Single-Family Flexpath Staff Report

Version Tracking

|  |  |  |
| --- | --- | --- |
| **Date** | **Version #** | **Description of Changes** |
| 08/01/2025 | 1.0 | Original release |

***Introduction***

*This is a customizable template for completing an electric-readiness staff report. Blue in-line text needs customization- things like dates, local legislation, staff, and ordinance-specific references for your customized reach code. Complete these sections to customize this staff report to reflect your local context and reach code.*

[DATE]

**FROM:** *[Department Head Name, Title]*

*[Other Contributor(s), Title]*

**Prepared By:** *[Report-writer Name, Title]*

*[Other Contributor(s), Title]*

**SUBJECT: *[****Energy EfficienT RENOVATIONS POLICY FOR major residential additions and alterations]*

**Recommendation**

Adopt an ordinance amending [jurisdiction] Municipal/County Code Section [xxx] to require that major additions and alterations in single family homes, duplexes and townhomes must include certain energy efficiency measures, including cool roofs and electric readiness as part of their project.

BACKGROUD

*[Include local policy that is relevant in this section. Some common examples are Climate Action Plans, legislation, Council climate action goals, commission findings, mayoral direction, local referenda, or any other reason a reach code was pursued by this jurisdiction[.*

A suite of adopted City Council policies support the staff recommendation to adopt the *[use policy reference/description in subject line]* for existing single-family residential buildings. A select summary of this policy context is below:

* *XXXXXXX*
* *XXXXXXX*
* *XXXXXXX*

*[Use this section to highlight staff direction and timeline associated with developing the ordinance for existing single-family]*

DISCUSSION

Background

*[Use this section to highlight staff direction and timeline associated with developing the ordinance for existing single-family homes.]*

On *[Month DD, YYYY]*, the Council approved *[Ordinance/Resolution XY]*, which directed staff to *[develop cost-effective building electrification policies for existing buildings].*

On *[Month DD, YYYY]*, staff conducted a [Study Session] with *[Governing Body of Jurisdiction]* to discuss the various policy options available to increase the rate of existing buildings emissions reductions. Council directed staff to return in *[YYYY]* with draft energy efficiency requirements for major additions and alterations. This report and the attached proposed ordinance provide these draft requirements, referred to as the *[Policy name]*, for Council’s consideration.

proposed policy

*[Use this section to describe how the reach code builds on the policies listed in the policy context section]*

The *[Policy name]* would require that major additions and alterations (as further defined herein) will need to include *[certain energy efficiency measures, including cool roofs]* as part of their project. The policy is focused on *[water heating and space heating because they are the two largest energy uses in residential buildings, and includes measures to improve whole building efficiency and will be implemented via local amendments to the California Energy Code.]*

To be consistent with state law, the *[Jurisdiction]* must make findings that the proposed building code amendments related to building energy performance are cost effective and will require buildings to be designed to use less energy than the standard State Energy Code. The California Energy Commission (CEC) must agree with the City's analysis before the local amendments to the California Energy Code can go into effect. A study commissioned by the California Codes and Standard Program (see Attachment B) has found that the proposed requirements are cost effective. The policy will also prepare homes for compliance Bay Area Air District’s Rules 9-4 and 9-6, which limit the sale of natural gas-fueled building appliances.

**Proposed Energy Efficiency Renovations Policy**

The ordinance would require that single-family residential *major* additions and alterations be required to include certain energy efficiency measures, *and in some cases include cool roof installations for roofing projects. In addition, cool roofs would be required during roof renovation or replacement projects [Applicable to certain climate zones and vintages only; check* [*Cost Effectiveness Explorer*](https://explorer.localenergycodes.com/) *for details].*

*Proposed Policy Applicability*

Staff reviewed construction and compliance measure cost estimates, previously submitted building permits, and examples from the nearly 20 statewide existing building energy reach codes to identify the appropriate applicability for buildings in *[Jurisdiction].* Based on cost of construction and compliance and in seeking to adopt a policy that effectively fits into major construction projects, staff propose that the policy apply to Covered Single Family Projects, as defined below as thresholds for applicability:

* *XXXXXXX*
* *XXXXXXX*
* *XXXXXXX*

*Proposed Policy Compliance Requirements*

As proposed, Covered Single Family Projects, would have to complete the two requirements listed below.

* *Requirement 1 - Upgrade all internal and external lighting to LED lighting and upgrade external fixtures to include photocells or timers so that they are not operated during the daytime.*
* *Requirement 2 - Insulate all accessible hot water pipes with pipe insulation a including the supply pipe leaving the water heater, piping to faucets underneath sinks, and accessible pipes in attic spaces or crawlspaces and upgrade fittings in sinks and showers.*
* *Requirement 3 – Any combination of energy-related measures from Table 1 (below) totaling X or more points.*

