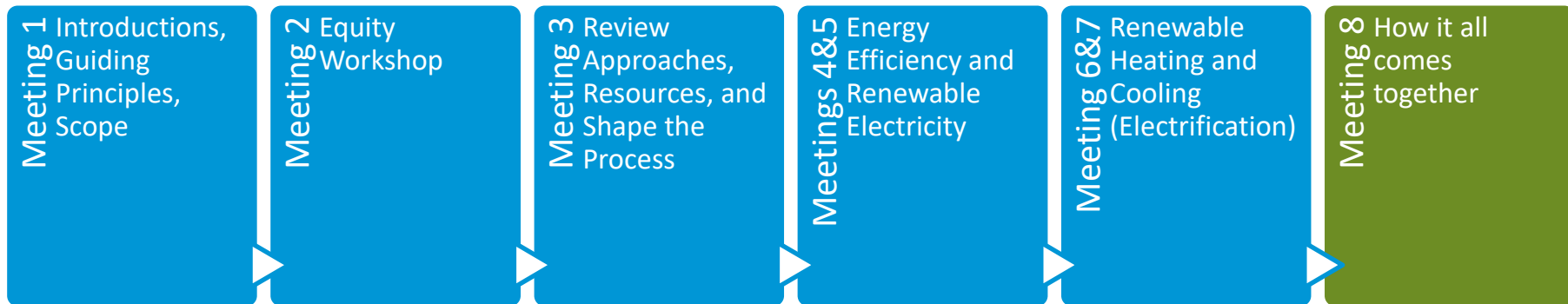




Energize Denver Task Force

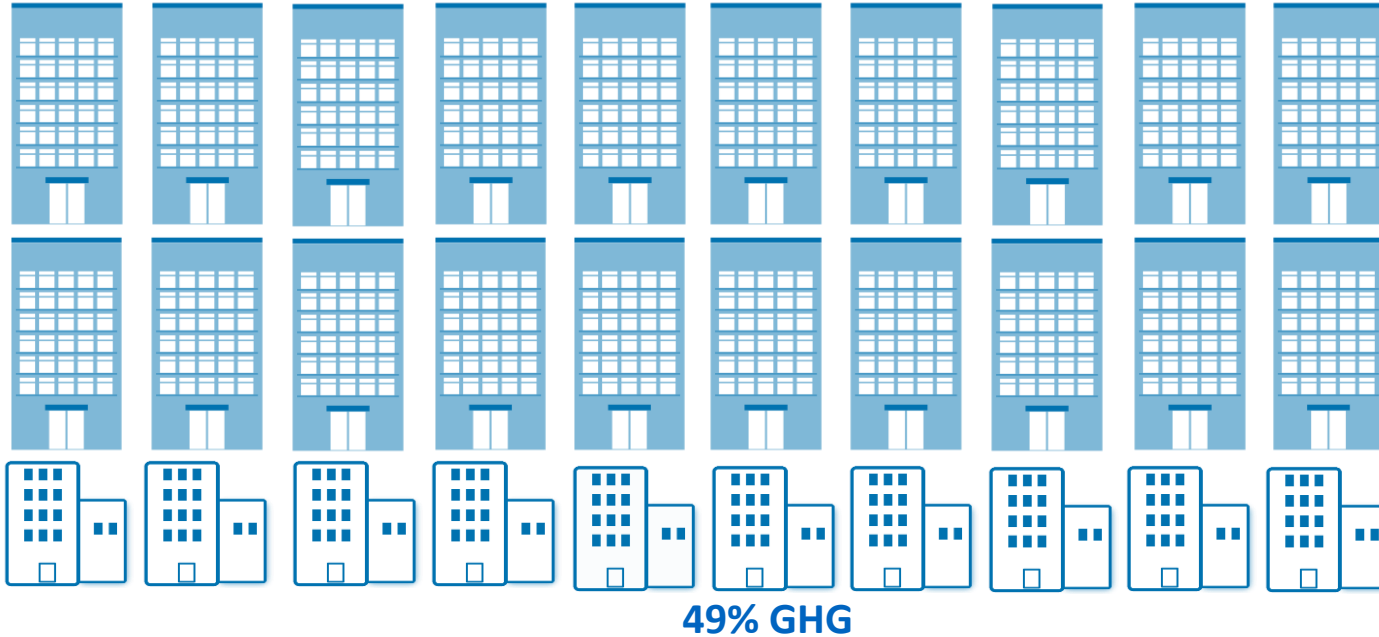
Meeting 8, 8-19-2021

Energize Denver Task Force Schedule



Workgroups:
Equity Workgroup
Workforce Workgroup
Climate Solutions Workgroup

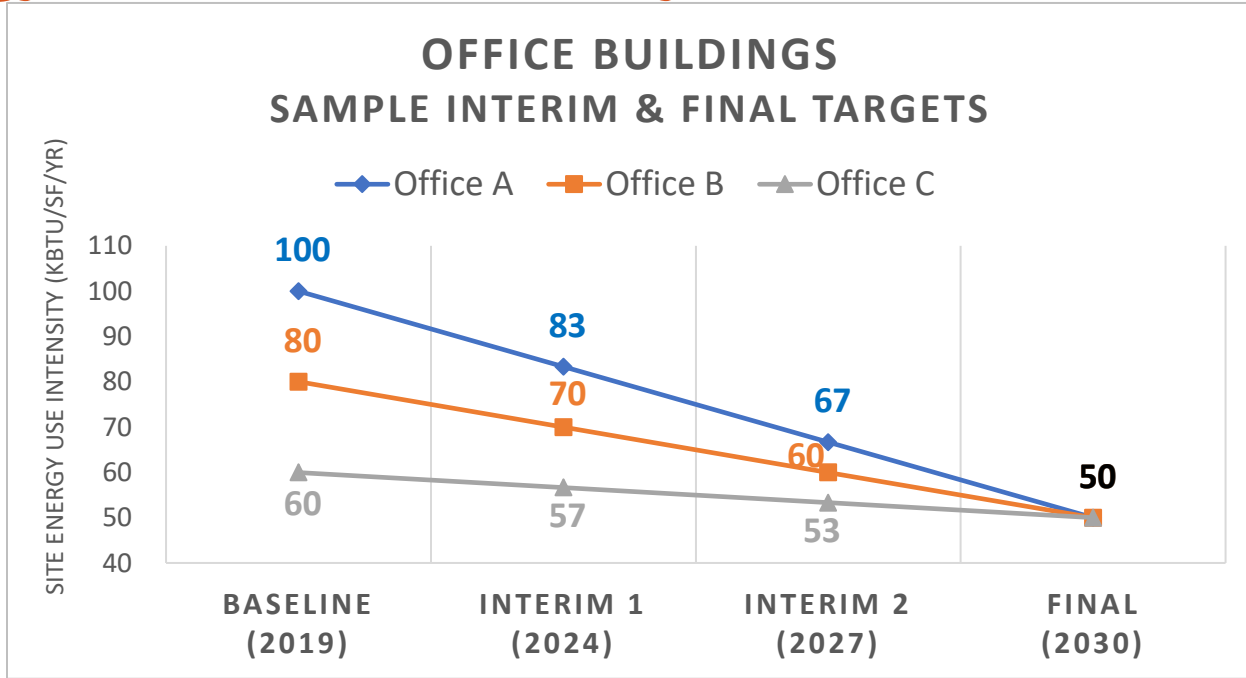
Commercial and Multifamily Buildings Account for 49% of Denver's GHG Emissions



- >25,000 sq ft:
- 82% of square footage
 - **3,000** buildings

- <25,000 sq ft:
- 18% of square footage
 - **14,000** buildings

EE/RE Policy: 30% Improvement in Energy Performance by 2030



EE/RE Policy: Alternate Compliance Options

1. Request different **compliance timeline**
2. Adjust **end goal**
3. **Prescriptive** Option: for 25,000-100,000 sq ft buildings
4. Manufacturing/Agriculture: Rules to be developed by manufacturing and agricultural stakeholders to achieve 30% savings by 2030 across this sector.

