



CITY COUNCIL STAFF REPORT

DATE: October __, 2020 NEW BUSINESS

SUBJECT: DISCUSSION OF CURRENT, PLANNED, AND POTENTIAL ADDITIONAL ACTIONS TO ADDRESS CLIMATE CHANGE

FROM: David H. Ready, City Manager

BY: Development Services, Sustainability Division

SUMMARY

City Council requested a discussion of the City's efforts to address climate change. Sustainability staff and the Sustainability Commission met with Mayor Pro Tem Christy Holstege (Council Liaison) at the Commission's meeting on October 15, 2019, to discuss this request. In response, Sustainability staff worked with the Commission to develop the attached Climate Action Roadmap that summarizes current City goals related to greenhouse gas emissions reduction and current and planned activities to reduce these emissions in an effort to address the key contributors to climate change.

RECOMMENDATION

Direct staff as appropriate.

BACKGROUND

The City of Palm Springs recognizes that climate change is real and is having a dramatic impact on our environment, our economy, and our way of life. Globally, we know that sea levels are rising, polar ice is retreating, permafrost is melting, and fires are increasing. Here in the Coachella Valley, climate change is and will continue to manifest itself in the form of longer periods of drought; more frequent, above-average storm events; changes in populations of local flora and fauna; longer summers; and higher temperatures.

The City has undertaken a variety of initiatives to reduce greenhouse gas (GHG) emissions – the primary contributors to climate change – since 2008. In 2010 the City conducted an emissions inventory to assess these emissions and identify priority areas to address.

Following this inventory, the City decided to contract with an Energy Service Company (or "ESCO") to analyze all of the City's operations in more detail to identify certain energy

savings projects to complete with the goal of reducing utility costs and the City's carbon footprint. Reconstruction of the Municipal co-generation plant – one of the City's largest emitters – into a more energy efficient, less polluting system was a critical goal.

Following a competitive, qualifications-based selection process, the City Council selected Chevron Energy Solutions ("CES") as its ESCO and approved an agreement with CES. Under this agreement, CES provided energy management services to identify a range of solutions for the City to implement that would result in energy cost savings as well as GHG reductions. The cost savings were used to offset the capital expense of implementing the selected energy efficiency measures.

On June 19, 2013, the City Council approved an energy services contract with CES in the amount of \$17.8 million for a list of energy savings projects that included lighting retrofits at most City facilities and all palm tree uplights, irrigation retrofits, and reconstruction of the Municipal co-generation plant. The Municipal co-generation plant represented the largest energy savings project at \$9.1 million of the total contract.

The older co-generation plant was completely reconstructed with newer, more efficient equipment that effectively reduced the emissions by over 95%.The City recently issued a new contract to improve the reliability and performance of the co-gen facility.

In addition to these projects, the City conducted a feasibility study to assess opportunities to install solar photovoltaic systems at City properties between 2013 and 2015. Although several sites were evaluated, the City moved forward with three sites that were most technically and financially feasible. These sites included the Convention Center, the Wastewater Treatment Plant, and the Animal Shelter. These projects resulted in significant GHG reductions and energy cost savings for the City.

In recent months, there has been growing demand for increased global action to address what is often described as a climate crisis or climate emergency. Some cities in the United States and abroad have also declared climate emergencies or adopted climate emergency resolutions to further mobilize action.

On October 15, 2019, the Palm Springs Sustainability Commission met with Mayor Pro Tem Holstege to discuss how to move forward with discussions and potential further actions to address climate change. In preparation for that meeting, Sustainability staff developed a memo that described the work that was already underway or planned to address GHG emissions. At that meeting, the group agreed that City Council would benefit from this type of information to inform their discussions. Sustainability staff adapted the contents of that memo to develop the attached Climate Action Roadmap (**Attachment A**). The Roadmap acknowledges the seriousness of our current climate crisis, describes what the City has already done and plans to do to address climate change, and identifies potential additional actions.

The City's response to the COVID 19 pandemic served to delay these discussions. During this period, City Staff and Sustainability Commission members worked to update materials to ensure they remained current when presented to Council.

STAFF ANALYSIS

The City's efforts to address climate change are guided by several goals in its current Sustainability Plan related to GHG reduction (**see Attachment B**). These include the following:

- Reduce GHG emissions to 1990 levels by 2020.
- Reduce to 80% below 1990 levels by 2050.
- Achieve carbon neutrality for municipal emissions by 2030.
- Encourage the building or retrofitting of one million square feet of green buildings.
- Reduce the total energy use by all buildings built before 2012 by 10%.
- Reduce energy use and carbon use from new homes and buildings.
- Supply 50% of all energy from renewable sources by 2030.

In addition to the above Sustainability Plan goals, SB 32 signed by Governor Brown in 2016 requires the California Air Resources Board to ensure that statewide GHG emissions are reduced at least 40 percent below 1990 levels by December 31, 2030.

Although a GHG inventory conducted in 2010 indicated that the City had already achieved its initial goal – to reach 1990 levels by 2020 – the results of that inventory have been revisited and indicate that the City's emissions were higher than previously thought. The City has experienced significant growth since then, and a new inventory is being performed to determine where the City is now. This new inventory will use the most current emissions data available and provide a "look ahead" for 2020. It will also reassess the 2010 baseline to ensure that the baseline can be compared to the more current data.

The results of the updated GHG inventory will provide important information about where the City should focus its efforts to achieve the most significant GHG reductions. A variety of actions were identified in the Climate Action Plan (2013), and the City implemented several of these actions to some degree or another. Other actions may be outdated. The activities in the CAP should be revisited after the updated GHG inventory is completed. A summary of the CAP actions is included as **Attachment C**.

Independent of this reassessment, the City continues to take significant action and plan additional actions to continue positive progress. Below are some of the City's current and planned activities, which are further described in the current Climate Action Roadmap.

- Current Actions
 - Implement changes in the California Energy Code and Green Building Standards Code effective January 1, 2020.

- Expand the network of EV charging stations installed by the City and update Zoning Code parking standards to reflect new state requirements and best practices on EV charging stations on private property.
- Implement new incentive program for home energy assessments.
- Development of a Walkability and Safe Routes to School Master Plan to reduce traffic emissions. The City received a grant from the Southern California Association of Governments (SCAG) to hire a consultant to assist with this process. The consultant has been selected and has begun work.

- Planned Actions
 - Promote reusable food ware to reduce emissions from discarded disposables. CalRecycle recently solicited grants proposals to promote reuse as a means for reducing GHG emissions from production and landfilling of disposable food ware.
 - Implement new organics waste management requirements. These requirements will be finalized by the state in 2020 and are designed to reduce GHG emissions by reducing the amount of organic waste sent to landfills.
 - Update the General Plan to reflect climate adaptation strategies and other environmental goals. This process is underway at the Planning Commission and General Plan Steering Committee.
 - Develop options to address local transportation-related emissions.

The Sustainability Commission continues to work with City staff to research other activities that could result in further emission reductions. For example, the City is having ongoing discussions with SoCalGas and technical consultants to investigate capture technologies for GHG emissions from the wastewater treatment plant, which would result in a variety of important benefits for the City.

