The number in the box represents the number in the "Ideas for Potential Measures" section.

1 = highly *inappropriate* for Union City

5 = highly *appropriate* for Union City

Example: A Residential Energy Conservation Ordinance (RECO) may be a highly desirable policy due to its energy reduction benefits, but its costs may be a deterrent, making it a 3-4 rating.

Preliminary Estimation of GHG Reduction Potential

GHG

L M H

Building energy GHG inventory ~185,000 MT CO_2e in 2005 (Metric Tons of Carbon Dioxide Equivalent)

Low (L): less than 2,500 MT CO_2e

Medium (M): between 2,500 and 10,000 MT CO_2e

High (H): greater than 10,000 MT CO_2e

$

L M H

Preliminary Estimation of Cost to Resident or Building Owner

Low (L): less than $250

Medium (M): between $250 and $1,000

High (H): greater than $1,000#

Energy Efficiency in Existing Residential Buildings

Approximately 80 percent of the housing stock in Union City was built prior to the adoption of California's Title-24 energy standards in 1978. Improving the energy efficiency of the City's existing housing stock will therefore reduce GHG emissions, while also decreasing home energy bills. The City has many options to stimulate energy efficiency improvements in existing residential buildings, including:

Ideas for Potential Measures:

Rating

1. **Promote existing incentive programs through outreach.** The City can work to extend and improve on utility (PG&E) and other federal (Department of Energy, Environmental Protection Agency) incentive programs for residential homes, through, for example: (1) "One-stop" centers for information on conservation; (2) Organize workshops with information from utilities; or (3) Work to target marketing to owners of older homes, landlords, new homeowners, and owners undertaking renovations. *Note that the City already links to PG&E rebate programs online and details on low-income energy services.*

    a. **Energy efficient mortgages:** Promote energy efficiency mortgages (e.g., U.S. Dept. Housing and Urban Development).

    b. Promote services such as energy audits and technical assistance to **existing residential buildings occupied by low-income households**. *Note that City already promotes the Department of Energy's Weatherization program.*

    c. **Promote Property-Assessed Clean Energy (PACE) financing program homeowners.** Administered through CaliforniaFIRST, the PACE program allows property owners to finance the installation of energy and water improvements on their home and pay the amount back as a line item on their property tax bill. *The City Council will be considering participation in the program at their regularly scheduled meeting on March 9, 2010.*

2. **Adopt a Residential Energy Conservation Ordinance (RECO).** A RECO is a policy tool that requires energy efficiency upgrades in existing housing at point of sale. The cost of the upgrades can be paid for by the seller or purchaser. The RECO stipulates a low-cost package of measures that will approximately can increase energy efficiency somewhere in the range of 10-20 percent, from a package of basic low cost measures, depending on how the RECO is designed. Currently, the City of Berkeley and San Francisco have RECOs, while many of jurisdictions are working on developing them as part of their CAPs.

3. **Energy Performance Certificates (EPC)** present the energy efficiency of homes on a specified scale (e.g. the UK uses a scale of A-G), at point-of-sale. The most efficient homes are in band A, with lower ratings assigned to buildings with lower energy efficiencies. EPCs are produced using standard methods and assumptions about energy usage so that the energy efficiency of one building can easily be compared with another building of the same type. This allows prospective buyers, tenants, owners, occupiers and purchasers to see information on the energy efficiency and carbon emissions from their building so they can consider energy efficiency and fuel costs as part of their investment.

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Improvements to commercial building energy efficiency will help community businesses reduce long-term energy costs and provide important GHG emissions reductions. The greatest barriers to these improvements are lack of information about efficient practices and scarcity of low-cost financing for the initial capital costs.

GHG	$
H	L - H

Ideas for Potential Measures:

Rating

1. **Promote existing incentive programs through outreach.** The City can work to extend and improve on utility (PG&E) and other federal (Department of Energy, Environmental Protection Agency) incentive programs, through for commercial buildings, for example: (1) “One-stop” centers for information on conservation and energy audits; (2) Organize workshops with information from utilities; or (3) Work to target marketing to owners of older homes, landlords, new homeowners, and owners undertaking renovations. *Note that the City already links to PG&E rebate programs online and details on low-income energy services.*

    a. **Promote Property-Assessed Clean Energy (PACE) financing program commercial building owners.** Administered through CaliforniaFIRST, the PACE program allows property owners to finance the installation of energy and water improvements on their building pay the amount back as a line item on their property tax bill. *The City Council will be considering participation in the program at their regularly scheduled meeting on March 9, 2010.*

2. **Adopt a Commercial Energy Conservation Ordinance (CECO)**, which ensures that commercial buildings receive energy efficiency upgrades at point-of-sale. The CECO stipulates a low-cost package of measures that can increase energy efficiency somewhere in the range of 10-20 percent, from a package of basic low-cost measures, depending on how the CECO is designed.

