

City of Piedmont

Amendments to Building Standards Code ("Reach Codes")

To Reduce Greenhouse Gas Emissions
and Increase Resiliency



Proposed amendments

Local amendments to:

- Title 24, Part 2.5: Residential Code
- Part 3: Electrical Code
- Part 6: Building Energy Efficiency Standards



Local amendments to Title 24

Title 24: California Building Standards

Other jurisdictions have adopted local amendments to Title 24 (esp Part 6) to reduce gas use in new buildings, meet Climate Action Plan goals

Staff's proposals: set new standards in new **and** existing buildings → reduce gas use, help meet Piedmont's Climate Action Plan goals



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- Benefits of proposed amendments
- Amendment development and outreach process



Proposed Building Code Amendments



All - Electric New Construction

Newly constructed low-rise residential (LRR) buildings must use all electric building appliances.

Newly constructed LRR buildings will be prohibited from being connected to natural gas service.

- (These requirements would also apply to new detached Accessory Dwelling Units)



Solar panel installation

When an existing Low Rise Residential building gets a new upper level, or increases its roof area by 30% or more:

The installation of solar panels is required



Renovation Insulation/ Electrification

A housing renovation on a low-rise residential building, that costs \$25,000 or more, must include one item from a list of energy efficient insulation or electrification improvements.

Renovations of \$100,000 or more must include two items.



List – Insulation and efficiency items

- A package of attic insulation, air sealing, and duct sealing
- Floor insulation
- A package of low-flow fixtures and water heater/water piping insulation
- Switch out existing lights for high efficacy lights with motion sensors
- Submit a report from a Home Energy Score or Home Energy Audit completed in the last five years. Follow one recommendation from the report.



List – Electrification items

- Switch out gas furnace for heat pump (or other energy efficient electric space heating system)
- Switch out gas water heater for heat pump (or other energy efficient electric water heating system)



Home Energy Score/ Audit

Require submission of a Home Energy Score or Home Energy Audit report (homeowner's choice), completed within the past five years:

- At point of listing for sale of property
- When an application is submitted for design review permit

Purpose: to inform homeowner and potential buyers of opportunities for energy savings in his/her home



Amendments to facilitate future electrification

- An electrical panel upgrade must include capacity to accommodate future electrification of all appliances
- Kitchen renovation must include electrical outlets at the location of all major appliances
- Laundry area renovation must include outlet for a future electric clothes dryer



Benefits of Proposed Amendments



Benefits of Proposed Codes

- Help meet Climate Action Plan 2.0 emissions and resiliency goals
- Lead on climate policy
- Improve residents' health
- Save residents money



CAP 2.0 emissions goals

Reduce **in-territory** emissions:

