

# Building Electrification Study Session

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**City of Half Moon Bay City Council**

# Process Overview

- ✓ Initiated work on Climate Action and Adaptation Plan
  - ✓ Study Session held with Council on February 2
  - ✓ Draft Ordinance published on April 22
  - ✓ Public outreach conducted June – September
  - ✓ Follow-up Study Session September 21
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- Anticipated Ordinance introduction November 2021
  - Anticipated effective date January 1, 2022

# Context

- Climate Action and Adaptation Plan
  - Greenhouse Gas Reduction (Climate Action)
    - City's commitment to State Goals
      - Senate Bill 32 (SB 32) – Reduce GHG emissions 40% below 1990 levels by 2030
      - Executive Order (EO) B-55-18 – Achieve carbon neutrality by 2045
  - Adapt to Climate Change Impacts (Climate Adaptation)
    - Sea Level Rise/Coastal Erosion
    - Wildfire
    - Flooding

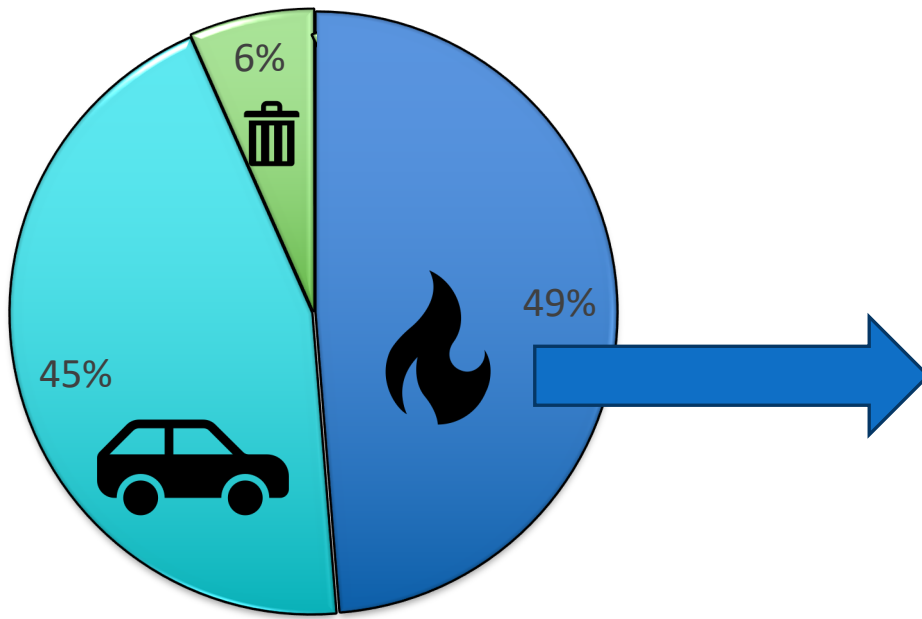
# What is Building Electrification?

Building Electrification describes the move away from Fuel Gas (natural gas, propane, etc) powered appliances towards highly-efficient electric alternatives.

## Benefits:

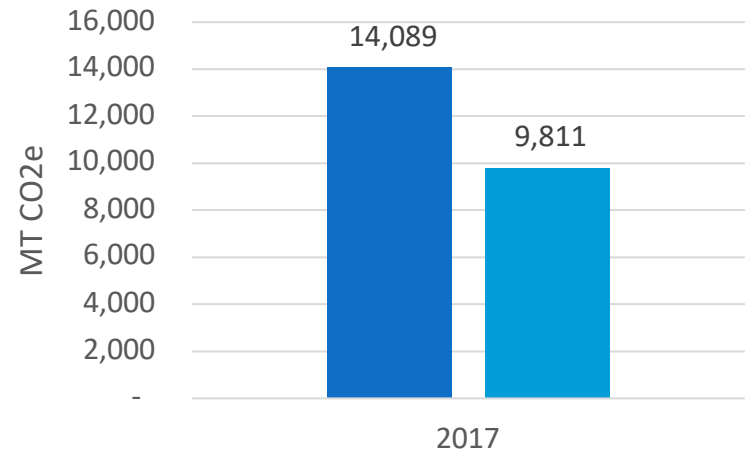
- Assist with Climate Goals
  - 40% GHG reduction by 2030
  - Carbon neutrality by 2045
- Public Health and Safety
  - Indoor air quality
  - Increased asthma rates
  - Earthquake/fire risk

