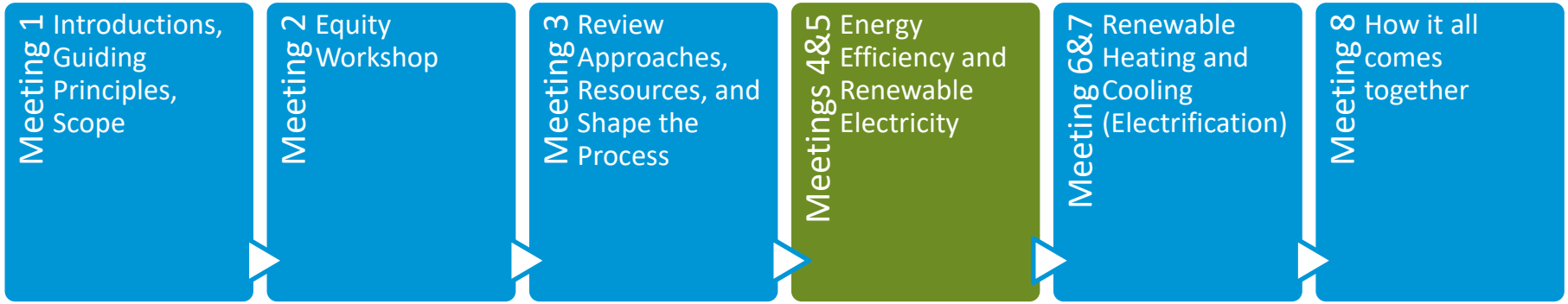




# Energize Denver Task Force

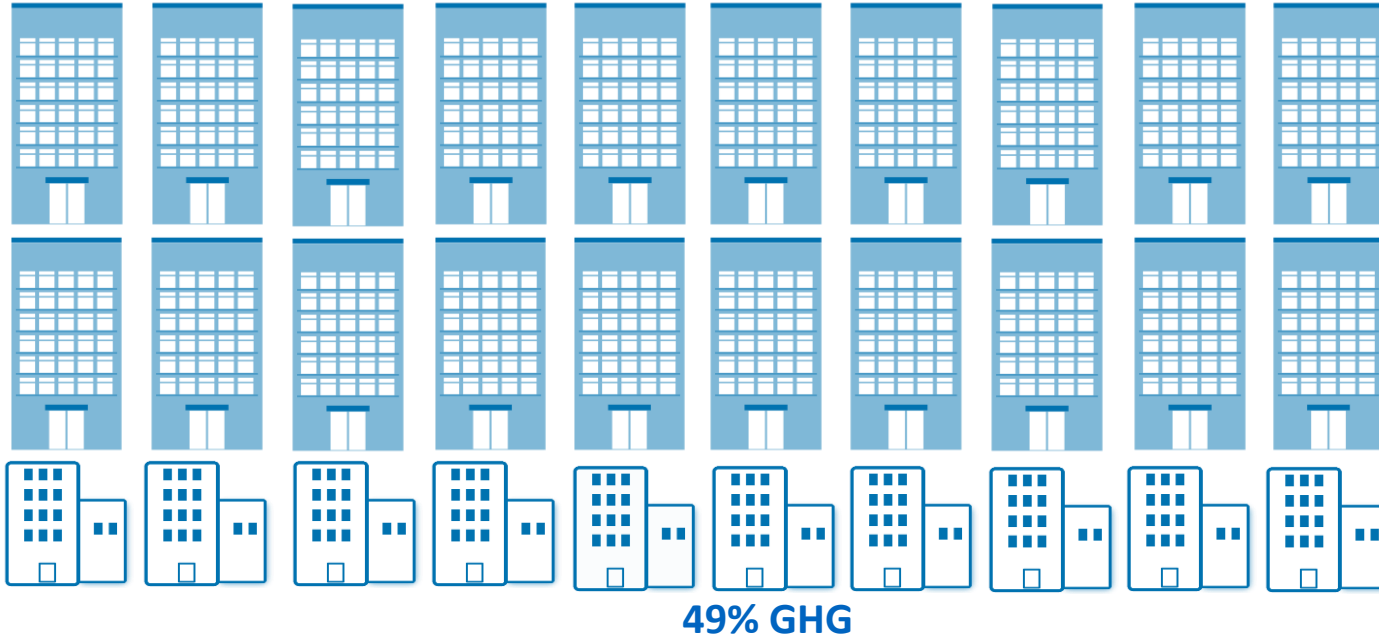
Prep-briefing for Meeting 5, 5-10-2021

# Task Force Draft Schedule



Workgroups:  
Equity Workgroup  
Workforce Workgroup  
Climate Solutions Workgroup