- 40% between 2005 and 2030
- 80% between 2005 and 2050



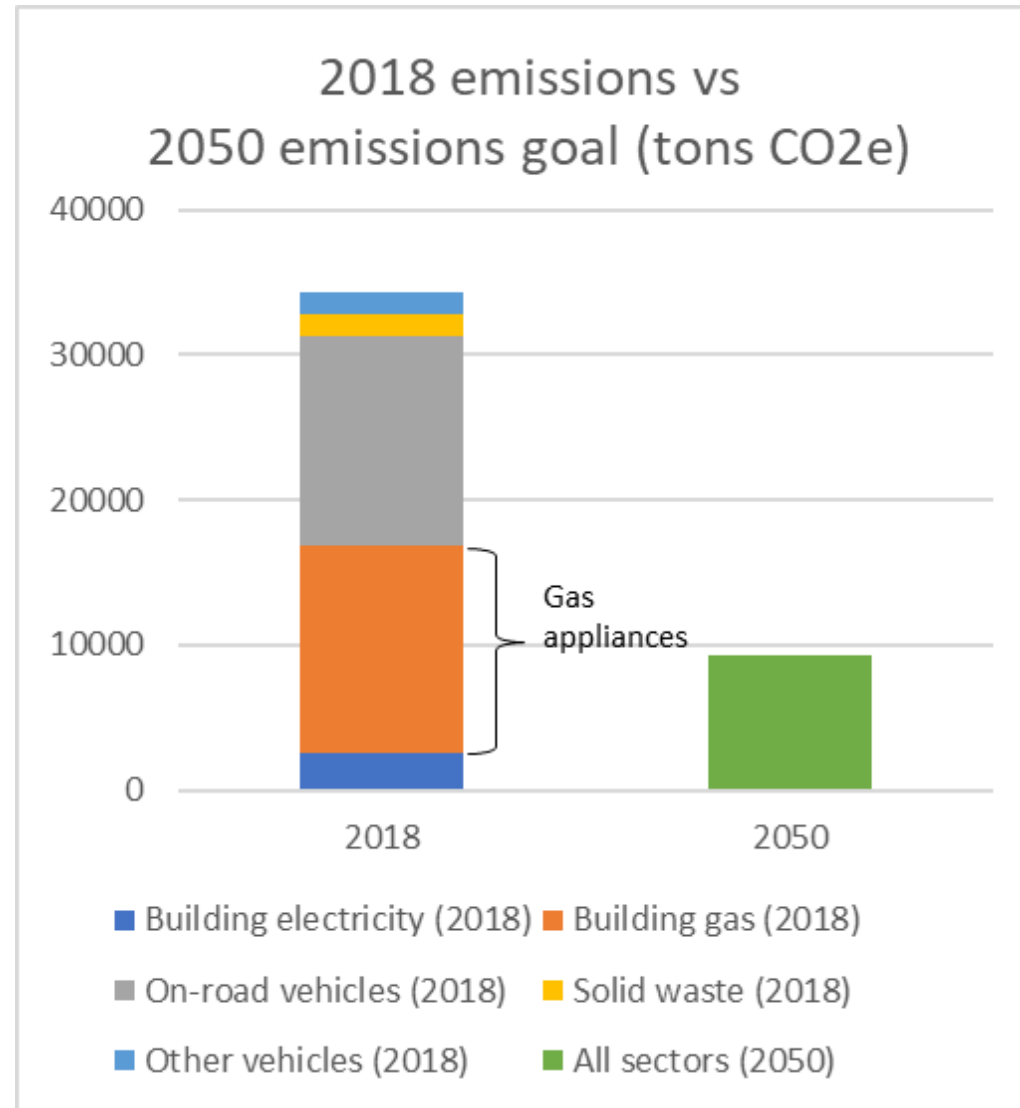
CAP 2.0 emissions goals

Reduce **in-territory** emissions:

- 40% between 2005 and 2030
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Emissions from gas building appliances



**If we do not reduce emissions
from gas building appliances:**

**We will not meet CAP
emissions goals.**



To reduce emissions from gas appliances:

- Insulate better (reduce gas burned for space, water heating)
- Replace gas appliances with electric appliances, powered with renewable energy
- For new **and** existing buildings



CAP 2.0 resiliency goals

*“Avoiding the worst hazards and costs of climate change requires **taking action now** to both reduce emissions and **mitigate the impacts.**”*

--Climate Action Plan 2.0, 2018

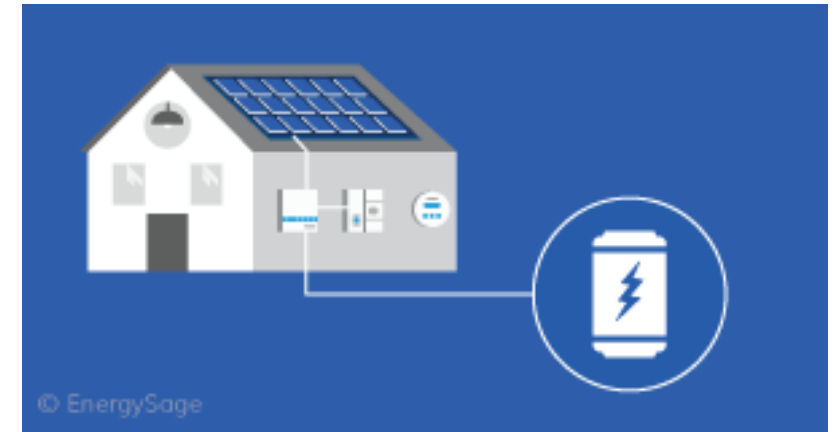


Impact: Power Outages



Electrification, solar panels, and batteries

- Solar panels
 - Decrease electricity bills, creating cost savings
 - Raise home value
 - Renewable energy



- Solar panels, paired with batteries, can power electric appliances during a power outage



Proposed amendments will:

- Switch out gas building appliances for electric alternatives
- Insulate buildings
- Install solar panels

Help meet CAP goals



Chance to lead

Innovative approach to climate action

- Many jurisdictions want to address natural gas use in existing residential buildings
- Few have done so
- Piedmont's proposed amendments will provide leadership to other jurisdictions



Health benefits

Of proposed amendments

“The emissions from natural gas-fired boilers and furnaces include nitrogen oxides (NO_x), carbon monoxide (CO), and carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), volatile organic compounds (VOCs), trace amounts of sulfur dioxide (SO₂), and particulate matter.” (EPA)

Reducing building natural gas use will reduce residents' exposure to dangerous pollutants



Monetary benefits

Of proposed amendments

Requirements may increase upfront project costs. However, they would also decrease energy costs.

➤ **The investment will pay itself back over time.**

Cost-effectiveness projections by EBCE and PG&E consultants:

All-electric new construction, solar panel installation, and insulation measures will **save homeowners money, overall, over a thirty-year period.**



Monetary benefits

Home Energy Scores and Audits

- Give suggestions, specific to a homeowner's own house, to save energy and money through insulation and energy-saving devices.
- If a homeowner incorporates suggestions in future remodels, they will help reduce energy use:
 - Help meet CAP goals
 - **Save money on energy**



Consultation with Title 24 Experts, Residents, Local Contractors



Work with Title 24 experts

While drafting proposed amendments, City consulted with:

- East Bay Community Energy
- EBCE's Reach Code consultants, TRC
- PG&E's Reach Code consultants, Misti Brucerri and Associates

Helped staff ensure proposed Residential Code and Building Energy Efficiency Code amendments would be cost-effective.