If Council is interested in pursuing additional GHG reductions, one area that provides a variety of opportunities is building electrification and energy efficiency. AB 3232, signed by Governor Brown in 2018, requires the California Energy Commission to identify policies that reduce GHG emissions from the building stock by 40 percent below 1990 levels by 2030. The California Air Resources Board reports that the residential sector accounted in 2017 for approximately 7% of California's total GHG emissions of 424.1 million metric tons of CO₂e. A 2018 study on impacts of residential appliance electrification by prepared by Navigant Consulting for the California Building Industry Association estimates that replacing major natural gas appliances with electric space and water heating, cooking, and laundry appliances can reduce an existing home's total GHG emissions by 42-72% in 2030, and 63-67% for new homes by that time.

The Solar and Green Building Subcommittee of the Sustainability Commission has investigated a range of potential actions from among a variety of measures exceeding state requirements that have recently been adopted by many other California cities and counties, which are included in **Attachment D**. Using data from cost-effectiveness studies prepared by the statewide Codes and Standards Program under the auspices of the Energy Commission summarized in **Attachment E**, the Solar and Green Building

Committee has identified the following measures as having the least incremental cost and / or the highest benefit / cost ratio, and recommends these measures for further research and stakeholder outreach:

Commented [PT1]: We will need to change this language after the Commission reviews and recommends.

- Require cool roofs having a minimum solar reflectance value more stringent than that required by code on new residential construction and when a residential building is already installing a new, steep-sloped roof¹ as part of the remodel. Roof repair, photovoltaic roofs and replacements of less than 50% of roof area would be exempt. Many local installers are familiar with foam and other cool roof materials, which are widely available. This measure would address the effects of climate change, help reduce the urban heat island effect, improve air quality and decrease the energy consumption of buildings. For a new single-family home, the additional cost is estimated to be \$237 and save \$2,536 in energy. For a pre-1978 single-family home, the additional cost is estimated to be \$635 and save \$5,537 in energy. This measure would require Energy Commission approval.
- Require residential remodels having a building permit valuation above a specified threshold² to carry out energy efficiency measures above and beyond any work triggered by Title 24 code requirements. For example, duct sealing is required by code whenever heating and cooling equipment is altered, but this measure would apply where it is not already triggered by code (i.e., no changes to the heating or cooling equipment). For a pre-1978 single-family home, an envelope package of attic insulation, air sealing and duct sealing is estimated to cost \$3,472 and save \$20,971 in energy over the 30-year life cycle. A water heating package for a single-family home consisting of a water heater blanket, hot water pipe insulation and low-flow shower and faucet fixtures is estimated to cost \$208 and save \$509.60 in energy. This measure would require Energy Commission approval.
- Require new residential construction to be prewired for future electric cooking, clothes drying and battery storage and above-code prewiring for a heat pump water heater (HPWH). The all-electric readiness requirements are similar in spirit to requirements for prewiring for electric vehicle charging stations recently adopted by Council and are designed to enable buildings initially equipped with natural gas appliances to replace them with electric appliances at a later time and to install a battery storage system to mitigate power shutoffs without having to make electrical capacity upgrades or make other changes to the building. The all-electric readiness requirements are based on findings that all-electric buildings cause fewer GHG emissions. There are no cost-effectiveness findings for these provisions since, by themselves, they do not reduce energy. Including them is prudent as they are relatively inexpensive at the time of initial construction while enabling buildings to avoid much higher conversion costs in the future. This approach also avoids the path of requiring electric-only buildings, which had been suggested to Council by a member of the public at an earlier Council meeting. The

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¹ The 2019 California Energy Code defines a steep-sloped roof as a roof that has a ratio of rise to run of greater than or equal to 2:12 (9.5 degrees from the horizontal).

² The threshold in the Carlsbad energy efficiency ordinance is \$60,000, the same threshold that triggers a local Coastal Development Permit. Voluntary energy efficiency upgrades below the threshold could be incentivized via a reduction in the building permit fees and / or an energy efficiency rebate program that Desert Community Energy could implement once it has available reserves.

cost-effectiveness study assumes an incremental cost to run 220V service to each appliance of \$200 per appliance for single-family homes and \$150 per appliance per multifamily apartment based on cost estimates from builders and contractors. The cost of recommended above-code rewiring for an HPWH is estimated to be \$13, and the cost of rewiring for battery storage is estimated to be \$1,000. This measure would not require Energy Commission approval.

The following items also seem relevant for our area but would require additional research to understand costs and benefits.

- Require solar PV for new non-residential buildings and major renovations of residential and non-residential buildings. There would be upfront costs for solar PV system, although the system is cost effective over its life cycle. This would require Energy Commission Approval.
- Require electric heat pump water heaters in new mixed-fuel residential buildings. The HVAC community would need to be educated on electric heat pump water heaters. Energy costs may be higher. This would require Energy Commission Approval.
- Require electric heat pump water heaters and/or a solar thermal system for new pool construction, if the pool is to be heated. Local market is more accustomed to gas-fueled pool heaters. Solar thermal systems work best in early spring and fall. This would require Energy Commission Approval.

It is important to note that, although the City has been moving forward with efforts to reduce GHG emissions, it could enhance its efforts by developing a broader climate adaptation strategy if directed by Council. The adaptation strategy identifies specific climate impacts and corresponding mitigation actions, such as identifying community energy resiliency projects. Our two biggest potential impacts are, of course, drought and increasing temperatures, which also create the conditions for wildfires. We continue to work with DWA on water use reduction strategies such as turf buy backs and have expanded cooling center hours to address climate impacts on vulnerable populations. However, the City has not assessed or taken action to address other potential impacts such as diminishing habitats and animal populations.

Given current and planned activities, City staff is seeking Council input on the following:

- Whether to continue to with the research activities listed on Pages 4 - 6 (e.g., GHG reductions at the wastewater treatment plant, energy efficiency and electrification of homes and buildings).
- Whether there are any other areas the City should be exploring to further reduce GHG emissions at this time.
- What other actions the City should consider related to research, education, outreach, or community engagement on this topic.
- Whether a formal climate emergency resolution or declaration is warranted if it would add value to the City's current and planned efforts. Examples from a few cities are included as **Attachment F**.

FISCAL ANALYSIS:

The table below includes a brief overview of cost impacts from current or planned activities. It does not include any items that are still being researched.

Action	Fiscal Impact
Implement changes in the California Energy Code and Green Building Standards Code effective January 1, 2020.	Costs for these additional requirements have been analyzed by the state and will vary greatly from project to project. They are all cost-effective over their life cycle.
Require electric or electric-ready and cool roofs for new residential construction and energy efficiency and cool roofs for alterations and additions to existing residential buildings.	Costs for these additional requirements have been analyzed by the state and will vary greatly from project to project. They are cost-effective over their life cycle.
Expand the network of City-installed EV charging stations.	The City has received over \$220,000 in grant funding and has applied for more. The City is soliciting low or no-cost solutions to minimize additional cost impacts from expansion efforts.
Update information packet required by AB 1236 (2015) creating expedited and streamlined permitting process for EV charging stations.	Staff time to review updated information packet to be drafted by Solar and Green Building Committee. The City Attorney has already drafted the implementing ordinance.
Implement new incentive program for home energy assessments.	\$10,000 has been set aside in the Sustainability budget to provide these incentives.
Promote reusable food ware to reduce waste from disposables.	Cost impacts will vary by business. However, studies have shown that the switch to reusable food ware saves businesses money after initial costs are covered.
Expand cooling center services for the homeless to address climate change impacts on vulnerable populations.	The cost of operating the cooling center is \$25,000 per month.
Implement new organics waste management requirements.	The costs associated with this will be significant but will be refined when the regulations are finalized. City staff are currently working with Palm Springs Disposal to develop cost estimates and assess impacts on rate increases.
Investigate capture technologies for GHG emissions from wastewater treatment plant.	To be determined based on additional research.

