

San Francisco Zero Emission Building Taskforce - Existing Commercial Buildings Work Group:

Meeting #1 Notes

Existing Commercial Buildings Work Group – Kick-Off Meeting
 Wednesday, February 12, 2020 from 9:00am-12:00pm at
 SF AIA, 130 Sutter Street, Suite 600, San Francisco
 Hosted by: San Francisco Department of Environment
 Facilitated by: Michelle Vigen Ralston, Common Spark Consulting

Attendees

Those in attendance are listed below. Those grayed-out were absent.

Name	Organization	Representation
Johnathan Kocher	350 Bay Area	Environmental Advocate - Local
Danielle Mieler	San Francisco Office of Resilience and Capital Planning	City Resilience Planning
Alex Spilger	Cushman Wakefield	Real Estate Services – Large Commercial
Lauren Riggs Burt	Google	Tenant – Large Commercial
Amanda von Almen	Salesforce	Tenant – Large Commercial
John Bozeman	Building Owners and Managers Association of San Francisco	Trade Association- Large Commercial
Zachary Brown	CBRE	Real Estate Services and Ownership Representation – Large Commercial
Tristram Coffin	Whole Foods	Commercial Tenant
Hannah Kaye	PG&E	Utility – Electrification Planning
Daniel Considine	Boone Energy	Building Efficiency Consultant
Jim Coyle	Equity Community Builders	Contractor/Developer
Barry Giles	The Net Zero Existing Buildings Company	Building Efficiency Consultant
Rami Moussa	Point Energy Innovations	Engineer
Ryan Tinus	Hudson Pacific Properties	Ownership – Large Commercial

Laura Ettenson	Natural Resources Defense Council	Environmental Advocate - National
Chris Cayten	CodeGreen	Engineer
Michael Hyams	CleanPowerSF	Municipal Utility/Load Serving Entity
Jim Kelsey	kW Engineering	Engineers
Tony Birdsey	Tishman Speyer	Ownership – Large Commercial
Bill Whitfield	Shorenstein Realty Services	Ownership – Large Commercial
Sean Donnelly	TMG Partners	Ownership – Large Commercial

San Francisco Environment Staff in attendance included: Cyndy Comerford, Climate Program Manager; Barry Hooper, Senior Green Building Specialist; Rich Chien, Senior Green Building Specialist; Paris Smith, Green Building Energy Associate

Consultant Team: Lane Burt, Ember Strategies; Michelle Vigen Ralston and Jack Chang, Common Spark Consulting

Meeting Notes

1. Background

Barry Hooper, a Senior Green Building Specialist with the City of San Francisco, opened the meeting by laying out the task: inform a Roadmap to realize Mayor Breed’s goal to achieve zero operational emissions from buildings by 2050. He highlighted three numbers – 51, 81 and 6. Building emissions have been reduced 51% in San Francisco since 1990 due to efficiency and development of renewable electricity. Today, 81% of remaining emissions come from natural gas use. He cited PG&E’s estimate that in the event of a 7.9 magnitude earthquake, PG&E can restore electricity service to 95% of customers with six days, while restoration of natural gas service will require six months, so switching from natural gas to electricity would strengthen resilience in the event of emergencies.

The City taskforce is challenged to come up with solutions for San Francisco building on opportunities present today; for example, every electricity customer citywide has multiple options to obtain 100% renewable electricity via the grid. The group was asked to identify what role the City can play as a partner – such as setting goals and tracking progress, policy, training, and financial signals.

The goal of zero emissions by 2050 would be met if 3.5% of existing commercial buildings are electrified each year. Lane Burt, a consultant with Ember Strategies, illustrated three trajectories for existing buildings’ progress in meeting zero emissions goals on a chart where the X axis was time, and the Y axis represented the percentage of buildings with operational emissions (e.g. using gas). If the trajectory of electrification is fast then the policies needed to support the transition may be relatively light, focusing on a small set that fail to act. If the trajectory of electrification is slow, more intervention by the City may be necessary. The City is seeking input on how to facilitate substantive action, and not depending too much on only a carrot or only a stick approach.

2. Stakeholder Priorities

Michelle Vigen Ralston, the facilitator with Common Spark Consulting, shared concerns previously expressed by stakeholders about the proposed zero emissions existing commercial buildings policy. Michelle cited concerns from owners, tenants, engineers and environmental advocates, as well as concerns common to more than two stakeholder groups. Representative stakeholders in the room added their own concerns, corrections, and insights, resulting in a cumulative list:

Owners

Building owners consider themselves leaders in cutting-edge energy and sustainability thinking. At the same time, their business is based upon making a profit while serving tenant needs. Building owners are supportive of emission reductions, aware of the costs of failing to mitigate climate change, and also concerned about the costs of decarbonization.