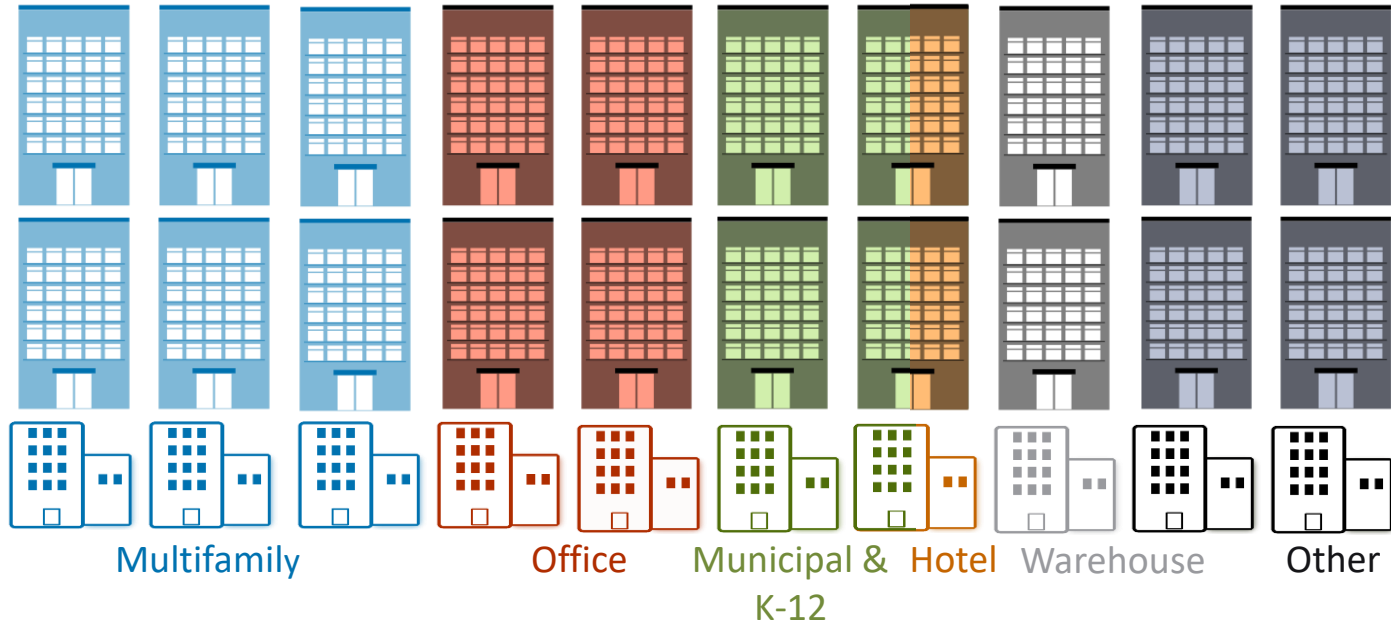
# Commercial and Multifamily Buildings Account for 49% of Denver's GHG Emissions



