All-Electric New Construction Ordinance
San Francisco Commission on the Environment - July 28, 2020
Today’s Objectives

1. Health, Safety, Resilience, and Climate Context
2. Stakeholder Process and Outreach
3. Review the Ordinance
4. Impacts (Cost and Housing Pipeline)
5. Implementation
6. Equity Scan
Health, Safety, Resilience, and Climate
Natural gas impacts . . .

Health

Safety

Resilience

Equity
Sources of San Francisco GHG Emissions (2018)

- Transportation: 45%
- Buildings: 44%
- Natural Gas: 37%
- Electricity: 7%
- Landfilled Organics: 6%
- Municipal: 3%
- Agriculture & Wastewater: 2%
Stakeholder Process and Outreach
Zero Emission Building Taskforce

Working Groups

- New Construction
- Existing Commercial
- Existing Municipal
- Existing Residential

Steering Committee

Deliverables

- New Construction Ordinance
- Task Force Report
- Climate Action Plan
- Zero Emission Buildings Roadmap
Overview of Outreach Efforts

15 Convenings
750+ People

“Building the All Electric City” Workshop 1/8 (72)
New Construction Workgroup Meeting 2/19 (17)
Electrification Exp 2/25 (450)
Building Owners & Managers Association 2/20 (19)
New Construction Workgroup Meeting 3/13
“CANCELED – RESCHEDULED APRIL 3rd
Building Owners & Managers Association 3/20 (9)
Executive Steering Committee Review 5/12 (11)
Executive Steering Committee 5/18 (28)
New Construction Workgroup Meeting 4/3 (19)
Affordable Housing Meeting 4/23 (41)
Exception Process Review 5/12 (11)
Executive Steering Committee 5/18 (28)
Launch Zero Emission Building Taskforce
New Construction Workgroup Meeting 1/24 (19)
BVHP Taskforce 2/10 (23)
Executive Steering Committee 2/24 (21)
Climate Emergency Coalition Ordinance Review (9)
Infill Sidewalk Electric Vaults 5/29 (22)
June 2020
https://sfenvironment.org/zebtaskforce
## New Construction Work Group Feedback

<table>
<thead>
<tr>
<th>Task Force Input</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Act now - delay will not make transition easier.</td>
<td>Zero emission technologies are available and fossil fuel systems in new construction will become liabilities for owners.</td>
</tr>
<tr>
<td>Health and resilience are paramount to equity.</td>
<td>Health and resilience concerns support eliminating fossil fuels, especially in impacted communities</td>
</tr>
<tr>
<td>Facilitate smart decisions.</td>
<td>Projects in development will benefit from early warning; a clear, unambiguous message from the City will help projects in development.</td>
</tr>
<tr>
<td>Workforce development and stakeholder education are essential.</td>
<td>Zero emissions is a significant shift in design and construction practice.</td>
</tr>
</tbody>
</table>
Utilities, State & Cities Around CA Support All-Electric

**Utilities**
PG&E supports all electric new construction

**Cities**
27+ cities around California have passed local ordinances

**State**
CPUC and CEC planning for a fossil fuel free future

*BRIEF*
'A critical milestone': PG&E first gas-electric IOU to publicly support California's all-electric construction
All Electric New Construction Ordinance
Key Components of the Ordinance

01

For projects that apply for building permits after January 1, 2021 – heating, cooling, water heating, cooking and clothes drying must be all electric.

02

No permits will be issued to convert all-electric buildings into mixed-fuel buildings.
Key Components of the Ordinance

For projects that include a commercial food service establishment, mixed-fuel building permits may continue to be accepted until January 1, 2022 provided gas piping is exclusively for cooking equipment.

Mixed-fuel permits may be issued only upon finding that All-Electric construction is physically or technically infeasible for a specific area or system.

Mixed-fuel permits must be as “Electric Ready” as feasibly possible while complying with all provisions of building and electrical codes.
Impacts
## Cost and Benefits – Studies

<table>
<thead>
<tr>
<th></th>
<th>Change in Construction Cost ($/Sq Ft)</th>
<th>Lifetime Net Present Value ($/Sq Ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Single Family</strong></td>
<td>-$5.01</td>
<td>$3.62</td>
</tr>
<tr>
<td><strong>Multifamily 3 floors or less</strong></td>
<td>-$1.18</td>
<td>$4.64</td>
</tr>
<tr>
<td><strong>Multifamily 4-8 floors</strong></td>
<td>-$0.13</td>
<td>$0.68</td>
</tr>
<tr>
<td><strong>Retail</strong></td>
<td>-$0.98</td>
<td>$6.37</td>
</tr>
<tr>
<td><strong>Office</strong></td>
<td>-$1.54</td>
<td>$1.09</td>
</tr>
</tbody>
</table>