# Half Moon Bay GHG Emissions



- Energy
- Transportation
- Solid Waste
- Wastewater
- Water

## Natural Gas Emissions (2017)



- Commercial
- Residential

Half Moon Bay GHG Emissions (2017): 61,522 MT CO2e

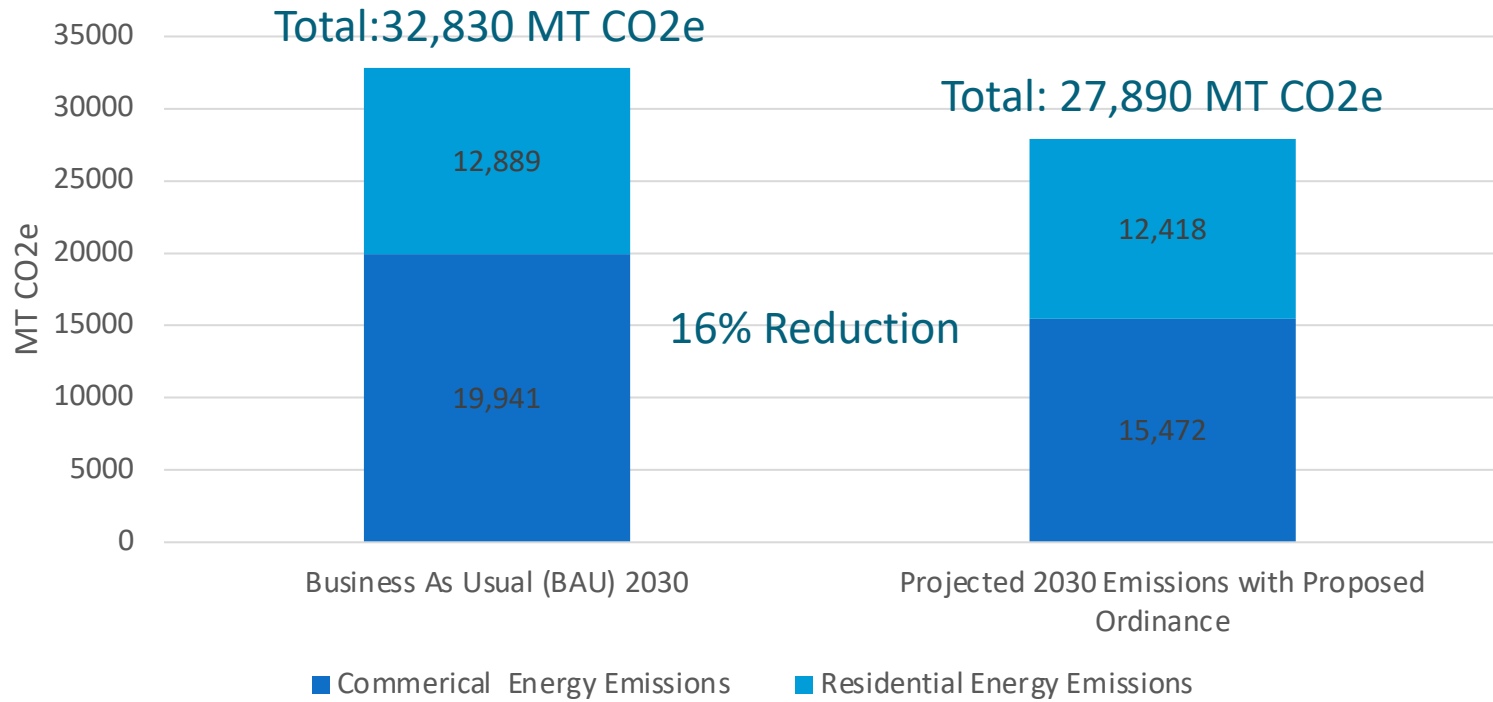
# Draft Ordinance Provisions

1. All – electric new construction
2. Conversion to electric appliances at the time of replacement
3. All gas lines must be capped/decommissioned by January 1, 2045
4. Expanded electric vehicle/solar requirements

## Exceptions:

- Small, portable propane tanks
  - Grills, firepits, patio heaters, etc
- Emergency generators (propane, natural gas, petroleum)
- Technical or physical infeasibility
  - Extremely limited instances

# 2030 Energy GHG Emission Projections



Note: 2017 GHG inventory or projections do NOT account for methane leakage

# Community Feedback



# Public Outreach

- One-on-one meetings
- Mailed survey cards
- Online survey (English and Spanish)
- Presentations to special interest groups
- In-person/Zoom workshops
- In-person tabling
- Social media posts
- City listservs

