

# Background: Built Environment Strategy Recommendations

This set of materials includes a preliminary analysis of the Built Environment Technical Advisory Committee’s strategy recommendations and additional recommendations and observations from the TAC for each strategy. The initial ratings include high-level ratings for each strategy based on GHG emissions reduction potential, estimated municipal and community costs, and projected net savings. For each strategy, the TAC is also recommending implementation tactics and additional information on desired results, potential hurdles, cost-effectiveness, and financing options.

While the Commission will only be voting on the three top-level strategies, the Recommendations Report will expand upon each strategy to support and accelerate implementation.

## Initial Ratings of Built Environment Strategy Recommendations

DRAFT STRATEGY	EMISSIONS REDUCTION POTENTIAL	MUNICIPAL COSTS	COMMUNITY COSTS	NET SAVINGS
<i>Urban Growth Boundaries</i> <b>Establish Urban Growth Boundaries to allocate all new growth regionally to existing developed areas by 2025.</b>	HIGH	\$\$	\$\$\$	\$\$ - \$\$\$
<i>Electrification: New Construction</i> <b>Mandate all-electric construction to eliminate fossil fuel use in new buildings by 2023.</b>	MED	\$	\$ - \$\$	\$\$
<i>Electrification: Existing Buildings</i> <b>Transition 25% of existing residential and small commercial buildings to all-electric by 2030.</b>	HIGH	\$\$	\$\$\$	\$\$\$

STRATEGY RATINGS KEY			
<b>EMISSIONS REDUCTION POTENTIAL</b> <i>per year by 2045</i>	<b>HIGH</b> > 1 million tonnes	<b>MED</b> 100K - 1 million tonnes	<b>LOW</b> < 100k tonnes
<b>MUNICIPAL COSTS</b> <i>per year until fully implemented</i>	<b>\$</b> < \$1 million	<b>\$\$</b> \$1 million - \$5 million	<b>\$\$\$</b> > \$5 million
<b>COMMUNITY COSTS</b> <i>per year until fully implemented</i>	<b>\$</b> < \$10 million	<b>\$\$</b> \$10 million - \$50 million	<b>\$\$\$</b> > \$50 million
<b>NET SAVINGS</b> <i>per year by 2045</i>	<b>\$\$\$</b> > \$50 million	<b>\$\$</b> \$10 million - \$50 million	<b>\$</b> < \$10 million



## Establish Urban Growth Boundaries to allocate all new growth regionally to existing developed areas by 2025.

### Implementation Tactics

1. Introduce and advocate for state, regional, and local regulations that clearly limit new development to existing developed areas in the region.
2. Enable 35,000 new high density, affordable, and accessible residences through the continuation of the City's expansion of by-right zoning, financial incentives, and modifying single family dwelling designations, coupled with anti-displacement policies.
3. Establish a locational efficiency metric by 2020 to prioritize low emissions development, which could be a combination of walk score, Vehicles Miles Traveled (VMT), carbon dioxide equivalent (CO<sub>2</sub>e) and/or building siting and efficiency.

### Desired Results & Benefits

- Encourage dense urban development to facilitate GHG emissions reductions in the transportation sector, which accounts for over half of both cities' emissions, by increasing low-carbon transportation choices and reducing the need to drive.
- Accelerate infill development to increase affordable housing stock while avoiding displacement.
- Preserve prime farmland, sensitive natural habitats, groundwater recharge zones, and land that provides carbon sequestration and other ecosystem benefits.
- Improve public health by increasing active transportation appeal and utility.
- Improve equity by making it easier for community members to live without a car.

### Cost-Effectiveness

- Savings of up to 38% on upfront costs for the construction of new roads, sewers, water lines and other infrastructure, and 10% on costs for the provision of services (e.g. police, ambulance, and fire service).

### Financing Options

- SACOG Green Means Go Pilot Program: \$400 million for infill development and mobility solutions (request to legislature)
- Sacramento Measure U Funds: approximately \$47 million per year in additional revenue for the City
- VMT-based Impact Fees: development impact fee to support dense, mixed-use, infill development
- SGC Affordable Housing & Sustainable Communities Program: \$395 million for affordable housing and transportation infrastructure
- SGC Sustainable Agriculture Land Conservation Program: \$47 million for agricultural conservation easements and plans to protect agricultural lands at risk of land conversion
- Opportunity Zones: tax incentives to spur long-term investments in low-income communities
- HUD HOME Investment Partnerships, HUD Trust Fund, Federal Home Loan Banks Affordable Housing Program: for purchase, construction, or rehabilitation of affordable housing units

### Overcoming Potential Hurdles

- Unintended harm to frontline communities: Adopt anti-displacement policies, establish a formal and transparent process for enforcing anti-displacement, affordability, and equity objectives.
- Opposition from developers: Demonstrate cost savings and benefits and identify opportunities to reduce the cost of labor and materials to accelerate infill development.
- Resistance from local jurisdictions and regional agencies: Engage with key decision-makers and stakeholders early on to understand their concerns and conduct further studies and provide educational opportunities to demonstrate the benefits of Urban Growth Boundaries. Conduct broad public outreach and engagement to obtain community buy-in and to build political support.