3. **Energy Performance Certificates (EPC)** – *see additional explanation in the “Energy Efficiency in Existing Residential Buildings” section*

    One potential rating system on which to base an EPC program - **The Building Energy Quotient program (Building EQ)** includes both building design and operations ratings for all non-residential building types. It also will provide a detailed certificate with data on actual energy use, energy demand profiles, indoor air quality and other information that will enable building owners to evaluate and reduce their building’s energy use. The program is administered by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).

4. For Existing Municipal Buildings:

    a. Evaluate potential for including **an energy efficiency standard for municipal buildings** as part of Union City’s Green Building Ordinance.

    b. Enhance and implement **standard operating procedures** to improve energy efficiency of ongoing building operations.

    c. Perform **energy efficiency upgrades** to existing City buildings and outdoor lighting.

    d. **Purchase renewable energy certificates (RECs) for City facilities.** Since PG&E does not offer a green power purchase options, the City can buy RECs, which represent the environmental, social, and other positive attributes of power generated by renewable resources.

Energy Performance in New Construction

New construction offers a significant opportunity for achieving high levels of energy efficiency through advanced materials and design.

Union City has recently established a green building and landscaping ordinance, which is designed to reduce landfill waste, conserve natural resources, increase energy efficiency, lower costs associated with operations and maintenance, improve indoor air quality, and minimize impacts on the natural environment. The projects that will be held to this standard include:

1. City-sponsored and public partnership projects.
2. Privately funded projects.
    a. Residential: New construction, additions, or remodels greater than 500 sf.
    b. Non-Residential: New construction, additions, or remodels greater than 1,000 sf.

Built-it-Green's GreenPoint system and the U.S. Green Building Council's LEED™ (Leadership in Energy and Environmental Design) standards are the standards referenced for applicable projects. *See attached chart regarding the City's Green Building requirements for private development.*

Ideas for Potential Measures:

1. **Promote existing incentive programs, such as PG&E's Savings by Design.** Savings by Design is a program offered by PG&E to encourage high-performance new building design and construction for commercial buildings. The program offers building owners and their design teams a wide range of services, such as Design Assistance; Design Team Incentives; Owner Incentives; and an educational resource, Energy Design Resources.
2. **Implement a program to offer incentives for new developments that are more energy efficient than state energy standards.**
    a. **Priority-permitting for buildings that exceed current energy efficiency standards in Green Building Ordinance.** Priority permitting would give greater assistance and facilitation through the permitting process. The reduced permitting time can generate significant savings for developers that are paying interest on construction loans.
3. **Evaluate potential for increasing energy efficiency standards and/or expanding applicability to projects that aren't currently covered within Union City's Green Building Ordinance.** Specific examples of modified standards may include: 1) a tighter energy budget, such as a specified percent reduction in total energy use; or 2) prescriptive measures, which might include more insulation, solar water heating, or more efficient energy/water appliances.
4. **Energy Performance Certificates (EPC)** – *see additional explanation in the "Energy Efficiency in Existing Residential Buildings" section*
5. **Separate metering for energy consumption** for each unit in residential, commercial, or industrial, or institutional buildings, where feasible.
6. **Encourage new homes to be "solar ready":**
    - Oriented for maximum solar exposure in conjunction with other siting considerations, including but not limited to, required setbacks, aesthetic concerns, visibility, etc.
    - Pre-wired and pre-plumbed for solar PV systems and solar water heaters
    - Have strong enough roofs to handle the weight of the solar system

Rating

Community Energy

Smart Grid

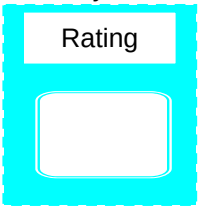
The existing electricity delivery system in Union City relies on 100-year old technology: electricity flows over the grid from far-away power plants to consumers and reliability is ensured by maintaining excess capacity. The result is an inefficient system that generates large amounts of GHG emissions, relies heavily on fossil fuel power plants, and is not well-suited to distribute renewable energy sources.

The smart grid is an emerging energy management system, which can significantly improve how electricity is generated, delivered, and consumed. The smart grid can reduce energy demand, improve integration of distributed energy production, and increase the efficiency of electricity transmission and distribution. In essence, the smart grid helps utilities and their customers make better-informed energy decisions. PG&E's program to update customers to the SmartMeter™ system is the crucial first step in enabling the smart grid. With the SmartMeter™ system, PG&E can collect data much more frequently than before – daily for gas and hourly for electric.