In that context, owners will want to zero out natural gas in a way that minimizes cost and disruption to both themselves and tenants. That is a challenge considering priority to provide comfort for occupants, technical requirements, and compliance with California's Title 24 building energy standards.

Several owners cited cost concerns and the need to establish the financial case for energy system modifications. Owners also listed general technological, environmental and fiduciary risks with installing new or unfamiliar equipment.

Owners and tenants cited split incentives discouraging investing in building electrification modifications, especially in B and C class buildings – as well as concern about disturbing tenants.

Today the easiest path for building maintenance is replacing existing natural gas-powered furnaces and water heaters with the same type of equipment - which can have useful lives of a decade or more. Replacing equipment before the end of its useful life is expensive. From the owner's perspective, the smartest path forward could be investing at the time equipment is replaced, when the marginal cost of electrification is lowest.

Owners emphasized electrification must fit their investment and planning cycles, which operate on five to seven year timeframes. Requirements should be designed to sync with capital planning cycles.

Tenants

Tenant representatives said they are motivated and want to do more to speed along building decarbonization, but need the cooperation of building owners. For example, some commercial tenants have been told by owners that installing energy-saving features could make a building less marketable. As a result, the costs of making such sustainability modifications can end up falling on tenants.

Some large tenants have adopted property sustainability and resiliency requirements, which can limit the range of properties they can occupy. As owners noted, tenants prioritize productivity of their people, so any electrification requirements should minimize disruption for existing tenants. A great help to tenants

would be more transparency about building owners' plans for their properties, including any plans to make energy system modifications.

Equity concerns were raised: large commercial buildings can include small- and medium-sized tenants, who are sensitive to changes in total cost of occupancy and have little influence over base building systems. Restaurants were noted as a complicated case, as they are a tenant with significant process use of gas for cooking, where electrification would entail capital investment by the tenant in equipment, and may also depend on owners upgrading building electrical infrastructure.

Tenant representatives said leases could provide the best mechanism for tenants to negotiate the inclusion of more sustainable features into properties such as all-electric, rather than natural gas-powered, heating and appliances. Leasing negotiations can last more than a year so that time should be incorporated into the implementation timeframe.

Engineers

Some electrification upgrades can be easy to make. The technology – heat-pump space and water heaters and induction cooking ranges, for example – is available and proven. Yet more education is needed considering remaining skepticism or lack of awareness about the technology from engineers, building inspectors and even PG&E workers.

Aversion to risk explains much of the resistance to new technology. Engineers and contractors often don't want to be blamed if anything goes wrong with technology they're not familiar with so they default to either familiar technology such as natural gas-powered furnaces and water heaters, or bids may be inflated to compensate for perceived risk of doing something for the first time.

Environmental Advocates

Decarbonization of buildings needs to happen “yesterday” to avoid the consequences of climate change we are experiencing today; action is needed quickly.

San Francisco is one of the richest cities in the world and is in an ideal position to make such a transition work. The city can't afford to not meet its zero emissions target, which is just one small piece of the climate puzzle.

Common Concerns

The City can tackle other problems at the same time as it's decarbonizing buildings. Such synergistic benefits could include public health, housing affordability or developing diverse, well-paying jobs in the city. San Francisco can also build on projects already underway to tackle issues and make use of existing coalitions. The city should also make sure that small- and medium-sized businesses aren't disproportionately affected.

From the utility side, PG&E has said it is ready to work with engineers and developers to meet their objectives, including phasing out natural gas use where desired. Utilities are currently obligated by state law to provide natural gas service if a customer requests it (e.g., obligation-to-serve).

3. How We Get There

Which tools can be used to achieve full electrification of existing commercial buildings?

