



City of Sunnyvale

Agenda Item-No Attachments (PDF)

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REPORT TO SUSTAINABILITY COMMISSION and PLANNING COMMISSION

SUBJECT

Forward a Recommendation to the City Council to approve a Phased Reach Codes program and implement Phase 1 for new Residential and Non-Residential Construction Projects: Introduce an Ordinance to Amend Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) and Find that the Action is Exempt from CEQA

REPORT IN BRIEF

Sunnyvale's Climate Action Playbook, adopted in 2019 includes six key strategies to reduce greenhouse gas (GHG) emissions. Strategy 2 is Decarbonizing Buildings, which aims to reduce natural gas use and shift to all-electric buildings. To help achieve environmental goals, many communities have adopted "reach codes." These are local energy codes for building design and construction that go beyond minimum state requirements. The codes help reduce greenhouse gas emissions by promoting electric versus natural gas energy use. Staff is recommending a phased Reach Codes program that would start with all electric construction for new buildings. Remodels, improvements and chargers for electric vehicles would come later. Reach codes apply to both residential and nonresidential buildings. Staff recommends implementation of Phase 1 through introduction and adoption of an amendment to the Sunnyvale Municipal Code Chapter 16 (Building and Construction).

BACKGROUND

Sunnyvale adopted its first Climate Action Plan in 2016 to assist the City in achieving the 2020 State of California climate targets. In 2019, the City adopted an updated plan, called the Climate Action Playbook (Playbook, and sometimes referred to as CAP 2.0) to identify a pathway to meet and exceed to State's longer-term climate targets for 2030 and 2050. The Playbook includes six key strategies to reduce GHG emissions. Strategy 2 is Decarbonizing Buildings, which aims to reduce natural gas use and shift to all-electric buildings. As of 2018, nearly 38 percent of community-wide GHG emissions in Sunnyvale come from energy use in buildings for space heating, water heating, clothes drying, and cooking.

Within Strategy 2, the Playbook includes:

- **Move 2.E** - Evaluate code and permitting processes to streamline building electrification.

Reach codes are the policy tool for implementing the Playbook's Move 2.E and are designed to reduce the City's carbon emissions from building energy usage. Reach codes revise the California Title 24 energy code requirements (CALEnergy), and exceed the codified requirements of the CALEnergy codes.

The Playbook includes a target to achieve 100 percent all-electric new buildings by 2030. The proposed Reach Codes are consistent with this target. The City can implement Reach Code

requirements if they are demonstrated to be cost-effective compared to implementing the minimum CALEnergy provisions. Further, proposed reach codes that are shown to be cost-effective and consistent with our Playbook strategies must be approved by the California Energy Commission (CEC). The proposed ordinance cannot take effect until at least 30 days following CEC approval.

The City Council is scheduled to consider this item at their meeting of October 27, 2020.

EXISTING POLICY

GENERAL PLAN

Chapter 2 - Community Vision

VISION STATEMENT

Sunnyvale is an attractive, safe, environmentally-sensitive community which takes pride in the diversity of its people, the innovation of its business and the responsiveness of its government.

Vision : It is the aspiration of the people of Sunnyvale to build upon the attributes which the City currently enjoys, so that Sunnyvale of the future will become ...

- **A regional leader in environmental sustainability** ... advocating to reduce dependence on non-renewable resources by providing greater transportation options, reducing waste, protecting our natural resources, and promoting alternative energy usage and research. We take environmental preservation and protection seriously and consider how each action will affect Sunnyvale for future generations.
- **A city managed by a responsible and responsive government** ... that delivers quality services in a comprehensive, cost-effective manner. The City evolves gracefully with the changing needs of the community and regularly communicates with residents and businesses to engage them in decision-making processes.

COMMUNITY VISION GOALS:

III. ENVIRONMENTAL SUSTAINABILITY - To promote environmental sustainability and remediation in the planning and development of the City, in the design and operation of public and private buildings, in the transportation system, in the use of potable water and in the recycling of waste.

Chapter 3 - Land Use and Transportation

GOAL LT-1: COORDINATED REGIONAL AND LOCAL PLANNING - Protect the quality of life, the natural environment, and property investment, preserve home rule, secure fair share of funding, and provide leadership in the region.

Environmental Protection and Adaptation

Policy LT-1.10 Participate in federal, state, and regional programs and processes in order to protect the natural and human environment in Sunnyvale and the region.

Policy LT-1.11 Prepare for risks and hazards related to climate change prior to their occurrence.