Action	Fiscal Impact
Development of a Walkability and Safe Routes to School Master Plan to reduce traffic emissions.	Contractor services are being paid for by SCAG (\$200,000). Estimates for projects will be developed and presented to Council on a project-specific basis.
Develop options for reducing local transportation-related emissions.	To be determined based on opportunities identified. Some costs could be significant (e.g., widening roads to create alternative vehicle-only pathways)
Update the General Plan to reflect climate adaptation strategies.	Costs for the contractor support for the General Plan update and GHG inventory have already been approved by Council.

ENVIRONMENTAL ASSESSMENT:

All of the actions proposed are designed to reduce the City’s GHG emissions. These emissions reductions would contribute to various sustainability goals and result in positive environmental impacts such as improving air quality in our City and helping address the world’s climate crisis.

There is no City Council action being considered at this time. Depending on how Council decides to move forward, actions may result in a “Project” as defined by the California Environmental Quality Act (CEQA). Pursuant to Section 15378(a), a “Project” means the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.

SUBMITTED:

 Patrick Tallarico, LEED AP, CPF
 Manager, Office of Sustainability

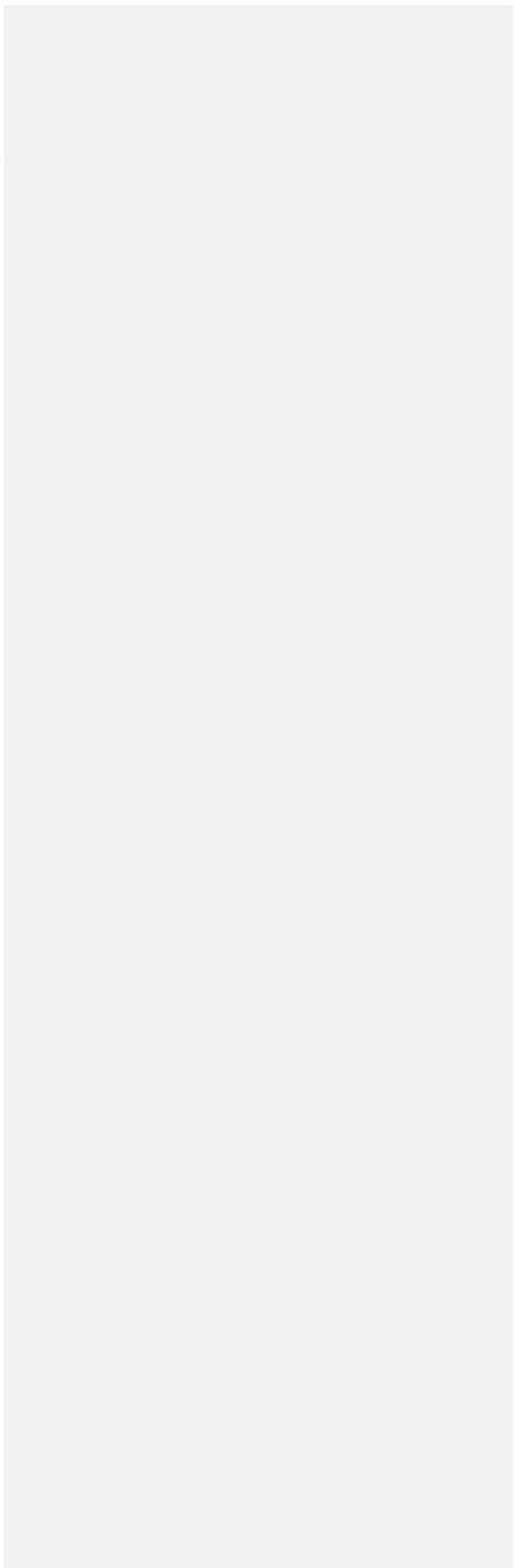
 Marcus Fuller, PE, PLS
 Assistant City Manager

 David H. Ready, Esq., Ph.D.
 City Manager

ATTACHMENTS:

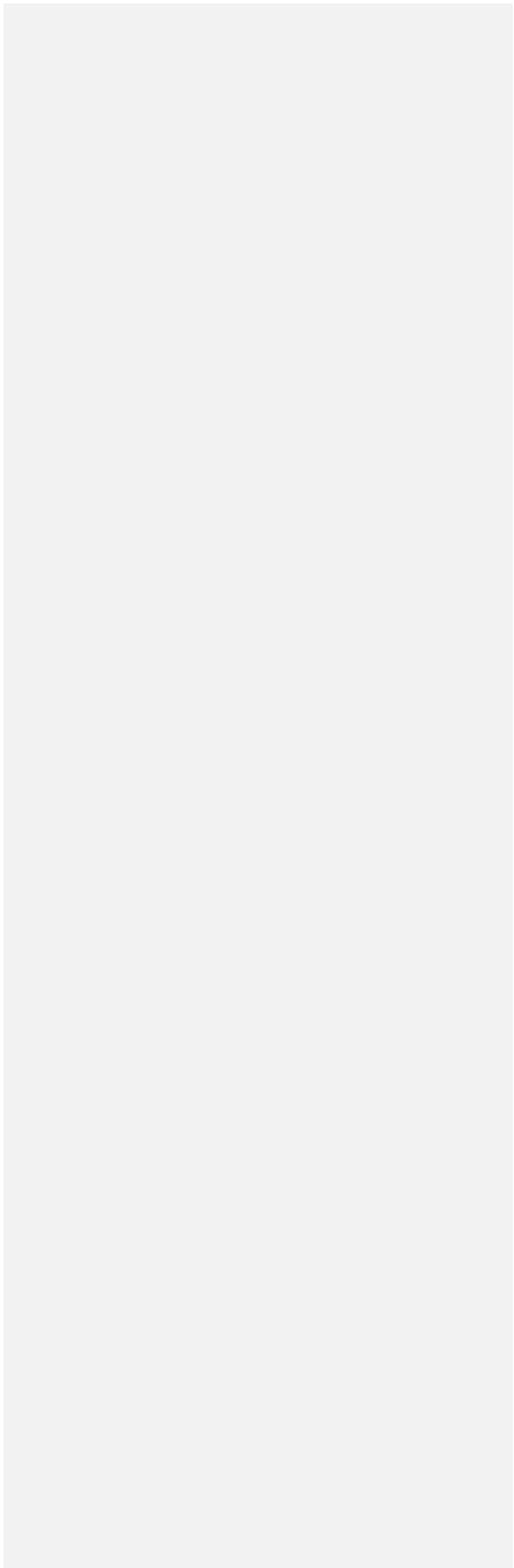
- A. Climate Action Roadmap –October __, 2020
- B. Excerpts from Palm Springs Sustainability Plan

- C. 2013 Climate Action Plan Summary of Potential Savings Measures
- D. 2019 Code Cycle - Locally Adopted Energy Ordinances
- E. Summary Cost-Effectiveness Analysis
- F. Examples of Climate Emergency Resolutions or Declarations