Partial Electrification when Cost Effective: Phasing and Incentives

Phase 1 (2022-2023)

- Incentives for Electrification Schematic Design and Costs

Phase 2 (2023-2025)

- Permitting Ease Equal: Make the permitting process equal because permitting a heat pump is harder than gas system today.
- Incentives for Heat Pumps for All Buildings

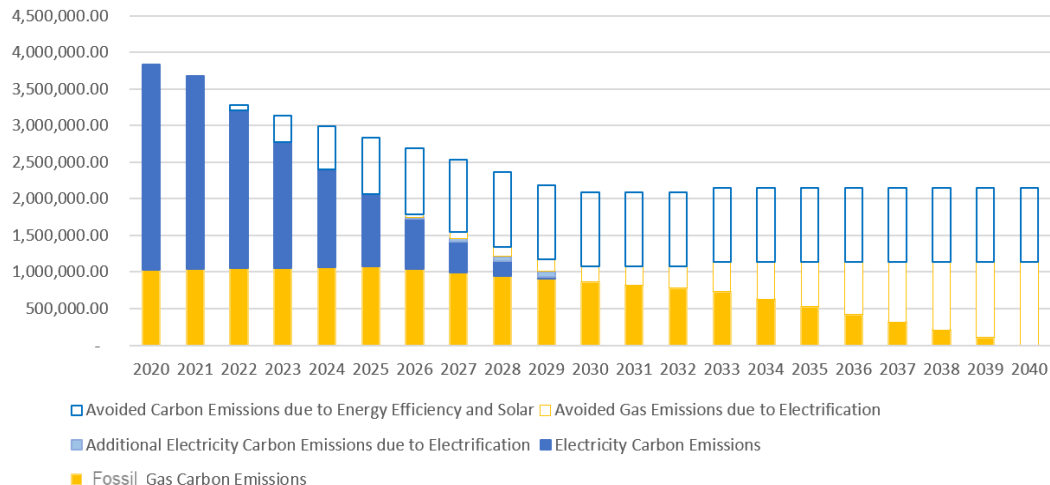
Phase 3 (2025-2027)

- Require heat pumps when systems are replaced when cost effective.
- Incentives for Heat Pumps for only Under resourced Buildings

Incentives, Supports and Outreach

- Performance **Portal**
- Web **Resources**
- **Materials**: how-to guide, check lists
- Targeted **Outreach** and **Education**
- **Technical** Assistance – extra for under-resourced buildings
- **Financial** Assistance – extra for under-resourced buildings
- Community **Engagement**
- Recognition/awards

Goal of the task force shown graphically (open bars): NZE by 2040



Impact of Task Force Recommendations

Carbon Impact	Cumulative Carbon Reduction by 2040 (million tons eCO2)
Task Force Goal	13.7
Benefit of EE & RE policies	8.2
Benefit of electrification policies	3.6
<i>Benefit of all policies</i>	11.8

- Equal to removing 2.5 million passenger vehicles from the road for one year.
- While this doesn't achieve the Task Force goal, it does achieve as much as the Task Force feels is reasonable and achievable for building owners and managers in Denver.
- The City should continue to investigate how to close the gap.

