

Planning Commission STAFF REPORT

Meeting Date: 05/29/13

Agenda Item # 8.A.



Planning and Inspection Department
City of Santa Clara, California



File No.(s): Climate Action Plan (PLN2012-09365)
Location: Citywide
Applicant/Owner: City of Santa Clara
Subject: Review of the draft greenhouse gas (GHG) reduction measures to be included in the City of Santa Clara's Climate Action Plan
CEQA Determination: Negative Declaration
Project Planner: Payal Bhagat, (408) 615-2450, PBhagat@santaclaraca.gov

EXECUTIVE SUMMARY:

The City of Santa Clara is currently in the process of developing a policy document that identifies sources of greenhouse gas emissions caused by actions within the City and estimates how these emissions may change over time. This document is called a Climate Action Plan (CAP). The CAP provides strategies to reduce the greenhouse gas emission levels to meet legislative requirements outlined in AB32 (The California Global Warming Act 2006) and SB375 (the Sustainable Communities and Climate Projection Act of 2008). The 2010-2035 City of Santa Clara General Plan 2010-2035 requires the adoption of a Climate Action Plan prior to the year 2015. The CAP will be a unique document that builds upon existing efforts of City departments, including Silicon Valley Power, and business and community groups to reduce greenhouse gas emissions and will identify future efforts needed to achieve the state goals. The CAP will provide performance metrics and tracking mechanisms to monitor future progress towards meeting the City's greenhouse gas reduction goals.

On March 26, 2013, city staff introduced the project through a presentation to City Council. On April 10, 2013, a similar introductory presentation to Planning Commission was given. In addition to the presentations at City Council and Planning Commission, staff has undertaken two pop-up workshops at the Senior Center and the Central Library respectively, a City of Santa Clara business stakeholders outreach meeting, and an informal open house.

The following steps have been taken in preparation of the City's Climate Action Plan:

- Prepared the communitywide and municipal operations emissions inventory for the baseline year 2008;
- Established the greenhouse gas (GHG) reduction target;
- Solicited input from the community, business stakeholders, and decision makers;
- Reviewed current City programs and quantified the greenhouse gas reductions resulting from the implementation of these programs;
- In coordination with city staff from different city departments, prepared a list of potential greenhouse gas (GHG) reduction measures in five major areas: transportation, energy, off-road construction equipment, waste disposal, and water and wastewater;
- Categorized the potential reduction measures by implementation feasibility, by time frame (near (by 2015), mid (by 2020), or long-term (by 2035)), barriers to implementation, and resources needed for implementation; and,

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- Developed and quantified draft greenhouse gas (GHG) reduction measures.

Attached to this staff report are the draft greenhouse gas (GHG) reduction measures currently proposed to be included in the City's Climate Action Plan. City staff will be presenting these reduction measures through a presentation to Planning Commission to solicit the Commission's feedback and direction.

Documents Related to this Report:

1) Draft Greenhouse Gas (GHG) Reduction Measures

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Greenhouse Gas Reduction Scenario

To create a Qualified Greenhouse Gas (GHG) Reduction Strategy that is consistent with Bay Area Air Quality Management District (BAAQMD) guidelines and reduces emissions at least 15% below baseline 2008 levels, the City of Santa Clara must identify and implement measures and actions to reduce emissions by 574,080 metric tons of carbon dioxide equivalents (MTCO₂e) by 2020. To achieve this GHG reduction target, a GHG reduction scenario has been established, comprised of the following categories:

- Existing Activities
 - State Reductions
 - Local Reductions
- Proposed CAP Measures for 2020
 - Coal Free + Large Renewables
 - Energy Efficiency
 - Other Measures
- Reach Measures for 2035