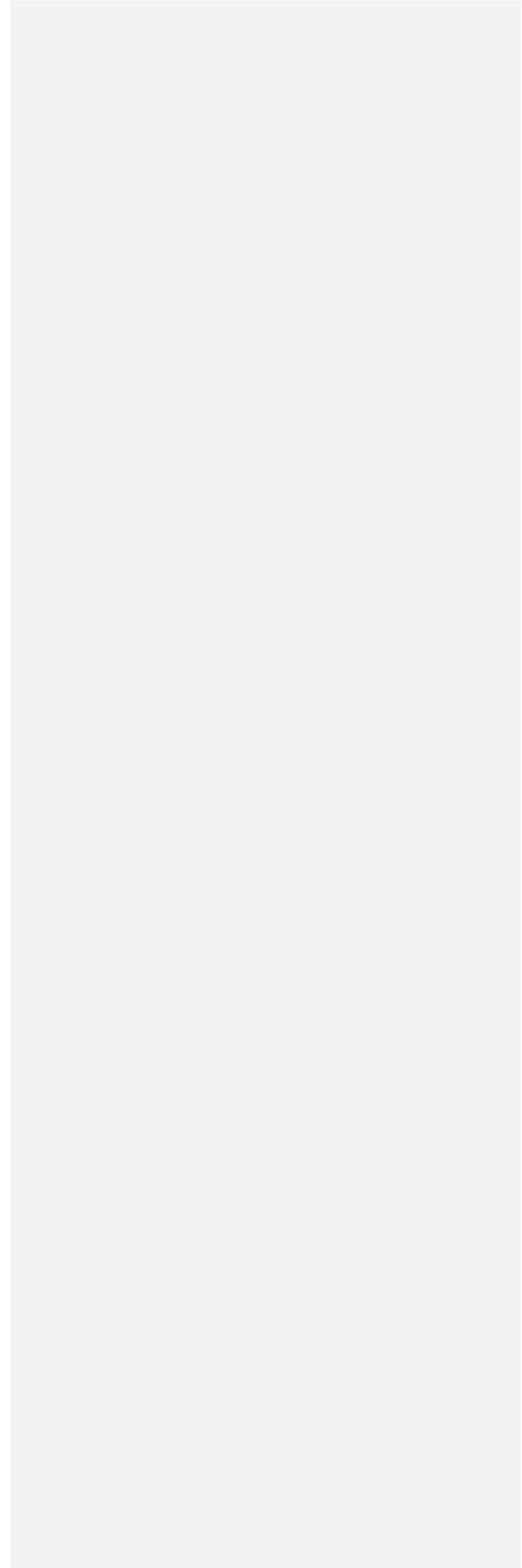
**ATTACHMENT A:
CLIMATE ACTION ROADMAP – OCTOBER __, 2020**

**ATTACHMENT B:
EXCERPTS FROM PALM SPRINGS SUSTAINABILITY PLAN**



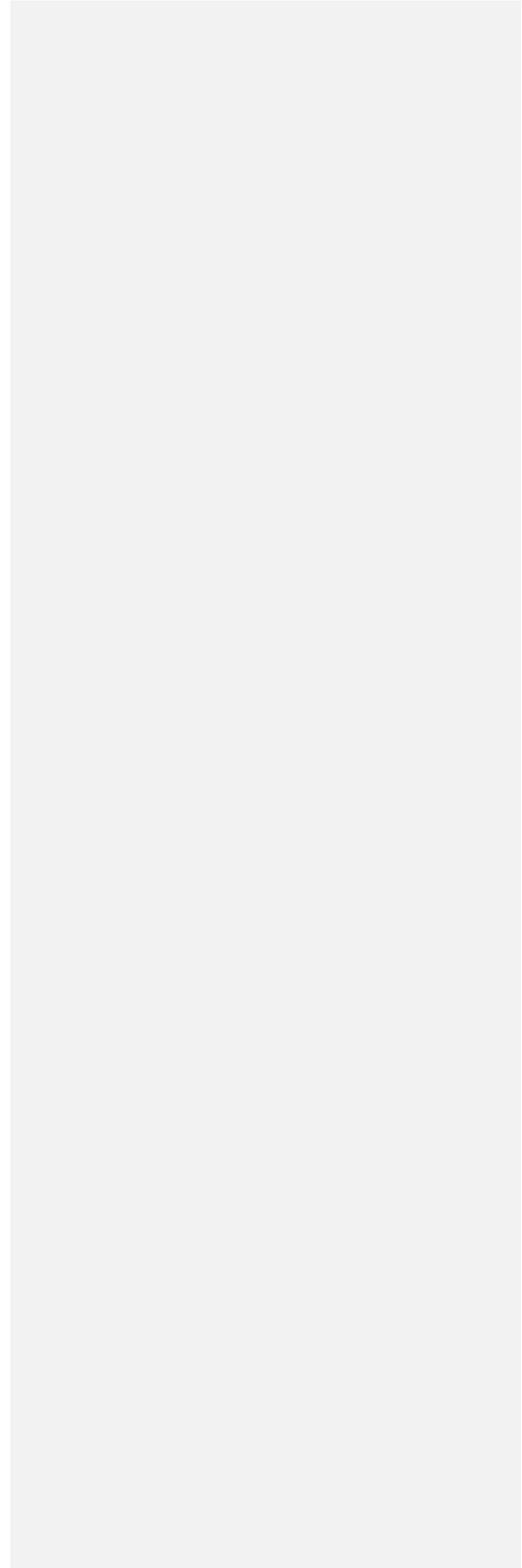
**ATTACHMENT C:
2013 CLIMATE ACTION PLAN
SUMMARY OF POTENTIAL SAVINGS MEASURES**

**ATTACHMENT D:
2019 CODE CYCLE - LOCALLY ADOPTED ENERGY ORDINANCES**



**ATTACHMENT E:
SUMMARY COST-EFFECTIVENESS ANALYSIS**

**ATTACHMENT F:
EXAMPLES OF CLIMATE EMERGENCY RESOLUTIONS OR
DECLARATIONS**



Summary Cost-Effectiveness Analysis¹

Potential Action	Benefit	Cost	Benefit / Cost Ratio
Require more stringent cool roofs for newly constructed buildings. ²	\$2,536	\$237	10.7
Require more stringent cool roofs for alterations and additions to existing buildings. ³	\$5,537	\$635	8.72
Require envelope and duct energy efficiency measures for major renovations of existing single-family and multifamily residential buildings. ⁴	\$20,971	\$3,472	6.04
Require water heating energy efficiency measures for major renovations of existing single-family and multifamily residential buildings. ⁵	\$509.60	\$208	2.45
Require solar PV for new non-residential buildings and major renovations of non-residential buildings. ⁶	\$10,476	\$5,566	1.9
Require all-electric Code compliant home for new residential construction. ⁷	\$5,349	\$3,090	1.7

¹ Costs for initial installation and annual operation, and on-bill benefits from reduced energy costs, are calculated over the life cycle of the equipment (30 years unless otherwise noted). The prototypes for new residential buildings are 2,100 ft² for a single-family home and 6,960 ft² for an 8-unit multifamily building, and for existing residential buildings are 1,665 ft² for a single-family home and 960 ft² per unit for a multifamily building. The figures are derived from data for Climate Zone 15 (where Palm Springs is located) in cost-effectiveness studies issued by the statewide Codes and Standards Program under the auspices of the California Energy Commission.

² Incremental cost of adding a cool roof to a single-family home. Source: *2019 Cost-effectiveness Study: Low-Rise Residential New Construction*, Table 4, page 10. The benefits are calculated using the Energy Commission's Time Dependent Valuation (TDV) lifecycle cost methodology, which is intended to capture the "societal value or cost" of energy use. Source: *Cost-Effectiveness Study for Cool Roofs FINAL Report for All Climate Zones*, page 78. The benefit / cost ratio is 78.26 for a multifamily building.