Community Engagement Summary

Community Engagement Overview: *July 19-29, 2021*

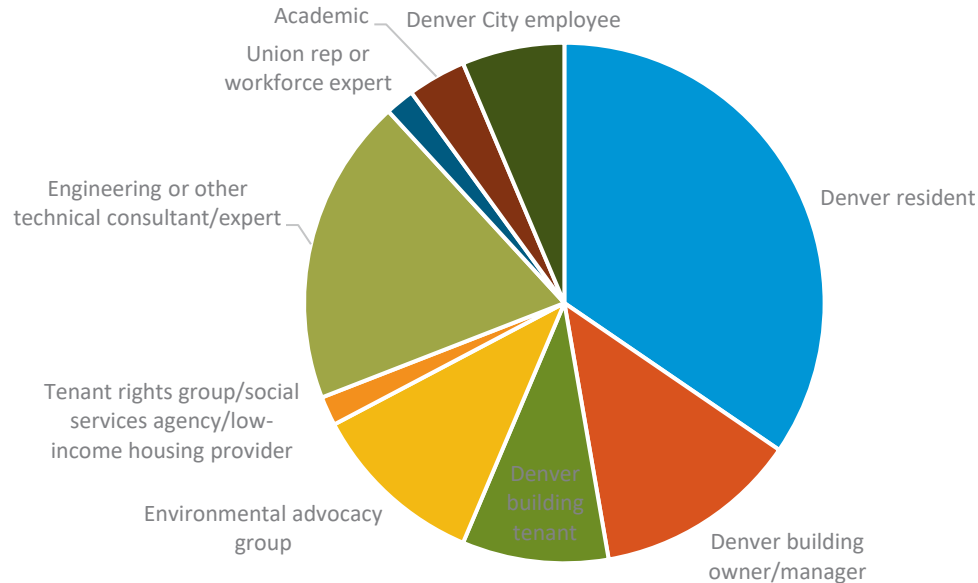
The City:

- Hosted a technical briefing and input session on July 21st that included ~80 participants;
- Hosted a technical briefing and input session on July 28th that included ~50 participants.
- Hosted a industrial and manufacturing discussion with relevant stakeholders.
- Published a survey to collect input from 64 stakeholders and community members.

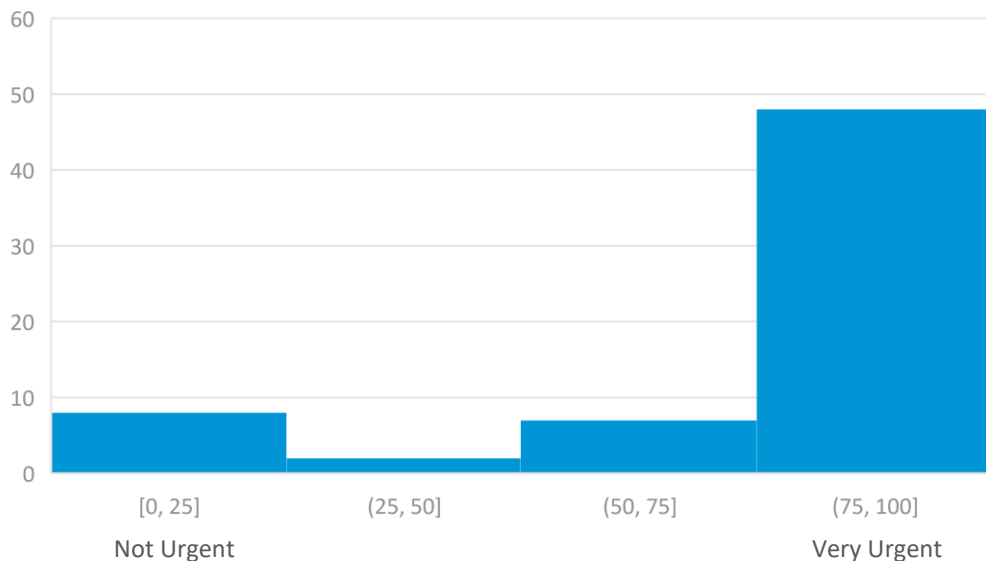
Individual Task Force members hosted briefings, discussions and collected input from the stakeholders they represent. These include:

- An input session with BOMA, NAIOP, Downtown Denver Partnership and IREM members that had ~50 participant
- A discussion with the affordable housing and non-profit sector
- Input from COSSA members