GOAL LT-2: ENVIRONMENTALLY SUSTAINABLE LAND USE AND TRANSPORTATION

PLANNING AND DEVELOPMENT - Support the sustainable vision by incorporating sustainable features into land use and transportation decisions and practices.

Green Development

Policy LT-2.1 Enhance the public's health and welfare by promoting the city's environmental and economic health through sustainable practices for the design, construction, maintenance, operation, and deconstruction of buildings, including measures in the Climate Action Plan.

Greenhouse Gas Reduction

Policy LT-2.2 Reduce greenhouse gas emissions that affect climate and the environment through land use and transportation planning and development.

Alternate/Renewable Energy Systems

Policy LT-2.7 Provide Sunnyvale residents and businesses with opportunities to develop private, renewable energy facilities.

Chapter 7 - Environmental Management (EM)

AIR QUALITY

GOAL EM-11 IMPROVED AIR QUALITY - Improve Sunnyvale's air quality and reduce the exposure of its citizens to air pollutants.

Policy EM-11.2 Utilize land use strategies to reduce air quality impact.

SUNNYVALE MUNICIPAL CODE

Chapter 19.39 (Green Building Regulations)

The purpose of this Chapter is to implement sustainable development with development and construction practices designed to use natural resources in a manner that does not eliminate, degrade or diminish their usefulness for future generations, to enhance the public health and welfare by promoting the environmental and economic health of the city through the design, construction, maintenance, operation and deconstruction of buildings and other site development, and to incorporate green building practices into all development projects. The green building provisions referred to in this Chapter are designed to achieve the following goals:

- a) Increase energy efficiency in buildings;
- b) Encourage water and resource conservation;
- c) Minimize waste generated by construction projects;
- d) Provide durable buildings that are efficient and economical to own and operate;
- e) Promote the health and productivity of residents, workers, and visitors to the city; and
- f) Recognize and conserve the energy embodied in existing buildings.

These zoning regulations have performance requirements adopted by Resolution that are periodically updated to strengthen green building standards. The most recent update took effect on July 1, 2019. Attachment 9 is a summary of the Green Building Program.

CLIMATE ACTION PLAYBOOK

The Playbook, adopted in 2019, identifies strategies for reducing community-wide greenhouse gas (GHG) emissions and a work plan for creating a more sustainable, healthy, and livable Sunnyvale.

This document includes actions that the City and community can take to reduce community-wide GHG emissions and exceed the State's target of achieving an 80 percent reduction below 1990 emission levels by 2050. The Playbook identifies strategies, policies, and a work plan to reduce GHG emissions to achieve the following targets:

The Playbook's adopted targets for Sunnyvale are to reduce emissions to:

- 56 percent below 1990 levels by 2030 (exceeds State SB 32, 2016, a target of 40 percent below 1990 levels)
- 80 percent below 1990 levels by 2050 (meets Executive Order S-3-05, 2005)

Related to buildings, the Playbook includes specific targets to:

- Load from local solar: 3 percent by 2030; 5 percent by 2050
- Homes and businesses completely electrified: 20 percent by 2030; 50 percent by 2050
- 100-percent all-electric new buildings by 2030

ENVIRONMENTAL REVIEW

The action being considered is exempt from review under the California Environmental Quality Act ("CEQA") pursuant to Title 14 of the California Code of Regulations, Section 15308 (Class 8 - Actions by Regulatory Agencies for Protection of the Environment) and Section 15305 (Class 5 - Minor alterations in Land Use Limitations) and Section 15061 of the CEQA Guidelines, that the proposed Ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) because it can be seen with certainty that there is no possibility that the changes adopted will have a significant effect on the environment.

DISCUSSION

To help achieve environmental goals, many communities have adopted "reach codes." These are local energy codes for building design and construction that go beyond minimum state requirements. The codes help reduce greenhouse gas emissions by promoting electric versus natural gas energy use.

The proposed Reach Codes are designed to exceed the California Energy Codes, which are the State's minimum energy conservation standards. The Reach Codes are a pathway toward meeting the State and City GHG emission targets.

A proposed Reach Code must be fiscally responsible pursuant to the State of California, which requires proof of its cost-effectiveness, before implementation. Funded by the California investor-owned utilities (IOUs), the California Statewide Codes and Standards Program (Statewide Program) led the development of a cost-effectiveness study for Energy Reach Codes that examined different performance-based approaches for new construction of specific building types. Refer to Attachment 5 for cost-effectiveness studies.