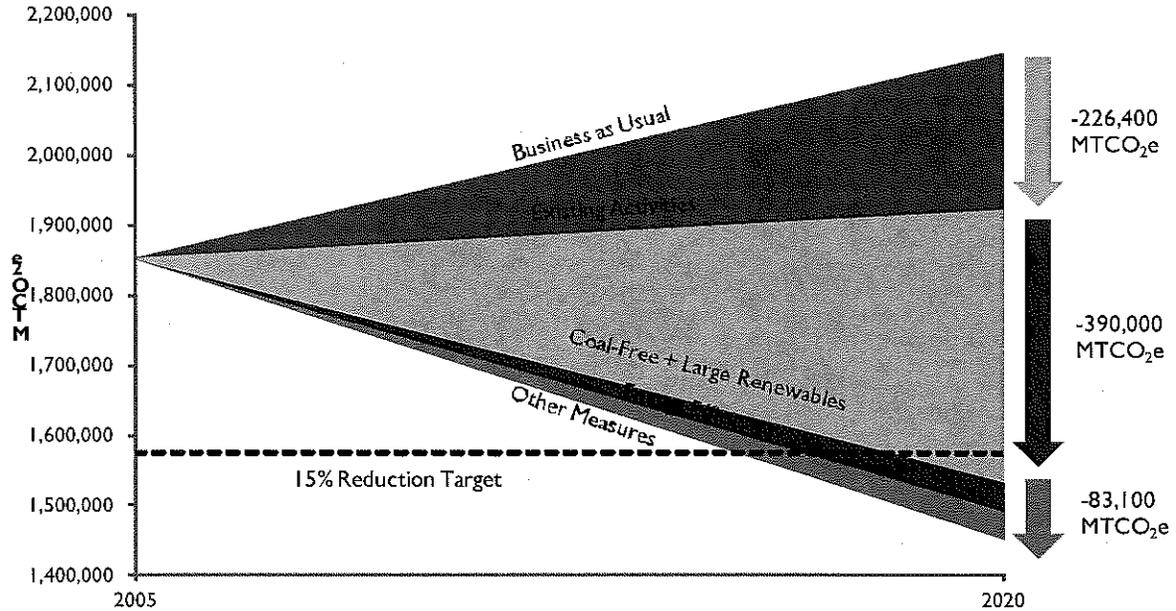
These categories and their contributions to achieving the GHG reduction target of 15% below 2008 levels by 2020 are summarized in Table 1 and Figure 1, and described in more detail throughout this document.

Table 1 – 2020 Greenhouse Gas Emissions Reduction Scenario

Activity or Topic Area	2020 (MTCO ₂ e)
State Programs	-179,600
Local Activities	-46,800
Coal Free + Large Renewables	-390,000
Energy Efficiency	-42,600
Water	-140
Waste	-20,650
Off-Road Equipment	-6,200
Transportation and Land Use	-13,260
Urban Heat Island Effect	-240
Total	-699,500
2020 Business-as-Usual Emissions	2,148,680
2020 Emissions Level with CAP	1,449,200
2008 Baseline Emissions	1,852,470
% Reduction below Baseline	-21.8%



Figure 1 – 2020 Greenhouse Gas Reduction Scenario



Existing Activity Emissions Reductions

Prior to considering new policies or programs to include in the Climate Action Plan (CAP), it is important to assess how emissions have already been reduced since 2008 through the implementation of state regulations or local activities. Below is a brief summary of programs considered and associated local emissions reduction benefits to be achieved in Santa Clara by 2020.

State Programs and Regulations

Emissions Reduced in 2020: -179,600 MTCO₂e

Several actions undertaken or required by the State of California will reduce emissions in Santa Clara. These actions include implementation of vehicle fuel efficiency standards (Pavley), statewide building codes and standards (Title 24 updates), and directives to utility providers to meet the renewables portfolio standard.

Local Activities

Emissions Reduced in 2020: -46,800 MTCO₂e

Since 2008, the City has undertaken numerous activities to reduce emissions. These activities cover efforts both at City facilities and throughout the community. They include:

- Energy Efficiency and Conservation Block Grant (EECBG) lighting and photovoltaics (PV)



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- Tree planting
- City PV installations
- Neighborhood Solar Program
- Santa Clara Green Power
- Residential audits
- PV rebates
- Residential energy efficiency rebates
- Commercial energy efficiency rebates
- Waste reduction
- Water conservation programs

Proposed Climate Action Plan Topics

Proposed measures to fill the local emissions reduction gap and achieve an emissions reduction target consistent with Assembly Bill (AB 32) guidance are identified below. These proposed measures are split into three main categories:

- Coal-Free + Large Renewables
- Energy Efficiency Programs
- Other Measures

The discussion below provides the likely GHG emissions reduction potential of each measure topic, and a brief description of the contents of each topic.