## Strategy Recommendation #2 | Electrification: New Construction

### **Mandate all-electric construction to eliminate fossil fuel use in new buildings by 2023.**

#### **Implementation Tactics**

1. Adopt and implement an ordinance that would result in 100% electrification of all new construction by 2023.
2. Adopt a measure to reduce the embodied carbon emissions from building materials and construction of new buildings by 40% (compared to 2018).
3. Identify large-scale development projects in progress to encourage electrification.

#### **Desired Results & Benefits**

- Significantly reduce GHG emissions over time.
- Eliminate fossil fuel use in new buildings and significantly improve public safety and indoor air quality.
- Future proof buildings to avoid costs related to additional retrofits.
- Less costly for developers by avoiding costs for natural gas infrastructure and cost-competitive for ratepayers.

#### **Cost-Effectiveness**

- All-electric new construction homes are likely to have lower capital cost than their mixed-fuel counterparts. In addition to the lower capital cost of HVAC heat pumps compared to gas furnaces plus AC systems, all-electric new construction homes avoid gas infrastructure and interconnection costs. An all-electric new construction home was estimated to have a capital cost advantage ranging from \$3,000 to over \$10,000.

#### **Financing Options**

- Incentives: SMUD provides incentives for builders including up to \$5,000 for single-family homes and \$1,750 for multifamily homes. PG&E is exploring potential incentives for all-electric new construction.
- IBank Infrastructure State Revolving Fund: loans of up to \$25 million for infrastructure projects including roadways, public transit, educational facilities, economic expansion projects, and more
- U.S. DOE Title XVII Innovation Clean Energy Project Loan Program: financing for the first deployments of new technology to bridge the gap for commercial lenders
- Opportunity Zones: tax incentives to spur long-term investments in low-income communities
- Commercial Property Assessed Clean Energy (C-PACE): financing for energy efficiency and clean energy projects via property assessments, which can also be applied finance new construction projects

#### **Overcoming Potential Hurdles**

- Developer concerns regarding cost-effectiveness: Continue to engage with developers and builders to demonstrate cost-effective approaches to electrification.
- Negative consumer perceptions: Conduct a robust education campaign that highlights the benefits of electric appliances, increases awareness of the health risks of indoor combustion, demonstrates new and improved technology, and increases awareness of incentives and rebates available.
- Affordability of new homes with advanced amenities: Review existing inclusionary housing policies and programs to identify opportunities to achieve more equitable outcomes and create communities that are racially and economically integrated, inclusive, and diverse.



## Transition 25% of existing residential buildings and small commercial buildings to all electric by 2030.

### Implementation Tactics

1. Incentivize property owners to install electric appliances when replacing natural gas appliances, prioritizing education and voluntary action prior to establishing a mandate.
2. Establish a comprehensive electrification and energy efficiency program to reduce the energy burden of low-income residences while expediting the decommissioning of aging natural gas infrastructure in frontline communities.
3. Establish building performance standards and GHG emission limits by 2021 with 2026 as the first year of compliance supported by a benchmarking and audit ordinance.

### Desired Results & Benefits

- Reduce fossil fuel use in buildings and significantly improve public safety and indoor air quality.
- Generate cost savings over time for residents and building occupants.
- Support economic development by creating jobs to perform retrofits and attracting new businesses.

### Cost-Effectiveness

- HVAC heat pumps show a capital cost advantage of up to \$3,000 in retrofits for most homes (additional electrical panel upgrade costs for older homes diminish the cost advantage) and deliver bill savings of up to \$400 per year.
- Heat pump water heaters cost \$1,000-\$2,000 per household more than gas storage water heaters but have a lower capital cost than gas tankless water heaters and deliver bill savings of up to \$200 per year.

### Financing Options

- Incentives: SMUD provides \$10,000 in consumer incentives (up to \$4,500 to replace gas furnaces with a heat pump HVAC system, \$3,000 to replace gas water heaters with a heat pump water heater, and \$2,500 to get homes all electric-ready). PG&E also offers rebates for energy efficiency.
- Sacramento Measure U Funds: approximately \$47 million per year in additional revenue for the City
- Pay as You Save (PAYS): on-bill financing for energy efficiency upgrades
- Property Assessed Clean Energy (PACE): financing for energy efficiency via property assessments
- Metered Energy Efficiency Transaction Structure (MEETS): financing for energy efficiency investments (establishes agreement between building owner, investor, and utility without affecting tenants)
- Energy Savings Performance Contracting: budget-neutral approach for building energy improvements
- IBank Statewide Energy Efficiency Program: financing for comprehensive efficiency improvements
- U.S. DOE Title XVII Innovation Clean Energy Project Loan Program: financing for the first deployments of new technology to bridge the gap for commercial lenders

### Overcoming Potential Hurdles

- Realtor concerns: Assess a range of enforcement mechanisms based on cost and effectiveness, continue engaging with realtor community, and pursue a phased approach that encourages voluntary action through education and incentives prior to establishing and enforcing a mandate.
- Negative consumer perceptions: Conduct a robust education campaign that highlights the benefits of electric appliances, increases awareness of the health risks of indoor combustion, demonstrates new and improved technology, and increases awareness of incentives and rebates available.
- Cost-effectiveness: Leverage existing incentives, financing mechanisms, and programs while cultivating new partnerships to provide a comprehensive package to property owners and managers. For low-income residents and tenants, consider a phased approach if a capital cost advantage or bill savings cannot be achieved to allow the industry to mature and the market to become cost-competitive.