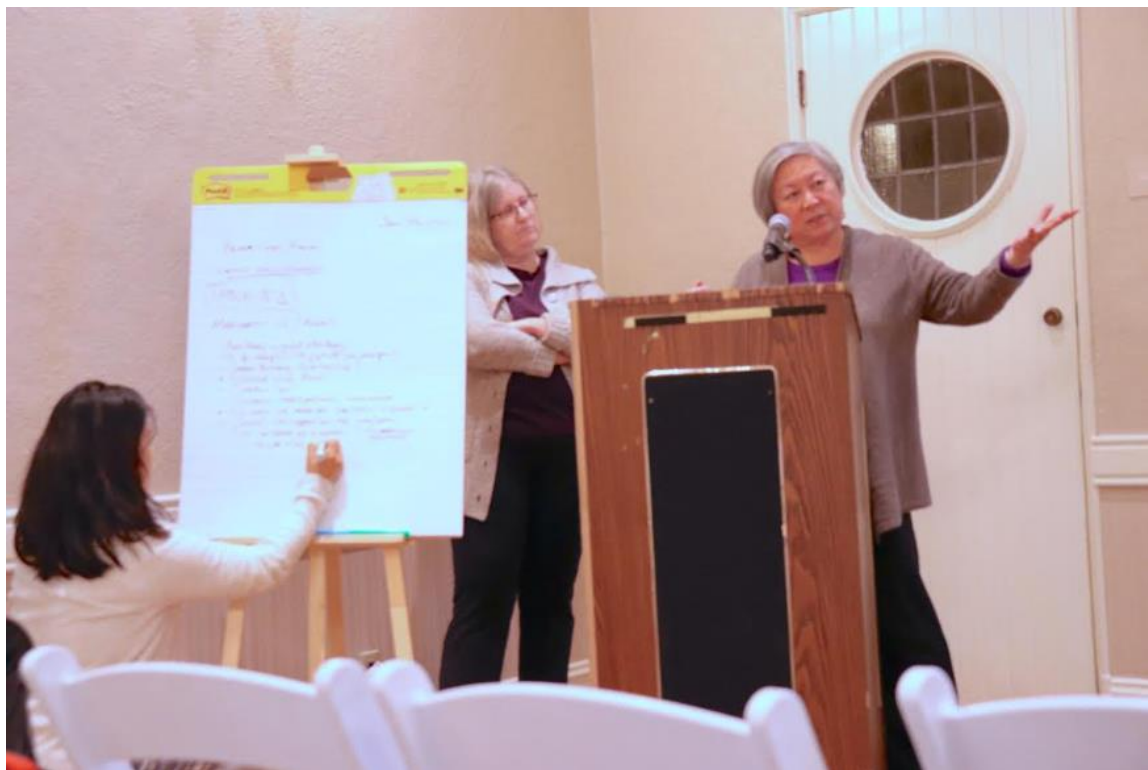


Outreach to residents, contractors

- Town hall-style Reach Code Forum (Jan 29), four follow-up workshops (Feb 12 and 26)
- Residents and contractors heard initial staff ideas for amendments, provided feedback
- Advertised through email, city website, local press
- ~35 attended town hall, 5-20 attended each workshop
- Staff incorporated feedback when drafting final proposals



Reach Code Forum



Public outreach survey (Feb – Mar 2020)

- Google forms survey
- Posted to City website and Nextdoor, emailed to multiple lists
- Available Feb 5 – Mar 20
- 186 respondents
- Staff incorporated feedback in drafting final Reach Codes



Strong community support for proposals

June 2020 Representative survey asked about proposed amendments

- 55-68% of respondents supported each measure
- Only 24-38% opposed
- Overall, strong support for final proposed measures



Next Steps:

- Council may choose to approve a first reading on July 20, and to hold a second reading as soon as August 3, 2020
- Reach Codes would be submitted to CEC, which would:
 - Post the Reach Codes for 60 days
 - Then vote whether to approve the Reach Codes
- City staff would then file all amendments to the California Electrical Code and California Energy Code – Effective Date



Recommendation:

- Conduct a first reading of Ordinance 750 N.S.
- Conduct a first reading of Ordinance 751 N.S.
- Adopt an Energy Assessment Policy for the submissions of either a Home Energy Score or Home Energy audit with an application for a design review permit – with the exception of expedited design permit reviews



Questions?



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Sources

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- King, D., Schrag, D., Dadi, Z., Ye, Q., & Ghosh, A. (2017) Climate change: A risk assessment.