³ Incremental cost of adding a cool roof to a pre-1978 single-family home already installing a new roof as part of the remodel. The benefit / cost ratio is 14.0 for a pre-1978 multifamily building. Source: *2019 Cost-Effectiveness Study: Existing Low-rise Residential Building Efficiency Upgrade*, Tables 47 and 48, page 51.

⁴ Envelope and duct package consisting of attic insulation, air sealing and duct sealing upgrades to a pre-1978 single-family home. The benefit / cost ratio is 9.67 for a multifamily building. Source: *2019 Cost-Effectiveness Study: Existing Low-rise Residential Building Efficiency Upgrade*, Table 3, page 10, and Tables 47 and 48, page 51.

⁵ Water heating package consisting of a water heater blanket, hot water pipe insulation and low-flow shower and faucet fixtures upgrades to a single-family home (all vintages). The benefit / cost ratio is 2.92 for a multifamily building. Source: *2019 Cost-Effectiveness Study: Existing Low-rise Residential Building Efficiency Upgrade*, Table 3, page 10, and Tables 47 and 48, page 51.

⁶ Based on adding a 3kW PV system to a 24,691 ft² medium retail building. Source: *2019 Nonresidential New Construction Reach Code Cost Effectiveness Study*, Figure 62, page 73.

⁷ For a single-family home. The benefit / cost ratio is 6.4 for a multifamily building. Source: *2019 Cost-effectiveness Study: Low-Rise Residential New Construction*, Table 14, page 34, and Table 16, page 38.

Potential Action	Benefit	Cost	Benefit / Cost Ratio
Require a heat pump or solar thermal system for new residential pool construction, if the pool is to be heated. ⁸	\$1,102	\$868	1.27
Require solar for major residential additions. ⁹	\$5,935	\$5,783	1.03
As alternative to all-electric code compliant home, require new mixed-fuel residential buildings to have above-code energy performance. ¹⁰	\$2,179	\$2,179	1.0
Require new mixed-fuel residential buildings to be prewired for future electric cooking and clothes drying and above-Code prewiring for heat pump water heater (HPWH). ¹¹	0	\$413	N/A
Require new mixed-fuel residential buildings to be prewired for future battery storage. ¹²	0	\$1,000	N/A
Require electric heat pump water heaters in new mixed-fuel residential buildings. ¹³	0	0	N/A

- ⁸ 10-year life cycle. Source: *Cost Effectiveness Study: All Electric Heat Pump Pool Heating - Non-Preempted*, Page 7 and Table 4, page 11. The data are for Santa Monica; statewide data do not exist.
- ⁹ Based on adding a 1.2kW PV system for an 800 ft² addition (1.5 watts per ft²) to a single-family home. The benefit / cost ratio for adding a 6.96 kW PV system for a 3,480 ft² addition (2 watts per ft²) to a multifamily building is 1.23. Source: *2019 Cost-effectiveness Study: Low-Rise Residential Addendum – Cost Effectiveness Study of Santa Monica Proposed Ordinance Requiring Photovoltaic (PV) Systems on Residential Additions*, Table 1, page 3. The data are for Santa Monica; statewide data do not exist.
- ¹⁰ For a single-family home. The benefit / cost ratio is 1.35 for a multifamily building. Source: *2019 Cost-effectiveness Study: Low-Rise Residential New Construction*, Table 81, page 114, and Table 82, page 115.
- ¹¹ For a single-family home. The cost estimate is \$313 per unit for a multifamily building. Source: *Ibid*, Table 6, page 16. The 2019 Energy Code already requires pre-wiring for a future HPWH for new homes with a gas water heater. A Codes and Standards representative estimates the cost of recommended above-Code prewiring for an HPWH would be \$13.
- ¹² Source: *PV + Battery Storage Study*, page 3. A Codes and Standards representative estimates prewiring would cost \$1,000, based on half of the \$2,000 installation cost assumed in the study.
- ¹³ 15-year life cycle. An HPWH is estimated to cost the same as a tankless gas water heater in both a single-family home and a multifamily building. Source: *2019 Cost-effectiveness Study: Low-Rise Residential New Construction*, Table 6, page 16. Based on data from Los Angeles-area Climate Zone 9, having an HPWH instead of a tankless gas heater is estimated to have energy costs of approximately \$33 per year in a single-family home and energy savings of approximately \$19 per year in a multifamily building. Source: *Residential Building Electrification in California* prepared by Energy and Environmental Economics, Inc. (E3), Figure 3-11, page 60. The E3 report also shows 13-year lifecycle savings (total installation cost + total bill savings) in Figure 3-23 on page 72, and it is positive for all six studied climate zones. This is because E3 believes HPWHs are cheaper than tankless gas water heaters, unlike the statewide Codes and Standards team.

2019 Code Cycle - Locally Adopted Energy Ordinances

Jurisdiction	Ord. Type	Council Adopted Date	CEC Approval Date	Single Family and Low-rise Multifamily Requirement	High-rise Multifamily Requirement	Nonresidential Requirement	Cost-effectiveness Study	Municipal Code Link	Ordinance
Berkeley	EE	12/3/2019	2/20/2020	<u>New:</u> All-electric OR Mixed Fuel, Total EDR margin \geq 10 AND electric-ready	<u>New HRR/Hotel:</u> All-electric OR Mixed-Fuel and >10% compliance margin	<u>New:</u> All-electric OR Mixed-Fuel: 10% compliance margin AND electric-ready Exception: Labs, industrial, manufacturing occupancies	2019 LR Res NC / 2019 Non Res NC	19.36.040	Ord. No 7,678-N.S.
	PV	12/3/2019	2/20/2020	N/A	<u>New:</u> PV system to fill solar zone (>15% of roof area) as defined in Sec. 110.10	<u>New:</u> PV system to fill solar zone (>15% of roof area) as defined in Sec. 110.10		19.36.100.3	
Brisbane	PV	12/12/2019	2/20/2020	N/A (see All-electric sheet)	<u>New:</u> PV of 3 kW min. for < 10,000 sq. ft. and 5 kW min. for > 10,000 sq. ft OR Solar thermal	<u>New:</u> PV of 3 kW min. for < 10,000 sq. ft. and 5 kW min. for > 10,000 sq. ft OR Solar thermal	2019 LR Res NC / 2019 Non Res NC	15.81.050	Ord. No. 643
Carlsbad	EE	3/12/2019	8/14/2019	<u>New:</u> HPWH OR solar thermal <u>Adds/Alts:</u> > \$60k: Presc. measures	<u>New:</u> HPWH OR increased solar fraction	<u>New:</u> Electric water heating OR solar thermal > 0.4 SF	Carlsbad Energy Conservation Ordinance CE Study	18.30.170	Ord. No. CS-348
	PV	3/12/2019	8/14/2019	N/A	<u>New/Alt:</u> 15 kW per 10,000 s.f.; min 5kW for < 10,000 s.f.	<u>New/Alt:</u> PV that offsets 80%; 15 kW per 10,000 s.f.; min 5kW for < 10,000 s.f.	2016 NR New Construction	18.30.130	Ord. No. CS-347
Davis	EE	10/8/2019	1/22/2020	<u>New SF:</u> All-electric OR Mixed Fuel, EDR margin of 9.5; <u>New LR MF:</u> Mixed fuel, EDR margin of 10; electric-ready	N/A	N/A	2019 LR Res New Construction	8.01.092	Ord. No. 2565