Coal Free + Large Renewables

Emissions Reduced in 2020: -390,000 MTCO_{2e}

Silicon Valley Power's (SVP) provision of low-cost electricity to customers plays a critical role in sustaining Santa Clara's industrial and high-tech economy. Opportunities to reduce emissions from energy in Santa Clara are focused on reducing overall electricity use, and achieving greater reliance on electricity sources with lower GHG intensities. Since nearly half (48%) of Santa Clara's existing emissions result from electricity use, achieving the 33% Renewables Portfolio Standard and removing GHG-intensive sources of electricity such as coal are key proposed components of the CAP.

Energy Efficiency Programs

Emissions Reduced in 2020: -42,600 MTCO_{2e}

SVP has established annual energy efficiency targets for fiscal years 2013-2021, and these targets are updated every three years. On an annual basis, SVP reviews both the residential and nonresidential energy efficiency programs and evaluates new opportunities to incentivize additional energy efficiency in the community. Rather than dictate specific energy efficiency programs or actions, the CAP will demonstrate the emissions reduction benefits of SVP achieving the established energy efficiency targets and offer examples of effective programs that can achieve the targets.



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Other Measures

Emissions Reduced in 2020: -40,500 MTCO_{2e}

Other proposed CAP measures address emissions from the transportation, solid waste, water, and off-road equipment sectors. While a large portion of the proposed CAP addresses energy sources and uses, it is important to identify a balanced set of measures that address emissions from all sectors and activities in the community.

Proposed Climate Action Plan Measures

Table 2 lists each proposed CAP measure, its estimated effectiveness in reducing GHG emissions, and applicability to different types of activities within the community and City government. Following Planning Commission review of these measures, action steps and responsible departments will be defined for each measure. These items will be presented in the Draft CAP.

Table 2 - Proposed Climate Action Plan Measures (2020)

Topic	Measure	2020 MTCO _{2e} Reduced	Applicability	Performance Metrics
I. Coal Free + Large Renewables				
Coal-free by 2020	1.1: Replace the use of coal in Silicon Valley Power's portfolio with natural gas by 2020.	-388,800	<input checked="" type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	100% of coal power replaced with natural gas!
Renewable energy resources	1.2: Investigate the use of City-owned property for large-scale renewable energy projects.	Supportive	<input type="checkbox"/> Existing Development <input type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	Supportive
Utility-installed renewables	1.3: Develop up to 5 solar PV projects with a total installed capacity of 3 to 5 MW.	-1,200	<input checked="" type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input type="checkbox"/> Municipal	New solar PV projects generating 5 MW in total installed capacity

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Topic	Measure	2020 MTCO _{2e} Reduced	Applicability	Performance Metrics
2. Energy Efficiency				
Community electricity efficiency	2.1: Achieve City-adopted electricity efficiency targets to reduce community-wide electricity use by 5% through incentives, pilot projects, and rebate programs.	-27,600	<input checked="" type="checkbox"/> Existing Development <input type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	Cumulative Savings: Residential: 3,600 MWh Commercial: 44,400 MWh Industrial: 111,100 MWh
Community natural gas efficiency	2.2: Facilitate voluntary natural gas retrofits in 5% of multi-family homes, 7% of single-family homes, and 7% of nonresidential space through strategic partnerships that connect residents and business owners to available financing resources.	-12,100	<input checked="" type="checkbox"/> Existing Development <input type="checkbox"/> New Development <input type="checkbox"/> Municipal	1,700 single-family homes each save an average of 390 therms per year; 1,000 multi-family homes each save 780 therms per year 410 commercial accounts each save 140 therms per year; 130 industrial accounts each save 5,900 therms per year
Liquid-cooled servers	2.3: Require new data centers with rack power ratings of 15 kW or more to consider the feasibility of utilizing liquid-cooled server technology, and to use the technology if feasible.	-400	<input type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input type="checkbox"/> Municipal	10% of new data centers, each achieve a 31% reduction in cooling electricity use.
Customer-installed solar	2.4: Incentivize and facilitate the installation of 6 MW of customer-owned residential and nonresidential solar PV projects.	-1,500	<input checked="" type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input type="checkbox"/> Municipal	Installation of 6,000 kW of solar PV on homes, nonresidential buildings, parking garages, parking lots, and other feasible locations.



