



Reach Codes for the 2022 Building Code

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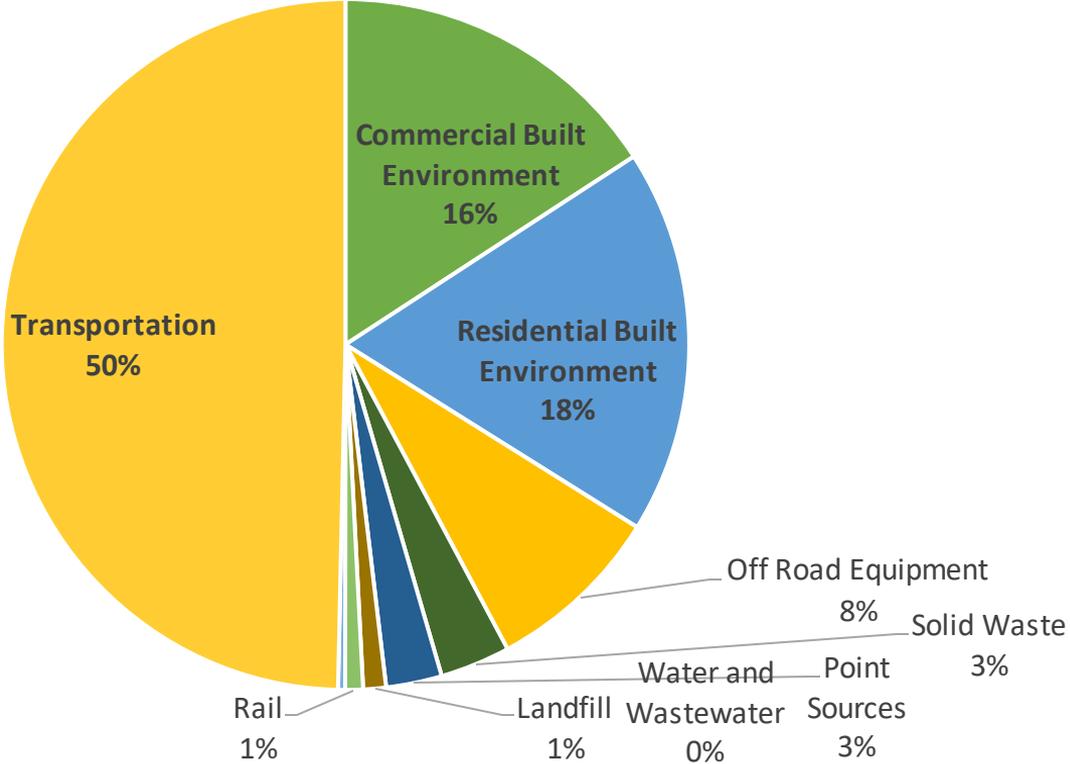
Sustainability Analyst, City Manager's Office



2020 CLIMATE ACTION PLAN



2017 Greenhouse Gas Emissions



Building Electrification



Image credit: <https://www.peninsulacleanenergy.com/all-electric-homes/>

Feedback from April SIC Meeting

New construction

- All-electric required for all building types
- Enhanced EV Readiness for all building types

Existing building renovations

1. Electric-readiness (panel capacity)
2. Electric-readiness (outlet installed)
3. Heat pump AC
4. Heat pump pool heater
5. Heat pump water heater

Electrification Policies

- Reach codes (time of permit)
- Time of sale or property transfer:
 - energy assessment or fossil fuel equipment disclosures
- Building performance standards
- “End of Flow” ordinance
- Carbon neutrality policy
- Financing and rebates for electrification

New Construction: All-Electric Reach Code

- All buildings required to be all-electric
- Exceptions:
 1. Commercial kitchens
 2. Hotel/motel laundry
 3. Infeasibility

Existing Building Renovations: Electrification Reach Code Options

Electric-readiness

| Reach Code | Trigger | Building type | Permits per year | GHG impact | Upfront cost | Utility bill cost |
|--|-------------------------------|---------------------------|------------------|------------------|---------------------|-------------------|
| 1) Panel capacity and breakers reserved | Panel upgrade or replacement | Residential | 192 | No direct impact | \$0 | No impact |
| 2) Outlet installed | Kitchen or laundry renovation | Single Family Residential | 147 | No direct impact | Add \$500 - \$,2000 | No impact |

Air Conditioning

| Reach Code | Trigger | Building type | Permits per year | GHG impact | Upfront cost | Monthly utility bill cost |
|------------------------|--------------------------|----------------------------|------------------|---|--------------|---------------------------|
| 3) Heat pump AC | New AC or replacement AC | Single Family and duplexes | 299 | Space heating = 203 therms 36% avg household gas use | Add \$1,500 | Save \$10 - add \$11 |

Pool and Outdoor Equipment

| Reach Code | Trigger | Building type | Permits per year | GHG impact | Upfront cost | Monthly utility bill cost |
|--|-------------------------------|---------------|------------------|---------------------------|---------------------------|---------------------------|
| 4A) Pool heating | New pool | Residential | 5 | Pool heating = 162 therms | Add \$800-\$1,300 | Save \$8.75 |
| 4B) Prohibition of gas infrastructure in backyard | New pool or gas insert permit | Residential | 10 | Pool heating = 162 therms | Pool: Add \$800 - \$1,300 | Pool: Save \$8.75 |

Water Heater

| Reach Code | Trigger | Building type | Permits per year | GHG impact | Upfront cost | Monthly utility bill cost |
|-----------------------------------|---|---------------|------------------|---|-----------------------|---------------------------|
| 5A) Heat pump water heater | Water heater replacement | Single Family | 134 | Water heating = 308 therms 55% avg household gas use | Add \$1,500 - 4,500 | Savings or no impact |
| 5B) Heat pump water heater | Renovation and water heater replacement | Single Family | <134 | Water heating = 308 therms 55% avg household gas use | Add \$1,500 - \$4,500 | Savings or no impact |

Other Electrification Efforts

- Induction Cooktop Loaner Program
- Outreach events
- PCE All-electric Leadership Award's Program
- The Switch is On



Electrification Policies

- Reach codes (time of permit)
- Time of sale: energy assessment or fossil fuel equipment disclosures
- Commercial building performance standards
- “End of Flow” ordinance
- Carbon neutrality policy
- Financing and rebates for electrification

Recommendation

Provide feedback on potential amendments to the 2022 Building Code for new construction and existing buildings related to building electrification.

Thank You

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New Construction: All-Electric Reach Code

- All new construction required to be all-electric
- Exceptions:
 1. Commercial kitchens
 2. Hotel/motel laundry
 3. Infeasibility

Existing Building Renovations: Reach Code Options

- 1) Electric-readiness (panel capacity) at time of electrical panel upgrade – Residential
- 2) Electric-readiness (outlets installed) at time of kitchen or laundry room renovations – Single Family Residential
- 3) Heat pump air conditioning – Single Family and duplexes
- 4) Pools and outdoor equipment – Residential
 - A. Electric/solar pool heating
 - B. Prohibition of fuel gas infrastructure in the backyard
- 5) Heat pump water heating – Single Family Residential
 - A. HPWH at time of replacement
 - B. HPWH as part of major renovation