There are two kinds of Reach Code approaches: performance-based ordinances and prescriptive ordinances. Performance-based ordinances mandate an increase in the overall energy efficiency required but allow flexibility for the developer regarding how to achieve this goal. In contrast, prescriptive ordinances mandate the implementation of a specific measure (such as solar panels or cool roofs). The Statewide Program's analysis focused on performance-based ordinances; some conclusions about prescriptive measures can also be made from the results.

A four-phased implementation of Reach Codes is summarized in the table below. Phase 1, covered by the proposed ordinance, covers new construction to meet all-electric standards with few exemptions. Phase 2 is projected to follow in Summer 2021; the subsequent phases would follow when the Statewide Program determines cost-effectiveness.

	Residential	Non-Residential	Schedule
Phase 1 – All-Electric New Construction	X	X	January 2021
Phase 2 – Commercial Kitchens (Stage 1) & Residential Pre-wiring for Vehicle Charging	X	X	Summer 2021
Phase 3 – Commercial Kitchens (Stage 2), and Additions and Alterations to Existing Buildings	X*	X*	Undetermined
Phase 4 – Large Hotel Laundry Facilities		X*	Undetermined

* Not shown to be cost-effective as of August 2020.

Phase 1

Phase 1 would meet two Climate Action Playbook elements:

- Strategy 1 - Promoting Clean Energy, Play 1.2 -Increase local solar photovoltaics
- Strategy 2 - Decarbonizing Buildings, Play 2.3 - Achieve all-electric new construction.

The proposed Phase 1 Reach Codes include residential and non-residential projects. The proposed ordinance will require new residential and non-residential construction to be all-electric. This phase addresses the largest GHG source from buildings, space and water heating, using natural gas.

Photovoltaic systems would be required for residential and non-residential new construction projects. For non-residential construction, solar water heating is offered as an option for photovoltaic energy generation.

There are five proposed exceptions to the requirements to have all-electric new construction:

1. Buildings with industrial and process loads (such as manufacturing and refrigeration buildings).
 - These uses cannot be demonstrated to meet energy efficiency requirements.
2. In-house commercial laundries in large hotels (more than 80 guestrooms).
 - These uses cannot be demonstrated to meet energy efficiency requirements.

3. Public agency owned and operated emergency centers. To take advantage of this exception applicant shall provide third party verification that All-Electric space heating requirement is not cost effective and feasible.
4. Non-residential (commercial) kitchens in new buildings, which will be implemented in Phase 2 and Phase 3.
 - Small scale (typically home) kitchens have several electric cooking options (e.g., induction, radiant, microwave); however, commercially viable alternatives have not been identified for non-residential kitchens. The use of induction stovetops requires specific cookware and may be a major investment. Attachment 6 is a copy of a study on Energy Reduction in Non-residential Kitchens that discusses many factors associated with operating Non-residential kitchens.
5. Buildings which the applicant establishes that it cannot achieve the performance compliance standard applicable to the building under the Energy Code using commercially available technology may approved by the Building Official, who shall require the applicant shall comply with the pre-wiring provisions.

In keeping with current practices and state building codes, attached accessory dwelling units (ADU), which are treated as an addition to an existing home. Detached ADUs are considered new construction and must comply with all-electric requirements).

Staff recommends that Phase 1 become effective on January 1, 2021. This date should provide sufficient time for the CEC to an adopted local ordinance. Further, staff recommends that the new code not apply to projects with a complete Planning application (including approved applications) and complete building permit applications submitted as of the effective date of the program. These developments are typically well into the design phase of their projects and would likely be negatively impacted by the late change in City policy. This exception is consistent with the practice of updating the City's Green Building requirements.

Phase 2

Phase 2 would address the following Playbook elements:

- **Strategy 2** - Decarbonizing buildings, Play 2.3 - Achieve all-electric new construction and Play 2.2 - Support electrification of existing buildings; and,
- **Strategy 3** - Decarbonizing transportation and sustainable land use, Play 3.3 - Increase zero-emission vehicles.

Phase 2 Reach Codes would require new residential additions and alterations to prewire buildings for electric vehicle charging.

Staff recommends that new construction of non-residential kitchens are addressed in a two-stage approach. The first stage would require the installation of highly efficient kitchen equipment with EnergyStar ratings and educating employees on energy-saving protocols. The second stage would require new kitchens to be all-electric. The timeline for the first stage implementation is Summer of 2021. The second stage would be considered for implementation in January 2023.

Phase 3

Phase 3 would address the following Playbook elements:

- **Strategy 2** - Decarbonizing buildings, Play 2.1 - Reduce energy consumption in existing buildings, and Play 2.2 support the electrification of existing buildings.