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Topic	Measure	2020 MTCO _{2e} Reduced	Applicability	Performance Metrics
Municipal energy efficiency	2.5: Reduce municipal electricity use by 10% through comprehensive energy retrofits of existing equipment, and implementation of previously identified energy efficiency projects.	-700	<input type="checkbox"/> Existing Development <input type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	Complete all previously identified energy efficiency projects and replace inefficient equipment to reduce electricity use by 30% and natural gas use by 28% in 50% of municipal buildings and facilities
Municipal renewables	2.6: Install 1,000 kW of solar or other renewables at City-owned facilities.	-300	<input type="checkbox"/> Existing Development <input type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	1,000 kW of PV solar installed and capable of producing 1,440,000 kWh per year in 2020
3. Water				
Urban Water Management Plan targets	3.1: Meet the water conservation goals presented in the 2010 Urban Water Management Plan to reduce per capita water use by 2020.	-140	<input checked="" type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input type="checkbox"/> Municipal	Achieve 100% compliance of SBX7-7 reduction goal, reducing water use by 1,362 acre-feet
4. Waste				
Food waste	4.1: Support the expansion of existing food waste and composting collection routes to provide composting services to 25% of existing restaurants.	-150	<input checked="" type="checkbox"/> Existing Development <input type="checkbox"/> New Development <input type="checkbox"/> Municipal	Participation of 120 restaurants, each producing an average of 3 tons of food waste per year.
Increased waste diversion	4.2: Work with regional partners to increase solid waste diversion to 80%.	-20,500	<input checked="" type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	Increase the waste diversion rate from 58% to 80% to reduce landfilled waste by 109,650 tons.



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Topic	Measure	2020 MTCO _{2e} Reduced	Applicability	Performance Metrics
5. Off-Road Equipment				
Lawn and garden	5.1: Support and facilitate a community-wide transition to electric outdoor lawn and garden equipment through outreach, coordination with the BAAQMD, and outdoor electrical outlet requirements for new development.	-100	<input checked="" type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	Exchange 1,170 conventional leaf blowers and 130 lawnmowers for electric models.
Construction fuels	5.2: Encourage construction projects to comply with BAAQMD best management practices including alternative-fueled vehicles and equipment.	-6,100	<input type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	30% of construction equipment switches from conventional technologies to hybrid, Compressed Natural Gas (CNG), electric, or biodiesel
6. Transportation and Land Use				
Mandatory Transportation Demand Management (TDM) reporting requirements	6.1: Require all new nonresidential development to implement a TDM program which reduces drive-alone trips, and supports ridesharing, public transit, walking, and bicycling.	-1,290	<input type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	TDM reporting accounting for 50% of all new employees in the City, reducing both peak hour and daily trips by 20%.
Privately sponsored commute shuttles	6.2: Partner with local employers to establish or expand existing worker shuttle programs.	-40	<input checked="" type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input type="checkbox"/> Municipal	TDM reporting accounting for 7% of all employees, with 1% participating in private shuttle services.