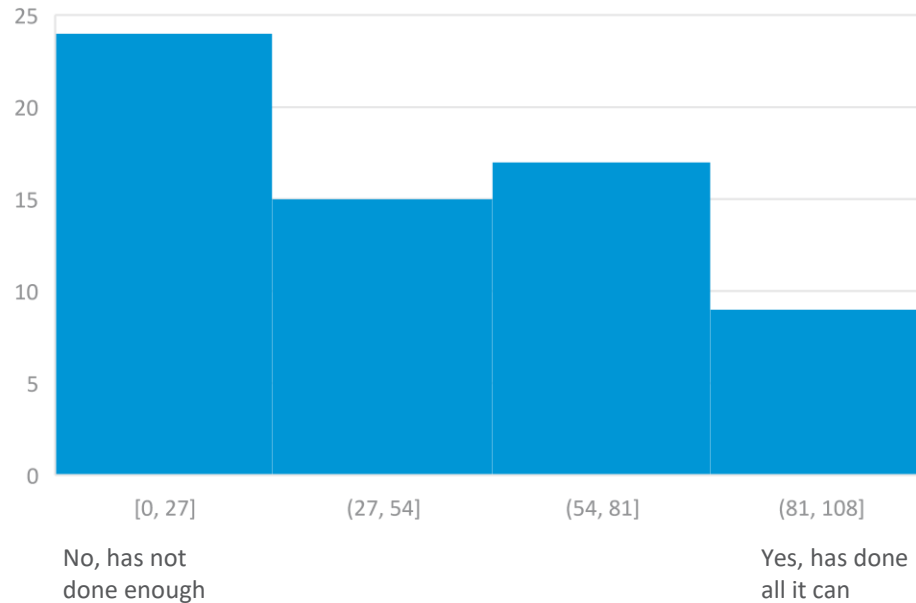
Who were the 64 survey respondents?



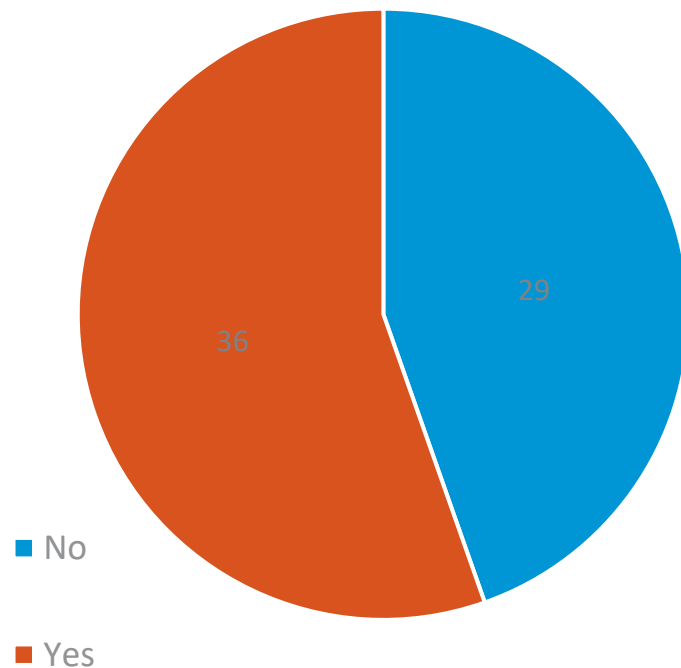
What's your sense of the urgency of the climate crisis?



Has the task force done all it can to reach its goal of requiring existing buildings to achieve Net Zero Energy by 2040?



Are we generally on the right track to ensure the ordinance is truly achievable for all building owners and managers given the recommended supports, incentives, and alternate compliance pathways?



Pre August 4th tweaks to align with comments from the task force and community

Summary

Section 4.2 Partial Electrification Upon System replacement

For both easier and harder to electrify system types electrification is only required when economically feasible.

The economic feasibility analysis should be based on a comparison of a like-for-like system replacement plus the social cost of carbon of that system, as compared to the cost of the partially electric system including all incentives.

The City will study and outline the definitions and criteria for economic and technical feasibility exceptions for partial electrification requirements to ensure eager and cost effective compliance and allow for uneconomic projects to file for an exemption while ensuring those systems that are achievable at nearly cost parity move to heat pumps. The City should pursue demonstration projects and case studies and gathers information of true installed cost of heat pumps as compared to like for like systems. The City should require building owners to get at least three bids for a new heat pump system. As a placeholder, economic feasibility will be defined as within 5-15% of a like-for-like building. Actual percent may not be helpful to have in ordinance, but this is guidance for how what threshold the City should hit.