2019 Code Cycle - Locally Adopted Energy Ordinances

Jurisdiction	Ord. Type	Council Adopted Date	CEC Approval Date	Single Family and Low-rise Multifamily Requirement	High-rise Multifamily Requirement	Nonresidential Requirement	Cost-effectiveness Study	Municipal Code Link	Ordinance
Hayward	EE	3/17/2020	6/10/2020	N/A (see All-electric sheet)	<u>New</u> : All-electric OR 10% compliance margin	<u>New</u> : All-electric OR 10% compliance margin (15% for Office/Retail)	2019 LR Res NC / 2019 Non Res NC	9-1.02	Ord. No. 20-05
	PV	3/17/2020	6/10/2020	N/A (see All-electric sheet)	<u>New</u> : PV system to fill solar zone (>15% of roof area) as defined in Sec. 110.10	<u>New</u> : PV system to fill solar zone (>15% of roof area) as defined in Sec. 110.10			
Los Angeles County	EE	11/26/2019	4/8/2020	<u>New and Re-roof</u> : Low-slope Aged Refl. ≥ 0.65 , TE ≥ 0.85 , SRI ≥ 78 Steep-slope: Aged Refl. ≥ 0.25 , TE > 0.85 , SRI ≥ 20	<u>New and Re-roof</u> : Low-slope Aged Refl. ≥ 0.65 , TE ≥ 0.75 , SRI ≥ 78 Steep-slope: Aged Refl. ≥ 0.25 , TE > 0.75 , SRI ≥ 20	<u>New and Re-roof</u> : Low-slope Aged Refl. ≥ 0.68 , TE ≥ 0.85 , SRI ≥ 82 Steep-slope: Aged Refl. ≥ 0.28 , TE > 0.85 , SRI ≥ 27	2016 Cool Roofs	Title 31	Ord. No. 2019-0061
Marin County	EE	10/8/2019	12/11/2019	<u>New</u> : All-electric OR Limited Mixed-Fuel prewire for induction, EE EDR Margin ≥ 3 OR Mixed-Fuel, pre-wire for induction, EE EDR Margin ≥ 3 and Total EDR Margin ≥ 10	<u>New</u> : All-electric OR Limited Mixed-Fuel: 5% compliance margin, prewired for induction OR Mixed-Fuel: 10% compliance margin, pre-wired for induction	<u>New</u> : All-electric OR Limited Mixed-Fuel: 5% compliance margin, prewired for induction OR Mixed-Fuel: 10% compliance margin, pre-wired for induction	2019 LR Res NC / 2019 Non Res NC	19.04 Subchapter 2 - Green Building Requirements	Ord. No. 3712
	EV	10/8/2019	12/11/2019	<u>New SF</u> : Requires service panel capacity for Level 2 EV charging (240v) <u>New MF</u> : 1 EV charging space per dwelling unit	<u>New</u> : EV charging space per unit. <u>Add/Alt</u> : requirements	10% of spaces EV-Ready and build the remaining spaces to be EV Capable OR Build 20% of spaces to be EV-Ready and install EV Chargers in 5% of spaces <u>Add/Alt</u> requirements			
Menlo Park	PV	9/24/2019	12/11/2019	N/A (see All-electric sheet)	<u>New</u> : PV of 3 kW min. for < 10,000 sq. ft. and 5 kW min. for > 10,000 sq. ft. (some exceptions)	<u>New</u> : PV of 3 kW min. for < 10,000 sq. ft. and 5 kW min. for > 10,000 sq. ft. (some exceptions)	2019 LR Res NC / 2019 Non Res NC	12.16.110.10	Ord. No. 1057

2019 Code Cycle - Locally Adopted Energy Ordinances

Jurisdiction	Ord. Type	Council Adopted Date	CEC Approval Date	Single Family and Low-rise Multifamily Requirement	High-rise Multifamily Requirement	Nonresidential Requirement	Cost-effectiveness Study	Municipal Code Link	Ordinance
Mill Valley	EE	11/18/2019	4/8/2020	<u>New</u> : All-electric OR Limited Mixed-Fuel: prewire for induction, with EE EDR Margin ≥ 3 OR Mixed-Fuel, pre-wire for induction, EE EDR Margin ≥ 3 and Total EDR Margin ≥ 10	<u>New</u> : All-electric OR Limited Mixed-Fuel: 5% compliance margin, prewired for induction OR Mixed-Fuel: 10% compliance margin, pre-wired for induction	N/A	2019 LR Res NC / 2019 Non Res NC	Chapter 14.48	Ord. No. 1313
Milpitas	EE	12/3/2019	2/20/2020	<u>New</u> : All-electric OR Elec. Space and Water Heat: Eff. EDR Margin of 2 for SF and 1 for MF Mixed-Fuel: Total EDR Margin of 10 for SF and 11 for MF; AND electric-ready	<u>New HR MF/ Hotel</u> : All-electric OR > 6% compliance margin AND electric-ready	<u>New</u> : All-electric OR Office & Retail: >14% compliance margin; Industrial/ Manufacturing + 0%; All other NR occupancies > 6% compliance margin; AND electric-ready	2019 LR Res NC / 2019 Non Res NC	Chapter 11.2.02	Ord. No. 65 148
	PV	12/3/2019	2/20/2020	N/A	N/A	<u>New</u> : PV of 3 kW min. for < 10,000 sq. ft. and 5 kW min. for > 10,000 sq. ft.		Chapter 11.2.02	
Mountain View	PV	11/12/2019	2/20/2020	N/A (see All-electric sheet)	<u>New</u> : PV on 50% of roof area	<u>New</u> : PV on 50% of roof area	2019 LR Res NC / 2019 Non Res NC	SEC. 8.20	Ord. No. 17.19
	EV	11/12/2019	2/20/2020	<u>New</u> : Level 1 circuit + Level 2 EV-Ready	<u>New Multi-Unit/ Mixed Use</u> : 15% EV2 installed + 85% EV-Ready + Level 3 for every 100 spaces	<u>New + Hotel/Motel</u> : installed per CALGreen Tier 2 (Table A5.106.5.3.2)		SEC. 8.20	Ord. No. 17.19
Pacifica	PV	11/25/2019	4/8/2020	N/A (see All-electric sheet)	PV of 3 kW min. for < 10,000 sq. ft. and 5 kW min. for > 10,000 sq. ft.	PV of 3 kW min. for < 10,000 sq. ft. and 5 kW min. for > 10,000 sq. ft.	2019 LR Res NC / 2019 Non Res NC	Section 8-6.01	Ord. No. 852-CS

