NOW THE HARD PART

Implementing a Districtwide ZNE Plan
AT A GLANCE

Dense/Urbam

7th Largest

55K Students

Diverse

Low-Income

Voters

Private

SFUSD
OUR SCHOOLS
POTENTIAL RISKS

Utility Costs By Type
FY 14-16: Average $5.5M

- Electricity: 35%
- Natural Gas: 34%
- Water: 31%

Electricity Rates
$/kWh

Natural Gas Rates
$/therm

Water Rates
$/CCF
OPPORTUNITIES

Bond Modernization

Facilities Projects/Deferred Maintenance

Sustainable Operations & Shared Savings

Monitoring (1 yr)
PROP 39 – Round 1

**VISITACION VALLEY MS:**
Separation of DHW, occupancy sensors

**EL DORADO ES:**
New boilers, heating system, refrigeration

**JOHN YEHALL CHIN ES:**
Condensing boilers, fan coils, water heater

**SAVINGS:** 23,267 kWh, 2,186 therms, and $3,740/yr

Source: UC Berkeley
BOLD LEADERSHIP
California’s ZNE Building Goals

- All new residential construction and all new commercial construction in California will be zero net energy by 2020 and 2030, respectively
- **50% of existing commercial buildings will be retrofit to ZNE by 2030**
- All new state buildings and major renovations shall be ZNE (2025)
  - 50% of existing state-owned building area by 2025 shall be ZNE
- IOUs shall launch and ramp a ZNE K-12 Schools and Community College Pilot Program in 2015-18
THERE’S HOPE

Pre-Modernization EUI  Post-Modernization EUI

Francisco MS
Monroe ES
Starr King ES
Roosevelt MS
Lowell HS
Jose Ortega ES
Cesar Chavez ES
Gordon J Lau ES
Sunnyside ES
George Peabody ES
Miraloma ES
Hilltop HS
San Miguel EES/Leadership HS
Creative Arts ES/Gateway MS

EUI (kBtu/Sqft)
## Table 29. Energy Intensity Values for Zero Energy Schools

<table>
<thead>
<tr>
<th>Climate Zone</th>
<th>Representative City</th>
<th>Primary School</th>
<th>Secondary School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Site Energy (kBtu/ft²·yr)</td>
<td>Source Energy (kBtu/ft²·yr)</td>
</tr>
<tr>
<td>1A</td>
<td>Miami, FL</td>
<td>25.9</td>
<td>76.4</td>
</tr>
<tr>
<td>2A</td>
<td>Houston, TX</td>
<td>24.3</td>
<td>71.1</td>
</tr>
<tr>
<td>2B</td>
<td>Phoenix, AZ</td>
<td>24.7</td>
<td>72.5</td>
</tr>
<tr>
<td>3A</td>
<td>Memphis, TN</td>
<td>23.8</td>
<td>69.0</td>
</tr>
<tr>
<td>3B</td>
<td>El Paso, TX</td>
<td>23.4</td>
<td>67.8</td>
</tr>
<tr>
<td>3C</td>
<td>San Francisco, CA</td>
<td>21.6</td>
<td>61.9</td>
</tr>
<tr>
<td>4A</td>
<td>Baltimore, MD</td>
<td>22.5</td>
<td>67.6</td>
</tr>
<tr>
<td>4B</td>
<td>Albuquerque, NM</td>
<td>21.1</td>
<td>66.6</td>
</tr>
<tr>
<td>4C</td>
<td>Salem, OR</td>
<td>21.4</td>
<td>64.2</td>
</tr>
<tr>
<td>5A</td>
<td>Chicago, IL</td>
<td>24.3</td>
<td>69.9</td>
</tr>
<tr>
<td>5B</td>
<td>Boise, ID</td>
<td>23.2</td>
<td>66.7</td>
</tr>
<tr>
<td>6A</td>
<td>Burlington, VT</td>
<td>24.5</td>
<td>70.1</td>
</tr>
<tr>
<td>6B</td>
<td>Helena, MT</td>
<td>23.5</td>
<td>66.9</td>
</tr>
<tr>
<td>7</td>
<td>Duluth, MN</td>
<td>25.9</td>
<td>74.1</td>
</tr>
<tr>
<td>8</td>
<td>Fairbanks, AL</td>
<td>28.7</td>
<td>82.5</td>
</tr>
</tbody>
</table>

*Source: DOE*
Figure 5.1: EUI and Total Energy Cost for Moscone ES
THE POLICY

San Francisco Schools Aim for a Zero Carbon Footprint by 2040

Carbon Reduction Plan
SAVINGS: 474,273 kWh, 25,989 therms, and $58,421/yr

Source: Alta Planning