*Table 1. Measures[[1]](#footnote-2)*

*Use the* [cost-effectiveness explorer tool](https://www.bing.com/ck/a?!&&p=dfadf0ee635966a32d108f8d39aaedd26ed0425f9cc2e6e1b626e3b165812afcJmltdHM9MTc1MDI5MTIwMA&ptn=3&ver=2&hsh=4&fclid=1e386479-6cf3-69c2-01c8-72766db768f5&psq=cost-effectiveness+explorer+local+energy+code&u=a1aHR0cHM6Ly9leHBsb3Jlci5sb2NhbGVuZXJneWNvZGVzLmNvbS8&ntb=1) *to develop the measure table and target score*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *ID* | *Measures* | *Building Vintage* | | |
| *Pre-1978* | *1978-1991* | *1992-2010* |
| *E1* | *Lighting Measures* | *Mandatory* | | |
| *E2* | *Water Heating Package* |  |  |  |
| *E3* | *Air Sealing* |  |  |  |
| *E4.A* | *R-38 Attic Insulation* |  |  |  |
| *E4.B* | *R-49 Attic Insulation* |  |  |  |
| *E5* | *Duct Sealing* |  |  |  |
| *E6.A* | *New Ducts, R-6 Insulation + Duct Sealing* |  |  |  |
| *E6.B* | *New Ducts, R-8 Insulation + Duct Sealing* |  |  |  |
| *E7* | *Windows* |  |  |  |
| *E8* | *Wall Insulation* |  |  |  |
| *E10.A* | *R-19 Raised floor insulation* |  |  |  |
| *E10.B* | *R-30 Raised floor insulation* |  |  |  |
| *E10* | *Cool Roof* |  |  |  |
| *E11* | *Radiant Barrier Under Roof* |  |  |  |
| *FS1* | *Heat Pump Water Heater Replacing Gas* |  |  |  |
| *FS2* | *High Eff. Heat Pump Water Heater Replacing Gas* |  |  |  |
| *FS3* | *Heat Pump Water Heater Replacing Electric* |  |  |  |
| *FS4* | *High Eff. Heat Pump Water Heater Replacing Electric* |  |  |  |
| *FS5* | *Heat Pump Space Conditioning System* |  |  |  |
| *FS6* | *High Eff. Heat Pump Space Conditioning System* |  |  |  |
| *FS7* | *Dual Fuel Heat Pump Space Conditioning System* |  |  |  |
| *FS8* | *Heat Pump Clothes Dryer* |  |  |  |
| *FS9* | *Induction Cooktop* |  |  |  |
| *PV* | *Solar PV and/or Electric Readiness* |  |  |  |

*Proposed Exemptions*

To accommodate the wide variability in existing buildings, staff proposes the following exemptions (the list below provides a brief overview of exemptions which are described in greater detail in Attachment A):

*[Edit as needed]*

1. *New Units*
2. *Mobile Homes, Manufactured Housing, or Factory-built Housing*
3. *Repairs.*
4. *Emergency Housing*
5. *Roof and Windows*
6. *Technological or Economic Infeasibility:*
7. *Efficient projects*
8. *Pre-Compliance.*
9. *Covenant Restrictions*
10. *New Construction*
11. *Limited improvements*
12. *Repairs*
13. *Hazard Mitigation*
14. *Hardship for Low-Income Owners:*
15. *Historic Buildings.*
16. *Hazard Mitigation (i.e. Seismic upgrades)*
17. *Alterations that consist solely of roof and/or window projects.*
18. *State-exempted ADUs per SB1211*

*Examples of Applicable Projects and Compliance*

The types of projects that would be applicable to the *[Policy name]* under the definitions proposed above would be elective major construction projects that are closer to new construction than a typical smaller addition or alteration might be. These types of projects require a building permit and are required to comply with state and local codes and requirements. As such, depending on the project scope, applicants of these types of projects typically already have an architect, engineer, and energy code compliance expert on their design team. In many cases, the construction teams of such projects include a general contractor and both plumbing and electrical sub-contractors.

*Cost Effectiveness*

The California Energy Commission (CEC) requires any local energy standards that exceed the California Energy Code to be cost effective and to use less energy than the state requirements. The CEC requires the local agency to adopt a determination, at a public meeting, that the energy standards are cost effective. *Staff has provided recommended findings that meet these standards below and in the draft Ordinance provided as [Attachment A].* The determination must subsequently be filed with the CEC, which would be completed by staff upon adoption of the draft Ordinance.

The CEC provides two different cost effectiveness metrics. “On-bill” cost effectiveness refers to the direct cost experienced by the homeowner. For something to be cost effective “on-bill”, the energy bill savings of a measure must at least pay for the cost of that measure over a 20-year period. The other approach is “Long-Term Systemwide Cost” (LSC). LSC considers the cost to install energy efficiency measures, the on-bill savings from those measures, and larger system costs that everyone pays for like energy infrastructure costs and the impacts of climate change. For CEC approval, a local amendment to the California Energy Code must show a compliance pathway that is *either* “on-bill” or “LSC” cost effective. As described below, staff’s proposed policy has “on-bill” *and* “LSC” cost effective compliance pathways.