2019 Code Cycle - Locally Adopted Energy Ordinances

Jurisdiction	Ord. Type	Council Adopted Date	CEC Approval Date	Single Family and Low-rise Multifamily Requirement	High-rise Multifamily Requirement	Nonresidential Requirement	Cost-effectiveness Study	Municipal Code Link	Ordinance
Palo Alto	EE	12/2/2019	2/20/2020	N/A (see All-electric sheet)	<u>New:</u> All-electric OR > 5% compliance margin AND electric-ready	<u>New:</u> All-electric OR Office & Retail: >12% compliance margin; Industrial/ Manufacturing + 0%; All other NR occupancies > 5% compliance margin; AND electric-ready	2019 LR Res NC / 2019 Non Res NC	Chapter 16.17.80	Ord. No. 5485
	PV	12/2/2019	2/20/2020	N/A	<u>New:</u> PV system to fill solar zone (>15% of roof area) as defined in Sec. 110.10	<u>New:</u> PV system to fill solar zone (>15% of roof area) as defined in Sec. 110.10		Chapter 16.17.70	
Richmond	PV	3/3/2020	6/10/2020	N/A (see All-electric sheet)	<u>New:</u> PV of 3 kW min. for < 10,000 sq. ft. and 5 kW min. for > 10,000 sq. ft. Alternative: Solar thermal ≥ 40 sq.ft. collector area	<u>New:</u> PV of 3 kW min. for < 10,000 sq. ft. and 5 kW min. for > 10,000 sq. ft. Alternative: Solar thermal ≥ 40 sq.ft. collector area	2019 LR Res NC / 2019 Non Res NC	Chapter 6.02.100	Ord No. 06-20 NS
San Anselmo	EE	4/14/2020		<u>New:</u> All-electric OR Limited Mixed-Fuel prewire for induction, EE EDR Margin ≥ 3 OR Mixed-Fuel, pre-wire for induction, EE EDR Margin ≥ 3 and Total EDR Margin ≥ 10	<u>New:</u> All-electric OR Limited Mixed-Fuel: 5% compliance margin, prewired for induction OR Mixed-Fuel: 10% compliance margin, pre-wired for induction	<u>New:</u> All-electric OR Limited Mixed-Fuel: 5% compliance margin, prewired for induction OR Mixed-Fuel: 10% compliance margin, pre-wired for induction	2019 LR Res NC / 2019 Non Res NC	Section 9-19.040	Ord. No. 1145
	EV	4/14/2020		<u>New SF:</u> Requires service panel capacity for Level 2 EV charging (240v) <u>New MF:</u> 1 EV charging space per dwelling unit	<u>New:</u> EV charging space per unit. <u>Add/Alt</u> requirements	10% of spaces EV-Ready and build the remaining spaces to be EV Capable OR Build 20% of spaces to be EV-Ready and install EV Chargers in 5% of spaces <u>Add/Alt</u> requirements		Section 9-19.020	Ord. No. 1145
San Francisco	EE	1/7/2020	4/8/2020	<u>New:</u> All-electric OR Mixed Fuel, Total EDR Score ≤ 14	<u>New HRR/Hotel:</u> All-electric OR Mixed-Fuel and >10% compliance margin	<u>New:</u> All-electric OR Mixed-Fuel: 10% compliance margin AND electric-ready Exception: Labs, industrial, manufacturing	2019 LR Res NC / 2019 Non Res NC	Section 4.201.3 Section 5.201.3	Ord. No 003-20

2019 Code Cycle - Locally Adopted Energy Ordinances

Jurisdiction	Ord. Type	Council Adopted Date	CEC Approval Date	Single Family and Low-rise Multifamily Requirement	High-rise Multifamily Requirement	Nonresidential Requirement	Cost-effectiveness Study	Municipal Code Link	Ordinance
San Jose	EE	10/1/2019	12/11/2019	N/A (see All-electric sheet)	<u>New HR MF/ Hotel:</u> All-electric OR > 6% compliance margin and electric-ready	<u>New:</u> All-electric OR Office & Retail: >14% compliance margin; Industrial/ Manufacturing + 0%; All other NR occupancies > 6% compliance margin; and electric-ready	2019 LR Res NC / 2019 Non Res NC	24.12.100	Ord. No. 30311
	EV	10/1/2019	12/11/2019	<u>New:</u> EV charging readiness and/or electric vehicle service equipment (EVSE)	<u>New:</u> EV charging readiness and/or electric vehicle service equipment (EVSE)	<u>New:</u> EV charging readiness and/or electric vehicle service equipment (EVSE)		24.10.200	Ord. No. 30311
San Luis Obispo	EE	7/7/2020	8/11/2020	<u>New SF:</u> All-electric OR Mixed Fuel, EDR margin of 9; <u>New LR ME:</u> Mixed fuel, EDR margin of 9.5 AND electric-ready	<u>New:</u> All-electric OR Hotel/HRR > 9% compliance margin; AND electric-ready	<u>New:</u> All-electric OR Office/Retail 15% compliance margin, Others 5% compliance margin AND electric ready	2019 LR Res NC / 2019 Non Res NC	Chapter 15.50	Ord. No. 1684
	PV	7/7/2020	8/11/2020	N/A	<u>New:</u> PV system to fill solar zone (>15% of roof area) as defined in Sec. 110.10	<u>New:</u> PV system to fill solar zone (>15% of roof area) as defined in Sec. 110.10		Chapter 15.04.110	Ord. No. 1684
San Mateo (City)	EE	9/3/2019	12/11/2019	<u>New SF and Duplexes:</u> All-electric OR min Eff. EDR reduction of 2.5	N/A	<u>New Office Buildings:</u> All-electric OR Mixed-Fuel + 10% compliance margin	2019 LR Res NC / 2019 Non Res NC	23.23.040	Ord. No. 2019-9
	PV			Prewire PV system for expansion to all-electric design	<u>New:</u> PV: ≥ 3 kW. Alternative: Solar thermal ≥ 40 sq ft collector area	<u>New:</u> <10,000 s.f.: min. 3 kW PV; 10,000+ s.f.: 5 kW PV Alternative: Solar thermal ≥ 40 s.f. collector area	2019 LR Res NC / 2019 Non Res NC	23.24.030	Ord. No. 2019-9
San Rafael	EE	11/18/2019	4/8/2020	<u>New:</u> CALGreen Tier 1: Mixed fuel, EDR ≥ 10, All-elec EDR ≥ 14	<u>New:</u> CALGreen Tier 1 (5% compliance margin)	<u>New:</u> CALGreen Tier 1 (10% compliance margin)	2019 LR Res NC / 2019 Non Res NC	Chapter 12.100	Ord. No. 1974

2019 Code Cycle - Locally Adopted Energy Ordinances

Jurisdiction	Ord. Type	Council Adopted Date	CEC Approval Date	Single Family and Low-rise Multifamily Requirement	High-rise Multifamily Requirement	Nonresidential Requirement	Cost-effectiveness Study	Municipal Code Link	Ordinance
Santa Monica	EE	9/24/2019	12/11/2019	<u>New</u> : All-electric OR Mixed-Fuel with CalGreen Tier 1	<u>New HRR/Hotel</u> : All-electric OR Mixed-Fuel and >5% compliance margin	<u>New</u> : All-electric OR Mixed-Fuel and >10% compliance margin	2019 LR Res NC / 2019 Non Res NC	8.36.020	Ord. No. 2617
	PV			<u>Major Additions</u> : PV system 1.5 watts per sq. ft.	<u>New and Major Additions</u> : 2 watts per sq. ft.	<u>New and Major Additions</u> : 2 watts per sq. ft.	2019 LR Res NC: PV + Additions Addendum	8.106.055	Ord. No. 2617
West Hollywood	EE, Cool Roofs	8/19/2019	12/11/2019	<u>New or Alteration</u> > 10,000 sq. ft.: PV to offset 15% of usage OR solar thermal with min. .5 solar fraction OR vegetative roof covering min. 30%	<u>New or Alteration</u> > 10,000 sq. ft.: PV to offset 15% of usage OR solar thermal with min. .5 solar fraction OR vegetative roof covering min. 30%	<u>New or Alteration</u> > 10,000 sq. ft.: PV to offset 15% of usage OR solar thermal with min. .5 solar fraction OR vegetative roof covering min. 30%	2019 NR+ Retrofits PV / 2019 Non Res NC	19.20.060	Ord. No. 19-1072

This report was prepared for the California Statewide Codes & Standards Program. The program is funded by California utility customers and administered by Pacific Gas and Electric Company, San Diego Gas & Electric Company (SDG&E®), Southern California Gas Company, and Southern California Edison Company under the auspices of the California Public Utilities Commission and in support of the California Energy Commission.

