Bold Climate Goals, Aggressive GHG Reduction Targets

2017
25%

2025
40%

2050
100%
Reduce as much as possible
Sequester the rest
San Francisco’s Emissions Sources Today

- Transportation: 46%
- Buildings: 44%
- Private Sector Natural Gas: 35%
- Municipal Natural Gas: 3%
- Private Sector Electricity: 8%
- Municipal Electricity: 0%
- Agriculture & Wastewater: 2%
- Landfilled Organics: 6%
- Other: <1%
• Effective 01/01/2020

• San Francisco amends state codes concurrently

• Administratively valuable to implement other building ordinances on the same schedule
## Policy Recommendation: All-Electric Preferred

### Requirements for new construction and major renovations

<table>
<thead>
<tr>
<th>Env Code Ch 7</th>
<th>Natural Gas &amp; Electricity: “Mixed-Fuel”</th>
<th>All-Electric:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal</td>
<td>No Natural Gas Allowed Waiver process available</td>
<td>Meet Code</td>
</tr>
<tr>
<td>Commercial</td>
<td>10% more efficient than Code</td>
<td></td>
</tr>
<tr>
<td>Multifamily ≥4 floors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-Rise Residential</td>
<td>~25% more efficient than Code</td>
<td></td>
</tr>
</tbody>
</table>
MUNICIPAL GREEN BUILDING WAIVER REQUEST

For projects applying for building permits on or after January 1, 2017, subject to LEED v4 requirements in San Francisco Environment Code Chapter 7 as amended effective April 16, 2017

<table>
<thead>
<tr>
<th>Project Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Name</td>
</tr>
<tr>
<td>Project Street Address</td>
</tr>
<tr>
<td>Project Number</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Design Phase % Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>City Project Manager</td>
</tr>
<tr>
<td>Phone</td>
</tr>
</tbody>
</table>

SEC. 713. WAIVERS

(a) Waivers from the requirements of this Chapter are available under the following circumstances:

(b) Cost Prohibitive. A City department may request a waiver from the Director on a form provided by the requesting department. The Director may grant a waiver if:

1. Demonstrates which specific requirements are cost prohibitive.
2. If city is able for No. 713.5, development of

3. Alternate Compliance Plan on the form.
“Major Renovation” means any municipal construction project or renovation to an existing structure other than repair or addition. A Major Renovation may include, but is not limited to, a change in occupancy or use, or structural repair to an existing building or facility; or remodeling, rehabilitation, reconstruction, historic restoration, or changes to the plan configuration of wall and full-height partitions, where the scope of work is sufficient to support LEED certification and extensive enough such that normal building operations cannot be performed while the work is in progress, and/or a new certificate of occupancy, or similar official indication that it is fit and ready for use, is required. Major Renovation does not encompass normal maintenance, reroofing, floor covering, painting, wallpapering, or changes to mechanical and electrical systems.

- Environment Code, Chapter 7
Example of Major Renovation: The Exploratorium

Before

After

Images: After - Bruce Damonte
Example of Major Renovation: Garfield Pool

Images: Proposed - Paulett Taggart Architects, Existing - Google
## Cost Effectiveness

<table>
<thead>
<tr>
<th>Building Size</th>
<th>Large Office with EV charging stations</th>
<th>Recreation Center with Pool</th>
<th>Outpatient Healthcare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Size</td>
<td>498,600 sq ft 12+ floors</td>
<td>20,100 sq ft</td>
<td>26,800 sq ft space for procedures, MRI, offices</td>
</tr>
<tr>
<td>Construction Cost</td>
<td>-/+ $1 per sq ft to project (0.1%)</td>
<td>~$274,230,000 total assumes $550/sq ft</td>
<td>~$10,050,000 total assumes $500/sq ft</td>
</tr>
<tr>
<td>Payback</td>
<td>5.3 years</td>
<td>10 months</td>
<td>7 months</td>
</tr>
</tbody>
</table>

Calculations based on SFPUC’s General Use Municipal Electricity Service Rate

ARUP (2019) San Francisco Municipal Facility Case Studies
SF All-Electric Examples: City Family

- Southeast Community Center
  SFPUC, SFPW

- Golden Gate Park Golf Course Clubhouse
  RPD, SFPW

- Claire Lilienthal Elementary School
  SFUSD, Lionakis

- Alameda Creek Watershed Center
  SFPUC, SFPW

- Mission Branch Library
  SFPL, SFPW

- SFSU Student Housing Blok 6
  SFSU, Gould Evans, Point Energy Innovations, BuildGroup
SF All-Electric Examples: Affordable Housing

Casa Adelante, 681 Florida: TNDC & MEDA, Mithun

Hunters Point Shipyard Block 52: McCormack Baron Salazar, Mithun

Balboa Upper Yard: Mission Housing Development, Related, Mithun

Casa Adelante, 2060 Folsom: TNDC/CCDC, Mithun, YA Studio, AEA

Hunters Point Shipyard Block 54: McCormack Baron Salazar, Mithun

Maceo May: CCDC, Swords to Plowshares, Mithun, AEA
Why CCDC is Building All-Electric:

<table>
<thead>
<tr>
<th>Design Objective</th>
<th>How All-Electric Supports the Design Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Efficiency</td>
<td>Build more efficient than code</td>
</tr>
<tr>
<td>Low Capital Cost</td>
<td>Design is cost neutral</td>
</tr>
<tr>
<td>Low Operating Cost</td>
<td>Built right from day one; future-proof design</td>
</tr>
<tr>
<td>Ease of Maintenance</td>
<td>Simple systems</td>
</tr>
<tr>
<td>Great resident/user experience</td>
<td>Better indoor air quality, comfortable</td>
</tr>
</tbody>
</table>

Image: Maceo May Veterans Apartments, a Project of CCDC, Swords to Plowshares, Mithun, and Association for Energy Affordability
Twelve Months of Outreach and Education

SF Commitment to Net Zero Emissions by 2050

MGBTF presentation: “Methane Math”

MGBTF presentations:
Decarbonization 101, SFUSD Carbon Reduction Plan + Program Requirements

Net Zero Carbon Buildings Declaration made at GCAS

Carbon Smart Building Day

MGBTF presentation: Reprise of Carbon Smart Building Day

MGBTF presentations:

DBI CAC Green Building Subcommittee meeting

Sean Armstrong presentation: “Decarbonizing Existing Affordable Housing”

Climate Tech Network meeting: “Building Electrification”

MGBTF Electrification Policy Poll

Dep’t Discussions about Net Zero Carbon Buildings Declaration


Net Zero Carbon Buildings Declaration presented at DWG

Municipal Climate & Sustainability meeting

DBI CAC GB Subcommittee meeting

MGBTF presentation: “Policy Proposal to Accelerate Decarbonization in New Construction and Major Renovations”

MGBTF = Municipal Green Building Task Force
Next Steps

• Ongoing: Refinements to draft policy language based on input from City departments’ staff and leadership

• August: To DBI Code Advisory Committee

• September: To Board of Supervisors Land Use Committee (along with entire San Francisco Building Code)

• October: To full Board of Supervisors