**Sources:**
- Mid-Rise Residential: Frontier Energy (2020)
- Non-Residential: TRC (2019)
- Supplemental Analysis by Dept of Environment to account for San Francisco Better Roofs requirements
Costs and Benefits – Multi-Family Housing Example

MACEO MAY APARTMENTS

KEY DRIVERS:

Reductions

- Elimination of Solar Hot Water - $215,000 Saved
- Elimination of Natural Gas - $168,000 Saved

Additions

- Adding Electric Domestic Hot Water - $105,000 increase

NET IMPACT

$242,000 LOWER COST
The future is already here – SF all electric buildings

2060 Folsom - Casa Adelante - Affordable  
CCDC, MEDA, Mithun

Southeast Community Center - Municipal  
SFPUC, SFPW

SFSU Student Housing Block 6  
SFSU, Gould Evans, Point Energy Innovations, BuildGroup

685 Florida St – Infill  
Off The Grid Design, RG Architecture

Claire Lilienthal Elementary School - SFUSD  
SFUSD, Lionakis

270 Brannan - Office  
Pfau Long Architecture
## Anticipated Applicability to Housing Pipeline

<table>
<thead>
<tr>
<th>Ordinance would apply</th>
<th>66%</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Application Filed with Planning Department</td>
<td></td>
</tr>
<tr>
<td>- Application Approved by Planning Department</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ordinance would not apply</th>
<th>34%</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Building Permit Application Filed with Department of Building Inspection</td>
<td></td>
</tr>
<tr>
<td>- Lapsed Building Permit Application is &quot;re-instmt&quot; by Department of Building Inspection</td>
<td></td>
</tr>
<tr>
<td>- Building Permit Application Approved by Department of Building Inspection</td>
<td></td>
</tr>
<tr>
<td>- Approved Building Permit Application Issued by Department of Building Inspection</td>
<td></td>
</tr>
<tr>
<td>- Project is Under Construction</td>
<td></td>
</tr>
</tbody>
</table>
Implementation
Overview of the Process

Building Permit Application After Jan 1, 2021

All-Electric

No Special Documentation

Proceed through application process

Third Party Review
- Electrical
- Mechanical
- Title 24 compliance
- Electric ready
- Health and safety

Plan Review
- Specific physical or technical constraint
- No feasible alternative
- Conditions of approval

*New AB-112*

Approved conditions incorporated into plans

Mix-Fuel

Building Permit
AB 112 - Guidance for Infeasibility

Code Conflict
Utility Infrastructure
Energy Code
Exceptional or Extraordinary Circumstance
Equity Scan
**Equity Scan Assessment and Recommendations**

<table>
<thead>
<tr>
<th>Equity Concern</th>
<th>Equity Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Energy burdens for tenants</td>
<td>Work with utility regulators on equitable rate structures. Develop materials for tenants to reduce energy costs. Types of assistance expanded for lower income tenants.</td>
</tr>
<tr>
<td>2. Impacts to affordable housing</td>
<td>Outreach &amp; technical assistance to affordable housing developers who are inexperienced with electrification. Feedback mechanism needed to understand impacts of the all-electric ordinance.</td>
</tr>
<tr>
<td>3. Lack of workforce considerations</td>
<td>Assistance to Black, Indigenous, and People of Color (BIPOC)-owned businesses &amp; professional organizations. Workforce training targeting BIPOC is needed. Incentives to hire &amp; to direct work to BIPOC-owned businesses.</td>
</tr>
<tr>
<td>4. Impacts to Restaurants</td>
<td>The longer implementation period the ordinance proposes is an opportunity to better understand burdens and provide outreach and education.</td>
</tr>
<tr>
<td>5. Resources needed to advance racial equity</td>
<td>Create a funding stream using the climate justice principle where the largest polluter pays for the transition, such as a fee for large existing commercial buildings.</td>
</tr>
</tbody>
</table>
Discussion
Thank you

Cyndy Comerford, Program Manager
cyndy.comerford@sfgov.org

Barry Hooper, Senior Green Building Specialist
barry.hooper@sfgov.org

Jacob Bintliff, Supervisor Mandelman’s Office
james.zhan@sfgov.org