- For building owners, carbon offsets may be useful financial instruments, allowing one building to pay for emissions-reducing modifications in another building at lower cost.
- Building property and asset managers will need to include efficient electric space heating and water heating (heat pumps) and related modifications in their capital plans. Capital plans are created when buildings are purchased and typically look five to ten years into the future. Well-funded capital plans have a degree of flexibility since line items are often approximated or placeholders, where investments are revised about a year before installation.
- Owners already purchase asset assessments where they explore what components are likely to require investment, and when. Capital plan workflow is the context in which owners could define a timeline to transition to electric HVAC systems and other sustainable equipment. Such feasibility analyses can also be incorporated into regular audits of large commercial buildings.
- Portfolio managers are already setting environmental social governance (ESG) goals and positioning their portfolios to meet such goals. As a result, a building that meets ESG goals can appeal to potential buyers seeking a more sustainable property portfolio. Such investors might include large institutions such as CalPERS or CalSTRS with sustainable investment mandates.
- On the regulatory front, clarity about what's coming is valued by all stakeholders. Many planning and contractual negotiations can take years to complete so developers, tenants and engineers need a long runway to implement changes.
 - One example is in lease negotiations, which can take 12 months. Leases can range from three to fifteen years (typically 5 to 7). Knowing the regulatory landscape going forward would inform lease negotiations. In addition, designing a supermarket or other retail use can take three to five years before the business opens. Neither major tenants nor owners want to invest in designs that must be revised before construction, or to install systems that will have to be removed before the end of the equipment's use life.
 - Several participants said a possible model for a predictable implementation timeline would be the California Air Resources Board's rollout of its Refrigerant Management Program. That initiative aimed to reduce emissions of refrigerants with high global warming potentials by requiring the registration of refrigeration systems, more refrigerant leak detection and monitoring, leak repair and other practices.
- For PG&E, knowing and planning for future decreased demand for gas service would be helpful for planning infrastructure and maintenance needs in the city and for preventing paying for unnecessary fixed costs to maintain natural gas distribution. For example, there could be lower total cost to society for an electrification mandate phased in geographically rather than by building type.
- For example, reducing natural gas system-initiated fire risks would only prove effective if all the buildings in an area stopped using natural gas at the same time so the infrastructure could be shut down/removed.
- Clarity is also needed about the grid's capacity for accommodating an increase in electricity demand due to the phased zeroing out of natural gas use throughout the city. Electricity grid maps need to be overlaid on top of gas maps to help determine grid capacity in areas where natural gas is being phased out. Such grid capacity planning needs to also consider the projected

increased use of electric vehicles and charging needs, which is expected to be a more significant load than building electrification.

- Stakeholders should work with California regulators to ensure departure from the natural gas system doesn't unduly burden existing consumers with the costs of maintaining natural gas infrastructure. That would increase gas rates for those stranded consumers.
- The City of San Francisco has set a broad goal of zero emissions by 2050. Decommissioning parts of the existing natural gas infrastructure is not currently the City's role, but the City could partner with PG&E to support electrification, reliability, and equity for remaining gas customers.

4. Timeline

Most meeting participants said 2030 was a good starting point for implementing a requirement to decarbonize (remove natural gas end uses in) existing commercial buildings. Incentives could help speed along the process as well as clear messaging to owners, tenants and engineers that the change is coming. That would help stakeholders to get ahead of the coming transition. There was some concern in the group that 10 years would not be enough of a lead time, considering that getting a simple gas or electrification project in place already takes two to three years.

Several participants said it would be imperative to discourage the installation of any more natural gas-powered equipment with 10-to-20-year lifetimes as soon as possible. The city also needs to provide the right information, planning and financial resources to help stakeholders prepare for the change.

Several participants said they liked a proposal to require submissions of a 10-year capital plan by building owners that would include electrification infrastructure analyses, along with checkpoints five years into the plan that would make sure the transition is on schedule. Some of this detail could also be included in existing audits for large buildings.

The 10-year runway would also give the SF Public Utilities Commission and PG&E time to plan for the expected ramp-up of electricity generation, distribution and transmission.

The bottom line is utilities, property owners, tenants and other stakeholders need to receive a clear signal about what will be required and when so that stakeholders can start infrastructure planning as soon as possible.

5. Next Steps

- Learn from New York's experience developing similar electrification plans – what did and didn't work as well as pitfalls and unknowns.
- Solicit thoughts in a survey about concerns not addressed in the first working group meeting such as enforcement needs, implementation support and technology concerns.
- Two more existing commercial building working group meetings in February and March are planned as well as a public workshop. The working group is not being asked to write policy, but to provide more high-level input into the expected deliverable.

- SF staff will develop a straw proposal based on the meeting's discussion to present for feedback at Meeting 2.
- The Zero Emission Buildings Taskforce will inform Roadmap to Zero Emission Buildings, and an update to the San Francisco Climate Action Strategy - both expected to be published in November.