Of 25,000 SmartMeter™ customers enrolled in SmartRate throughout PG&E's service area, nearly 70% saved on their summer energy bills in 2009. Residential customers saved up to $500, with an average savings of $30.

Examples of technology that is compatible with the smart grid:

- Demand response programs that shave peak loads, reducing the need for expensive (and polluting) peaking power plants
- Sensors and meters that show exactly where power is being used, so utilities can expand only where needed and when needed
- Intelligent in-home interfaces to help residents monitor and manage their energy use (ditto for businesses)
- Electronics and control software that monitor power flows in real time, to run existing lines much closer to capacity without compromising reliability
- Sensors and software to remotely monitor expensive equipment to know when it really needs to be replaced



Ideas for Potential Measures:

1. Work with PG&E and other Alameda County cities to accelerate "Smart Grid" integration in the community.

District Systems

District heating and cooling systems could provide energy savings for new higher density mixed-use development in Union City. In a conventional urban center, each building has its own individual heating and cooling equipment. A district energy system has a central plant that provides heating and cooling through a network of pipes to all buildings within a neighborhood.

Compact communities are ideally served by district plant and piping systems supplying hot water and building heat. Economies of scale make district systems significantly more energy efficient that single building systems. District energy plants can also cogenerate electricity, are typically natural gas fuelled but can be powered with renewables such as biomass.

Other renewable electrical generators are also more economically installed at a district scale; it costs less to install one large solar array to serve a neighborhood than solar panels on individual buildings. District-scale cogeneration and solar arrays might serve electric vehicle charging stations as well.

Ideas for Potential Measures:

1. Evaluate the potential for district energy systems in mixed-use and higher density areas of the community and develop implementation plan for cost-effective systems.

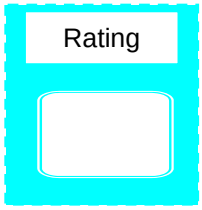
Community Choice Aggregation (CCA)

Community Choice Aggregation (CCA) permits the City to aggregate the electric loads of residents, businesses, and municipal facilities to facilitate the purchase and sale of electrical energy. A CCA is responsible for providing the energy commodity (i.e., the electrons themselves) to its constituents—which may or may not entail ownership of electric-generating resources.

Many communities want to increase the amount of non-polluting, renewable energy they use, and are looking at Community Choice Aggregation as a mechanism for doing so. Local control over retail electric rates is another important motivation for initiating CCA. Investor-owned utilities currently propose service rates for electric generation, transmission and distribution, and the California Public Utilities Commission either approves or rejects these proposals. Because decisions are for classes of customers across the utility's territory, customers in Arcata, for example, pay the same rates as those in Fresno.

Historically, public utilities across the nation have been able to offer rates that are 15-20% lower than investor owned utilities. And as an example of dependability, Roseville Electric has been selected as the nation's most reliable utility serving less than 100,000 customers for five years in a row. Under CCA, decisions about rates, generating resources, and public benefit programs will be made locally and be accountable to local customers.

Inspired by Climate Protection efforts, CCA has spread to cities throughout the Bay Area, and throughout the state. In 2007, forty California local governments are in the process of implementing CCA, virtually all of them seeking to double, triple or quadruple the green power levels (Renewable Portfolio Standard, or "RPS) of the state's three Investor-Owned Utilities. Marin, Oakland and Berkeley are also seeking to employ San Francisco-style revenue bonds and implement a 51% RPS by 2017.



Ideas for Potential Measures:

1. Research the potential for community choice aggregation in Union City.

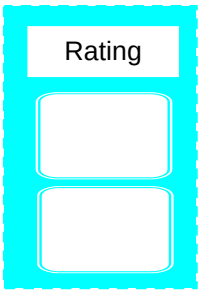
FUEL MIX	Union City (PG&E)	National
Non-Hydro Renewables	9.4%	2.1%
Hydro	17.7%	6.5%
Nuclear	16.5%	19.3%
Oil	1.2%	3.0%
Gas	42.3%	18.8%
Coal	11.9%	49.6%

Source: U.S. EPA

Renewable Energy

To achieve the City's GHG reduction targets, Union City could choose to expand the renewable energy generation within the City. The renewable energy strategy could focus the two proven, cost-effective renewable technologies for Union City: solar photovoltaic (PV) and solar hot water systems, while investigating the possibility of implementing other renewable energy related programs.