Section 4.2 Partial Electrification Upon System replacement

The economically infeasible exception should include:

- For individual system with a tank-type water heaters, an exception will be made if there's not an appropriate space for cost effectively venting the cold air or if the heat pump water heater won't fit in the water heater closet.
- Panel upgrades are needed that make the project less cost effective. (The exception for panel up grades goes away if 120 V water heaters become readily available in the future.)
- For roof top units, the current package unit is greater than 20 tons, and a heat pump roof top unit can't be found that is that big, then a new gas system can be installed.
- For emergency replacement when it is cold and heat is needed asap.

The following ideas should be considered by the City in the future, but not at this time.

Added to Section 7.1, the 'What's Next' section:

- Require more than 30% energy savings across the building stock from the energy efficiency and renewable energy policy.
- Evaluate bio-gas/synthetic gas compliance options over time.
- Require programmable thermostats when a major renovation happens.
- Expand the Green Buildings Ordinance to small buildings at the time of roof replacement.
- Require water efficiency improvements.
- Rental policy requirements to improve energy performance

All post August 4th tweaks

Section 2.3 Support for Under-resourced Buildings

To ensure people of color see these benefits first, and that unintended consequences are avoided, under-resourced buildings will need additional support in the form of:

- **Additional Technical Assistance:** The City should provide buildings owners and managers in areas needing the most help with building-specific, one-on-one consultative services and free energy assessments to aid owners in compliance from start to finish.
- **Additional Financial Assistance:** Under-resourced buildings will receive incentive dollars to help them achieve cost parity for the electrification requirements with a like for like replacement. In addition, these building owners should be able to apply for funding to directly help subsidize project costs for those who need it most. The City should evaluate any gentrification pressures from the policy on an ongoing basis and explore ways to mitigate these in a way that achieves a maximum equity benefit with City incentive and assistance dollars.

The City should identify under-resourced buildings that have affordability covenants and if a property has 5 years or less remaining in their affordability covenant, CCD should engage with these building owners about the program to incentivize a renewal of the covenant but not offer additional incentives unless a long term commitment is made to providing affordable housing.

Section 3.1: Energy Efficiency and Renewable Energy Policy

For retail, warehouse, or other building types where building owners often don't have control of energy systems per the lease, the City will look further into these lease clauses to determine if we need an exemption for owners in some cases.

Section 4.2 - Easier to Electrify Systems

“Heat pumps should not be required in any of these systems if another similarly low carbon electric system **that should not increase tenant energy costs** is available, likely through the installation of solar panels paired with equipment controls and/or on-site storage.”

Section 4.3 Financial Incentives

Ongoing, Approach to Incentives from Others: City incentives should fit with existing utility incentives. Further, the City should advocate for more utility, federal, or other incentives. **The City should design City incentives so they have a clear prescriptive incentive structure and can easily be combined with other building rehab funding sources for affordable housing and should partner with key organizations like CHFA, EOC, DOLA, HOST and others to leverage existing programs for larger impact. The City should ensure that the extra technical assistance for under resourced buildings is coordinated with the helping people use incentives.**

Section 6: Implementation

The City shall implement the policy as specified here with oversight from a Technical Advisory Committee and regular check points that ensure the policy is achieving the climate goals, cost effectiveness goals, and racial equity goals laid out in this document. This also ensures flexibility over time and consideration of new technologies. The Task Force recommends revisiting the policy every four years. **The City should begin robust outreach to the building owners, managers, and contractors as soon as the ordinance is in place to help the community understand the ordinance, how it applies to them, and to enable them to begin planning for compliance.**

What if the building owner doesn't have control of energy usage per the lease?

- The City will look further into these lease clauses to determine if it will require an exemption for owners in some cases.