# Community Feedback

- Supportive of new construction and expanded EV charging and solar panel/battery systems
- Reliability of Electric Grid
- Increase of Unpermitted Work
- More Time to Plan (Especially for Commercial)
- Cost of Implementation
- Specific Exemption Requests

# Power Reliability

- PSPS/Power Outages/Rotating Blackouts
  - PSPS expected to be less frequent, shorter durations
  - Generators/back up batteries still allowed
- Can the grid handle the added load?
  - Load increase is not significant
  - PCE/PG&E are planning for building electrification, eager to partner with the City

# Power Reliability (Policy Consideration)

- No policy changes recommended

# Unpermitted Work

- Will the Ordinance encourage unpermitted work?
- Will the Ordinance be effective?
  - Permits required for water heater/HVAC only
  - ~10% of current residential replacements obtain required permits
    - Commercial compliance is estimated at ~80%

# Unpermitted Work (Policy Consideration)

1. Increase public/contractor education
2. Consider provisions to ensure compliance with electrification code
  - a. Require permits for new/replacement appliances
    - a. Stoves
    - b. Dryers
  - b. Consider requiring certification at the time of sale/change of occupancy of a dwelling unit or other similar procedures
    - a. Staff intensive
    - b. Ongoing cost of program administration

# Commercial Retrofit Delay

- High expense and more limited options for commercial
- Requests to delay retrofit by 5-7 years

# Commercial Retrofit Delay (Policy Consideration)

Delay retrofit requirements for non-residential buildings after 2025\*

- a. All
- b. No exception of small water heaters/HVAC with air conditioning

\*Delay beyond 2025 will impact ability to meet 2030 GHG goal



# Community Requested Exemptions

- Cooking/Fireplaces (Residential)
- Cooking (Commercial Kitchens)
  - All
  - Those with business need (pizza/bakery oven)
- Greenhouses
- Expanded exemptions for exceptional circumstances

# Cost of Implementation

- Added expense for all gas users (businesses, homeowners, renters)
  - Costs may be recovered over time
- Cost Estimate (Residential)
  - Cost vary significantly depending on circumstance
    - Total (no panel upgrade): \$7,200 - \$21,200
- Incentives, rebates and tax credits available now
- Financing Opportunities

# Residential Cost Estimates

Item	Difference in Cost
Range	\$1,000 - \$5,500
Clothes Dryer	\$200 - \$2,500
Space Heating (electric heat pump)	\$4,000 - \$10,000
Water heater (electric heat pump)	\$2,000 - \$3,200
Electric Panel Upgrade (if necessary)	\$4,000 - \$6,000

Total (no panel upgrade): \$7,200 - \$21,200

Total (with panel upgrade): \$11,200 - \$27,200

# Incentives and Rebates

Item	Organization	Amount
Heat Pump Water Heater	BayREN	Up to \$1,000
Heat Pump Water Heater	PCE	Up to \$1,000
Heat Pump Water Heater	PG&E	\$300
Heat Pump Heating/Cooling	BayREN	Up to \$1,000
Induction Cooktop	BayREN	\$300
Heat Pump Dryer	BayREN	\$300

# Low/No Cost Financing

- Go Green Financing
  - Low interest rate loans for energy efficiency and electrification projects
- PG&E's Energy Efficiency Financing (Commercial Only)
  - Up to \$4 Million for electric efficient upgrades associated with bill savings
- PCE On-Bill Financing (Residential Only, January 2022)
  - \$10,000 loan at 0% interest
  - Very little underwriting

# Staff Request

- Conduct community workshop on draft Building Electrification Ordinance
- Provide staff policy direction to prepare Building Electrification Ordinance for formal introduction by the City Council (anticipated November 2021)

Questions?

# Policy and Exemption Considerations (Existing Residential)

1. No changes
2. Delay retrofit requirement until 2030\*
  - a. All
  - b. All except water heaters/HVAC
  - c. Only delay ovens/fireplaces
3. Consider provisions to ensure compliance with electrification code
  - a. Require permits for new/replacement appliances
  - b. Consider requiring certification at the time of sale/change of occupancy of a dwelling unit
4. Consider expanded exemptions for exceptional circumstances

\*Year can be substituted with any date between effective date and January 1, 2045



# Policy and Exemption Considerations (Existing Commercial)

1. No changes
2. Delay retrofit requirements for non-residential buildings after 2025
  - a. All
  - b. No exception of small water heaters/HVAC with air conditioning
3. Exemption for commercial kitchens
  - a. All
  - b. Only for those demonstrating specific business need
4. Greenhouse Exemption
5. Consider expanded exemptions for exceptional circumstances

Questions?