General Renewable/Low-Carbon Energy



Ideas for Potential Measures:

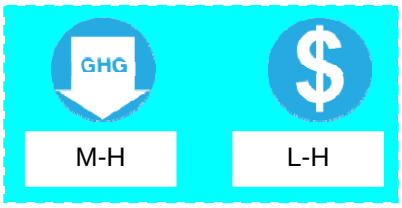
1. Evaluate the potential for **wind, combined heat and power, and anaerobic digestion** power generation opportunities in the City.
2. Evaluate **ground source heating or cooling** opportunities for new construction.

Solar Photovoltaic (PV) and Solar Hot Water Systems

Planning for solar access and orientation is an important step in building energy efficient communities. Active solar features are mechanical systems (e.g. solar panels) that generate power from the sun's rays, thereby reducing the amount of energy that needs to be purchased from a utility company.

Solar PV

Commercial and industrial rooftops and parking lots also provide an excellent opportunity for solar energy generation, as they tend to have large, flat roofs that are well-suited for PV installation.



According to California's GoSolar Initiative, the cost of solar PV is approximately $9/Watt– $10/Watt for residential systems, and often times less for commercial systems. As more systems are installed, prices are expected to go down. Incentives are in the range of $1.50/Watt–$2.50/Watt, depending on region, building type and system design. The average residential system is 4 kiloWatts (kW).

Solar Hot Water Systems

A solar water heater uses the sun's warmth rather than electricity or gas to heat water for your home, pool or spa. A basic system consists of black flat-plate collectors mounted on a roof. The collector absorbs the sun's heat and transfers it to water that circulates through tubing in the collector.

A solar water heater can reduce natural gas consumption by 40-70 percent, in addition to not producing air pollution or GHG emissions. It lowers energy bills, especially if the current water heater runs on electricity, and generally is low maintenance. A solar water heater is usually set up to serve as a pre-heater for a conventional water heater—ensuring that adequate amounts of hot water are available at all times.

The cost of a solar hot water system depends on system size and other details. For a solar water heater for a pool, costs vary widely so get several quotes. A system for household use or space heating typically costs from $4,000-$8,000 installed.

There are also commercial-scale applications for solar hot water systems. Commercial-scale solar water heating (SWH) systems are designed to provide large quantities of hot water to non-residential and multi-

family buildings, heated using solar energy. SWH systems can dramatically reduce the amount of natural gas or electricity used for heating water in conventional systems.

Rating

Ideas for Potential Measures:

1. **Solar Power Districts** in commercial and industrial areas with optimal solar orientation and building structure conditions. Within each Solar Power District, the City could explore opportunities to remove physical and Code barriers to support installation of solar panels and solar water heating. A streamlined permitting process could be developed to further promote and expedite the installation of PV systems and solar water heating systems and reduce associated costs.
    a. **Promote Property-Assessed Clean Energy (PACE) financing program residential and commercial building owners in Solar Power District**. *See previous sections for more detail on PACE. This program is being developed by Union City currently.*
    b. **Facilitate power purchase agreements (PPAs) in Solar Power Districts to promote installation of solar PV systems.** A solar PPA is a financial arrangement in which a third-party developer owns, operates, and maintains the solar PV system, and a host customer agrees to site the system on its roof or elsewhere on its property and purchases the system's electric output from the solar services provider for a predetermined period. This financial arrangement allows the host customer to receive stable, and sometimes lower cost electricity, while the solar services provider or another party acquires valuable financial benefits such as tax credits and income generated from the sale of electricity to the host customer.
2. **Enforce state laws relating to the utilization of solar energy:**
    - Adopt a solar access ordinance and/or include more specific or stronger requirements in the subdivision ordinance
    - Review homeowner's association requirements to ensure they do not prohibit the use of rooftop solar equipment.
3. **Provide developers and builders information about renewable energy incentive and energy efficiency programs** offered by the California Solar Initiative, California Energy Commission, U.S. Department of Energy, and PG&E when they apply for permits and encourage them to participate.
4. **Promote PG&E's Pacific Energy Center renewable energy workshops** to encourage commercial customers to install photovoltaics and solar water heating on store roofs and parking lots. The City could also explore opportunities to bring some workshops to the Union City area.
5. **Promote the California Solar Initiative's solar water heating incentive program to subsidize the purchase of solar water heaters** and replace/ recycle old water heaters in homes and commercial buildings.
6. **Require solar water heaters** for all new construction and retrofitting in existing homes at point of sale or during substantial renovation**.**

Your Comments & Suggestions

Energy Efficiency in Existing Residential Buildings

Energy Efficiency in Existing Commercial Buildings

New Construction Standards

Community Energy

Renewable Energy