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Topic	Measure	2020 MTCO _{2e} Reduced	Applicability	Performance Metrics
Voluntary TDM reporting requirements	6.3: Encourage existing nonresidential development to implement and report on a suite of TDM strategies including transit subsidy passes, employer rideshare assistance, transit and bicycle subsidies, car and bike sharing solutions, and others.	-430	<input checked="" type="checkbox"/> Existing Development <input type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	TDM reporting accounting for 7% of <i>all</i> employees, reducing peak hour and daily trips by 20%.
New resident transit passes	6.4: Require all new residential development within a half mile of a transit hub or corridor to provide transit passes to new residents as part of an orientation to the regional transit system schedule, location, and online resources.	-2,580	<input type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input type="checkbox"/> Municipal	Provide a \$3.00 daily subsidy for all residents of new development projects located within ½ mile of a transit hub or corridor. Assumes 50% of all new development in the City will be located within ½ mile of a transit hub or corridor.
Below market-rate housing	6.5: Work with the Housing Authority of the County of Santa Clara (HACSC), and the California Department of Housing and Community Development (HCD) to assure 10% of new multi-family housing is affordable to moderate- and low-income households.	-260	<input type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input type="checkbox"/> Municipal	Require 420 units of new multi-family housing to be priced at moderate- to low-income levels by 2020.
Market-rate parking in focus areas	6.6: Implement a market-rate plan for public parking spaces in focus areas identified in the General Plan, including the downtown core, Santa Clara Station, Stevens Creek Boulevard corridor, and El Camino Real corridor.	-2,360	<input type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	Implement market-rate priced parking for 10% of parking spaces in focus areas. Assumes an average rate increase of 50%.



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Topic	Measure	2020 MTCO _{2e} Reduced	Applicability	Performance Metrics
Local-serving mixed-use projects	6.7: Support mixed-use developments that encourage local walking and bike trips to neighborhood grocery stores, services, and amenities.	-5,150	<input checked="" type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input type="checkbox"/> Municipal	Assure 4% of all development in 2020 is mixed-use with an even mix of single-family, multi-family, commercial, and community park development.
Electric vehicle parking	6.8: Revise parking standards for nonresidential development to require 5% of all new nonresidential spaces are designated for electric vehicle charging.	-1,150	<input type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	440 new parking spaces in new commercial and industrial development provide EV charging.
7. Urban Heat Island Effect				
Urban forestry	7.1: Create a zone-based tree planting standard for new residential development and conduct a community-wide tree inventory every five years to track progress.	-230	<input type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input checked="" type="checkbox"/> Municipal	Each new residential unit includes 2 shade trees near south-facing windows.
Urban cooling	7.2: Revise section 18.74.040(a) of the Zoning Code to require new parking lots be surfaced with low-albedo materials to reduce heat gain.	-10	<input type="checkbox"/> Existing Development <input checked="" type="checkbox"/> New Development <input type="checkbox"/> Municipal	All new uncovered parking lots and spaces use light-colored and/or permeable pavements.
Total Reductions		-473,100		
<p>I. Switching to cleaner sources of electricity reduces the impact of future renewable energy and energy efficiency projects on GHG reductions. A revised emissions factor based on Measure 1.1 was used to calculate the electricity-related GHG reductions in remaining measures.</p>				

2035 Reach Measure Topics

Proposed CAP measures and associated performance metrics identify emissions reductions to be achieved by 2020. Additional steps or actions must be considered to achieve 2035 reductions. Table 3 presents a list of reach measure topics derived from measures proposed for 2020. The reach measure topics rely on increased levels of participation and performance than proposed for 2020 in order to achieve greater emissions reductions by 2035.



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Table 3 – Proposed Climate Action Plan Reach Measure Topics (2035)

Topic	CAP Performance Metric	2020 Reductions (MTCO _{2e})	2035 Reductions (MTCO _{2e})	Reach Performance Metric	2035 Reach Reductions (MTCO _{2e})
Coal-free by 2020	100% of coal power replaced with natural gas.	-388,300	-480,100	100% of coal power replaced with an even mix of renewables and natural gas.	-806,200
Utility-installed renewables	New solar PV projects generating 5 MW in total installed capacity.	-1,200	-1,200	New solar PV projects generating 25 MW or more in total installed capacity.	-3,100
Customer-installed solar	Installation of 6,000 kW of solar on homes, nonresidential buildings, parking garages, parking lots, and other feasible locations.	-1,500	-1,500	Installation of 10,000 kW of solar on homes, nonresidential buildings, parking garages, parking lots, and other feasible locations.	-1,300
Total Reductions for Selected Measures		-391,500	-482,800		-810,600