In support of reach code development, the California Energy Codes and Standards Statewide Utility Program, which includes the State's Investor-Owned Utilities (Pacific Gas, and Electric (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE), under the auspices of the California Public Utilities Commission) developed and published the 2025 Single Family Cost Effectiveness Report, provided as Attachment B.[[2]](#footnote-3)

This study and the associated cost-effectiveness data are highly detailed and are included in the record to support Council’s findings and policy decisions. The study and the associated cost-effectiveness data include a calculated benefit-to-cost ratio for a wide variety of measures and climate zones. A benefit-cost value of “1” or greater illustrates that the measures save more than they cost and are therefore “cost effective.”[[3]](#footnote-4) The study and the associated cost-effectiveness data are the basis for staff’s recommended cost effectiveness findings and are sufficient to illustrate compliance with the requirements set forth under California Administrative Code Chapter 10-106.

Based on the study, staff recommends finding that the proposed local additions and alterations amendments to the 2025 California Energy Code to be cost-effective and consume less energy than otherwise permitted by Title 24, Part 6. The following additional detail is included for transparency and to facilitate the California Energy Commission’s review of the City’s cost effectiveness findings:

* *[Jurisdiction’s] requirement that major additions or alterations install energy efficiency measures includes at least X cost effective measure packages:* 
  + *Package 1, installing XXX would save energy relative to the base code and would achieve a benefit to cost ratio of XXXX.*
  + *Package 2, installing XXX would save energy relative to the base code and would achieve a benefit to cost ratio of XXXX.*
  + *Package 3, installing XXX would save energy relative to the base code and would achieve a benefit to cost ratio of XXXX.*
  + *Package 4, installing XXX would save energy relative to the base code and would achieve a benefit to cost ratio of XXXX.*
  + *Package 5, installing XXX would save energy relative to the base code and would achieve a benefit to cost ratio of XXXX.*

*Cool Roof Requirements for Replacements*

*[Applicable to certain climate zones and vintages only; check* [*Cost Effectiveness Explorer*](https://explorer.localenergycodes.com/) *for details]*.

When 50% or more of a sloped roof is replaced in homes built before *[specify vintages as applicable]*, the new roof must exceed the minimum State standard for reflecting heat (0.25 aged solar reflectance vs. the State standard of 0.20), which will reduce cooling energy. Flat roofs must already meet higher requirements under the State standard.

*Available Resources for Lower Cost Renovations*

Many of the compliance measures have rebates, incentives, and tax credits associated with them which could substantially reduce the cost of compliance. Financial resources and technical assistance include:

[Add any incentives that are available locally or regionally]

Public Engagement

Ahead of the *[DATE]* study session on existing buildings, staff conducted numerous public engagement activities. Since receiving Council strategic direction to develop an additions and alterations retrofit policy at that study session, staff have conducted the additional following outreach:

[Summarize public outreach and engagement activities.]

Policy Implementation Considerations

The policy would be implemented via an additional/modified intake form required at time of building permit submittal. Building staff would review the application for consistency with the policy and field verification would happen as part of the typical inspection process.

Schedule and Next Steps

Should Council approve staff’s recommendations, work would proceed on the timeline provided in Table 2 below.

**Table 2. Schedule and Next Steps**

|  |  |
| --- | --- |
| **Task** | **Timeframe** |
| Second reading of the draft Ordinance (Attachment A) and submittal to the California Energy Commission and California Building Standards Commission |  |
| Develop implementation forms, training, and help desk services |  |
| Receive approval from the California Energy Commission and California Building Standards Commission approves for filing |  |

ENVIRONMENTAL REVIEW

[This text should be prepared by qualified staff and should read the same as the ordinance. Two samples are provided below. Edit as needed]

Staff’s recommendations are found to be exempt from CEQA under the general rule, 15061(b)(3), because it can be seen with certainty that the provisions contained herein would not have the potential for causing a significant effect on the environment. Further, this ordinance is also exempt from CEQA under the categorical exemptions in Section 15308 of the CEQA Guidelines in that the proposed ordinance would institute regulatory requirements intended to protect the environment and natural resources.

This ordinance is exempt from CEQA under 15061(b)(3) on the grounds that these standards are more stringent than the State energy standards, there are no reasonably foreseeable adverse impacts and there is no possibility that the activity in question may have a significant effect on the environment.

ALTERNATIVES

1. *XXXXXX*
2. *XXXXXX*
3. *XXXXXX*

ATTACHMENTS

1. *Ordinance Adopting the [Policy name]*
2. *[2025 Single Family Cost-Effectiveness Study](https://localenergycodes.com/download/1222/file_path/fieldList/Single%20Family%20Retrofits%20CostEff%20Report.pdf)*
3. *Cost-Effectiveness Results Summary*
4. Version of the Ordinance Showing Markup of State Energy Code

1. Attachment A provides additional information about each energy efficiency measure. [↑](#footnote-ref-2)
2. The California Energy Codes and Standards Statewide Utility Program publishes cost effectiveness reports and accompanying study data at: <https://localenergycodes.com/content/resources> [↑](#footnote-ref-3)
3. For more detail, see section 2.1.3 of <https://localenergycodes.com/download/1266/file_path/fieldList/2022%20Nonres%20New%20Construction%20Cost-eff%20Report.pdf> [↑](#footnote-ref-4)