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2019 Code Cycle - Locally Adopted All-Electric Only Ordinances

Jurisdiction	Ord. Type	Council Adopted Date	CEC Approval Date	Scope			Municipal Code Link	Ordinance
				Single Family and Low-rise Multifamily	High-rise Multifamily	Nonresidential		
Berkeley	All-Electric	7/16/2019	N/A	New	New	New	Chapter 12.80	Ord. No. 7,672-N.S
Brisbane	All-Electric	12/12/2019	2/20/2020	<u>New:</u> Exception for cooktops/fireplaces; pre-wire for electric.	<u>New:</u> All-electric	<u>New:</u> Except Life science occupancies and gas specific for profit kitchen	15.83.060	Ord. No. 643
Campbell	All-Electric	2/18/2020	N/A	<u>New:</u> All-electric space/water heating. Natural gas OK for other uses; pre-wire for electric	N/A	N/A	18.18.020	Ord. No 2,260
Cupertino	All-Electric	1/21/2020	4/8/2020	<u>New:</u> All-electric (excluding ADUs)	<u>New:</u> All-electric	<u>New:</u> Exception for Fire, High-Hazard, Laboratory, and "Essential Facilities" occupancies; pre-wire for electric	16.54.100	Ord. No. 19-2193
Hayward	All-Electric	3/17/2020	6/10/2020	<u>New:</u> All-electric (including ADUs > 400 sq. ft.)	<u>New:</u> All-electric OR 10% compliance margin	<u>New:</u> All-electric OR 10% compliance margin (15% for Office/Retail)	9-1.02	Ord. No. 20-05
Healdsburg	All-Electric	12/16/2019	2/20/2020	<u>New:</u> Exception for cooktops, fireplaces, pool/spa; pre-wire for electric	<u>New:</u> Exception for cooktops, fireplaces, pool/spa; pre-wire for electric	<u>New:</u> Exception for cooktops, fireplaces, pool/spa, Essential Services, technical processes; pre-wire for electric	Section 15.04	Ord. No. 1196
Los Altos Hills	All-Electric	2/20/2020		<u>New:</u> All-electric space/water heating (including ADUs). Natural gas OK for other uses; pre-wire for electric	N/A	N/A	Chapter 1.6	Ord. No. 589
Los Gatos	All-Electric	12/17/2019	2/20/2020	<u>New:</u> All-electric (including ADUs); pre-wire for battery storage	N/A	N/A	Chapter 6.70.020	Ord. No. 2299

2019 Code Cyle - Locally Adopted All-Electric Only Ordinances

Jurisdiction	Ord. Type	Council Adopted Date	CEC Approval Date	Scope			Municipal Code Link	Ordinance
				Single Family and Low-rise Multifamily	High-rise Multifamily	Nonresidential		
Menlo Park	All-Electric	9/24/2019	12/11/2019	<u>New</u> : All-electric space/water heating and clothes dryers. Natural gas OK for cooktops/fireplaces; pre-wire for electric	<u>New</u> : All-electric	<u>New</u> : All-electric	Chapter 12.16	Ord. No. 1057
Morgan Hill	All-Electric	10/23/2019	N/A	<u>New</u> : All-electric	<u>New</u> : All-electric	<u>New</u> : All-electric	Chapter 15.63.40	Ord. No. 2306 N.S.
Mountain View	All-Electric	10/22/2019	2/20/2020	<u>New SF and Duplexes</u> : Exception for cooktops/fireplaces; pre-wire for electric. <u>New LR MF</u> : Exception for-profit kitchen cooking equipment	<u>New</u> : exception for F, H, and L occupancies and for-profit kitchen cooking equipment	<u>New</u> : exception for Fire, High-Hazard, and Laboratory occupancies and for-profit kitchen cooking equipment	Sec. 8.20	Ord. No. 17.19
Pacifica	All-Electric	11/25/2019	4/8/2020	<u>New</u> : Exception for ADUs; and cooktops/fireplaces; pre-wire for electric. <u>New LR MF</u> : Exception for-profit kitchen cooking equipment	<u>New</u> : Exception for cooktops/fireplaces; pre-wire for electric	<u>New</u> : exception for Fire and Police occupancies and for-profit kitchen cooking equipment	Section 8-6.01	Ord. No. 852-CS
Palo Alto	All-Electric	12/2/2019	2/20/2020	<u>New</u> : All-electric	<u>New</u> : All-electric OR > 5% compliance margin; electric-ready	<u>New</u> : All-electric OR Office & Retail: >12% compliance margin; Industrial/ Manufacturing + 0%; All other NR occupancies > 5% compliance margin; electric-ready	16.17.80	Ord. No. 5485
Richmond	All-Electric	3/3/2020	6/10/2020	<u>New</u> : All-electric space/water heating and clothes dryers. Natural gas OK for cooktops/fireplaces; pre-wire for electric <u>Replace/Upgrade Equipment</u> : all-electric	<u>New</u> : All-electric	<u>New</u> : Exception for Fire/Police, Life Sciences, For-profit kitchen cooking equipment; pre-wire for electric	Chapter 6.02.100	Ord No. 06-20 NS
San Jose	All-Electric	9/17/72019	N/A	<u>New</u> : All-electric	N/A	N/A	Chapter 17.845	Ord No. 30330

2019 Code Cycle - Locally Adopted All-Electric Only Ordinances

Jurisdiction	Ord. Type	Council Adopted Date	CEC Approval Date	Scope			Municipal Code Link	Ordinance
				Single Family and Low-rise Multifamily	High-rise Multifamily	Nonresidential		
San Mateo County	All-Electric	2/25/2020		<u>New</u> : All-electric	<u>New</u> : All-electric	<u>New</u> : exception for Laboratories, Emergency operations, and for-profit cooking (requires approval)	Section 9200	Ord No. 4824
Santa Cruz	All-Electric	4/14/2020		<u>New</u> : All-electric	<u>New</u> : All-electric	<u>New</u> : All-electric	Chapter 6.100	Ord. No. 2020-06
Santa Rosa	All-Electric	11/12/2019	2/20/2020	<u>New</u> : All-electric	N/A	N/A	Chapter 18-33.040	Ord. No. 2019-019
Saratoga	All-Electric	12/4/2020	4/8/2020	<u>New</u> : All-electric space/water heating. Natural gas OK for cooktops/fireplaces/clothes dryer; pre-wire for electric	<u>New</u> : All-electric space/water heating; pre-wire for electric	<u>New</u> : All-electric space/water heating. Except public agency owned emergency centers; pre-wire for electric	Chapter 16.51.015	Ord. No. 366
Windsor	All-Electric	10/16/2019	2/20/2020	<u>New</u> : All-electric	N/A	N/A	Chapter 7.7.100	Ord. No. 2019-338

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