Phase 3 of the Reach Code implementation would address both residential and non-residential additions and alterations. It could require residential alterations to trigger upgrades to electric appliances (kitchen remodels). Residential additions would be required to meet the requirements of new construction, such as electric appliances and photovoltaic systems.

Non-residential new tenant improvements would be all-electric and shall meet the minimum California Energy Code standards. Non-residential additions must meet the standards of new construction and all-electric requirements. Phase 3's implementation timeline is unknown since it is currently not shown to be cost-effective.

Phase 4

Similar to Phase 1, this phase would align with Plays 1.2 and 2.3 of the Playbook.

This phase targets commercial laundry facilities in large hotels of 80 rooms or more. Phase 4 would require large hotels to provide electric clothes drying facilities. Under Phase 1, laundry facilities in Large Hotels are exempt from all-electric requirement because it has not been proven to be cost-effective.

Phase 4 requirements are proposed for deferral due to an ongoing study by the Statewide Program on the cost-effectiveness of electric laundry dryers versus gas dryers. Phase 4 could launch upon completion of the cost-effectiveness study if the findings support Reach Codes for this building type and size.

Benchmarking with Other Agency Reach Codes

Reach Code progress for the local jurisdictions within Santa Clara County are provided in Attachment 3. Nine of the 14 agencies included on the table have adopted reach codes. Four of the adopted codes ban use of natural gas in new buildings (and at least one has a ban on new connections to gas). All of the cities with a gas "ban" have exceptions for various situations such as non-residential kitchens (see Attachment 4).

Current Feedback

Although outreach is still active, a trend in feedback has been revealed. Many believe Reach Codes will reduce greenhouse gases and support a healthier and safer living environment. Some support the City's Climate Action Playbook and the effort to support electrification. However, although Reach Codes are cost-effective over the life of the building, it is strongly felt by some that the initial cost is too high. Many believe electrification should be a personal choice and Reach Codes should be implemented through encouragement by way of city-backed monetary incentives.

FISCAL IMPACT

The implementation of Reach Codes would not have a direct fiscal impact to the City. Review of projects with Reach Code requirements would be covered through permit fees.

PUBLIC CONTACT

The City of Sunnyvale provided outreach through presentations posted on the City's YouTube channel. Feedback was collected through surveys available on Open City Hall. Survey results are included in Attachments 7 and 8. Other public contact is found in Attachment 10.

Email messages were sent to announce the information presentation and surveys to neighborhood associations, community organizations, building industry representatives, architects, developers, contractors and other persons and organizations expressing interest in Reach Codes or general Community Development Related activity. An article was placed in Update Sunnyvale.

Notice of Public Hearing, Staff Report and Agenda:

- Sustainability Commission and Planning Commission Agendas were posted on the City's official notice bulletin board.

ALTERNATIVES

1. Forward a Recommendation to the City Council to approve a Phased Reach Codes program and implement Phase 1 for new Residential and Non-Residential Construction Projects and Introduce an Ordinance to Amend Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) and Find that the Action is Exempt from CEQA pursuant to CEQA Guidelines Sections 15308, 15305 and 15061.
2. Alternative 1 with Modifications.
3. Take no action and give staff direction on what should be included in the Reach Codes.

STAFF RECOMMENDATION

Alternative 1: Forward a recommendation to the City Council to approve a Phased Reach Codes program and implement Phase 1 for new Residential and Non-Residential Construction Projects: Introduce an Ordinance to Amend Chapter 16.42, Energy Code, of Title 16 (Buildings and Construction) and Find that the Action is Exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Sections 15308, 15305 and 15061.

Through a phased approach to implement Reach Codes, the City of Sunnyvale would make a positive difference in reducing GHG and would be an aspirational example of a City's ability to go above and beyond to reduce its climate impact through aggressive prioritization and careful cost-benefit analysis. Phase 1 implementation is projected to commence January 1, 2021, and Phase 2 is planned for Summer 2021.

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Reviewed by: Trudi Ryan, Director of Community Development

Reviewed by: Rebecca Moon, Senior Assistant City Attorney

Reviewed by: John Nagel, City Attorney

Reviewed by: Teri Silva, Assistant City Manager

Approved by: Kent Steffens, City Manager

ATTACHMENTS

1. *Reserved for Report to Council*
2. Draft Ordinance
3. Benchmarking with other Reach Codes

4. Wood-burning/Gas Appliances and Commercial Kitchens
5. Cost-Effectiveness Studies
6. Commercial Kitchens Study
7. Survey Results: Non-residential Reach Codes
8. Survey Results: Residential Reach Codes
9. Green Building Program
10. Public Contact