Key issues for today

Section 4.2, Split system AC condenser/furnace

These systems are not always replaced at the same time:

1. AC and Furnace replaced at the same time
2. AC alone replaced
3. Furnace alone replaced

Section 4.2, Split system AC condenser/furnace

For split system AC condenser/furnaces and roof top units, 'primary heating source' means the heat pump is the lead heating source, and gas only turns on when the heat pump can't cover the load. For these system types, 70-80% of heating needs should be able to be met by heat pumps cost effectively. **The policy pertaining to split system AC condenser/furnaces should specifically require heat pumps as the primary source of heating for all projects where both the furnace and air conditioner are being replaced. Additionally, if the exterior condensing unit needs to be replaced, a heat pump must be evaluated and installed if a heat pump is compatible with the interior unit and existing refrigerant line set**

However, the policy should allow an exception for instances where the furnace alone is being replaced; in this event the existing furnace may be replaced by a gas condensing furnace.

Small Buildings EE/RE: Lighting upgrade or Solar

- All buildings under **25,000 sq ft**
- **LED lights** or solar on site to meet 20% of electricity usage.
- Addition 1 million metric tons of savings

Section 3.3, Lighting upgrades or solar for buildings under 25,000 sq ft

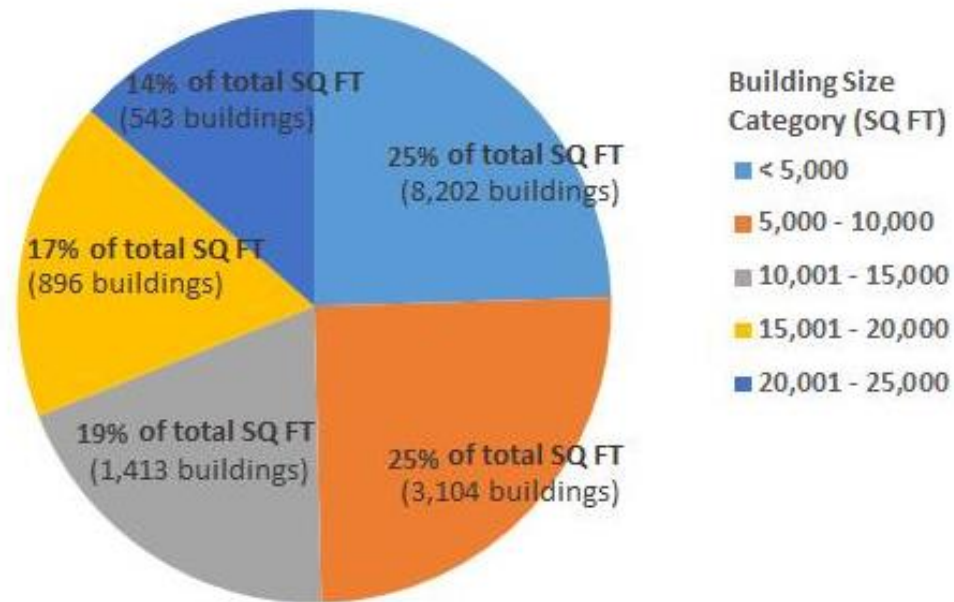
By 2025, commercial and multifamily buildings under 25,000 square feet should either certify that they have installed all LED lights or that they have achieved an equivalent lighting power density to what all LEDs would have resulted in. Alternately, the building owner may install solar panels or purchase off-site solar that generates enough electricity to meet 20% of the building's annual energy usage. The City should only dedicate resources to the implementation of this requirement that are proportional to the savings it will achieve. This recommendation adds ~1 million metric tons of savings, compared to ~7 million metric tons of cumulative greenhouse gas savings by 2040 from the other energy efficiency and renewable energy policy recommendations above.

Key questions on small building lighting/solar policy

- What year should it start?
- Should there be a floor on building size covered?

Should there
be a floor on
building size
covered?

Breakout of Square Footage for Commercial and Multifamily
Buildings under 25,000 SQ FT



What's next?

- Announcement of Task Force Recommendations
- Implementation of Task Force recommendations

City Next Steps with your Recommendations



Announce Recommendations

- Spokespeople from the task force help City staff present and explain the recommendations to the press and City Council.
- Ideas for how to create excitement/ momentum?