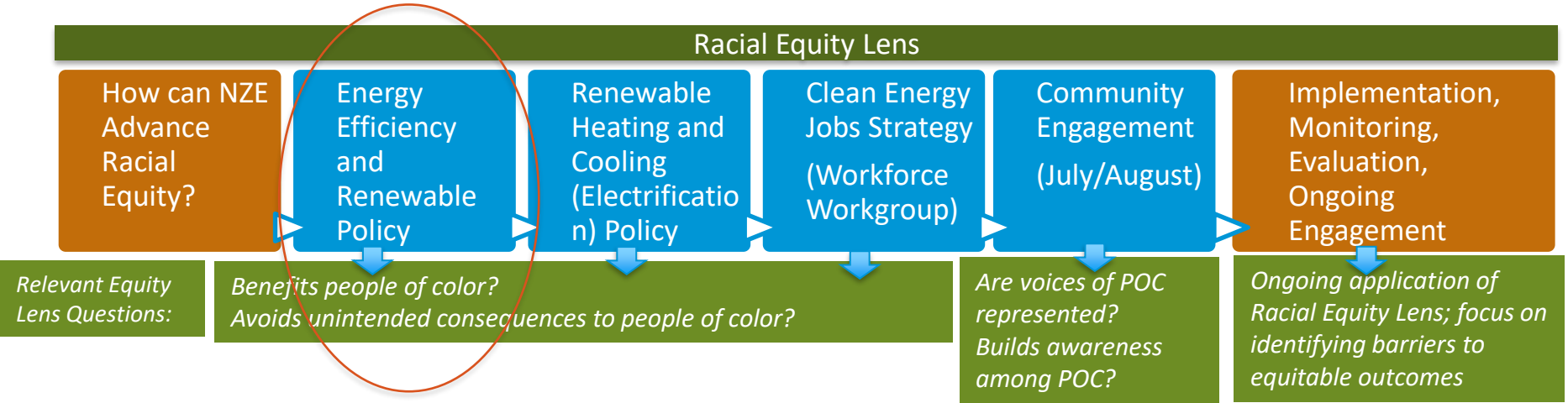
- >25,000 sq ft:
- 82% of square footage
  - **3,000** buildings

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

# Building Types and Sizes



# Racial Equity Roadmap

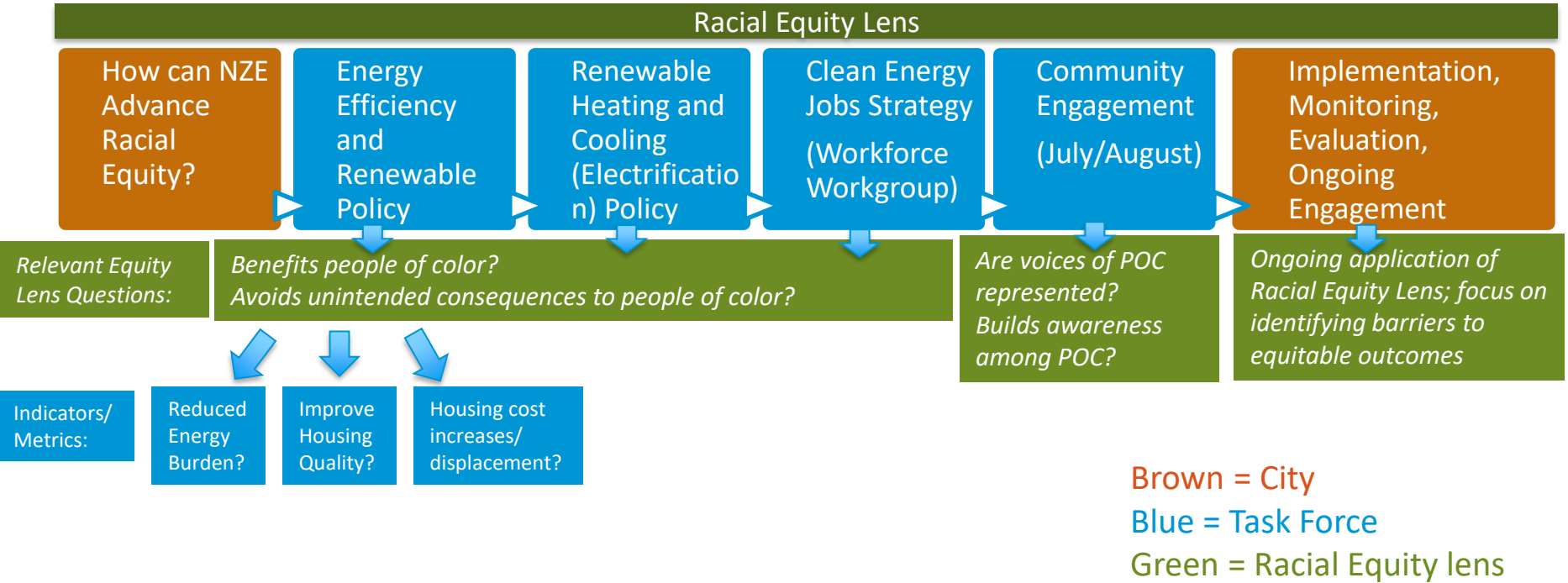


Brown = City

Blue = Task Force

Green = Racial Equity lens

# Racial Equity Roadmap



# Denver Policy Option

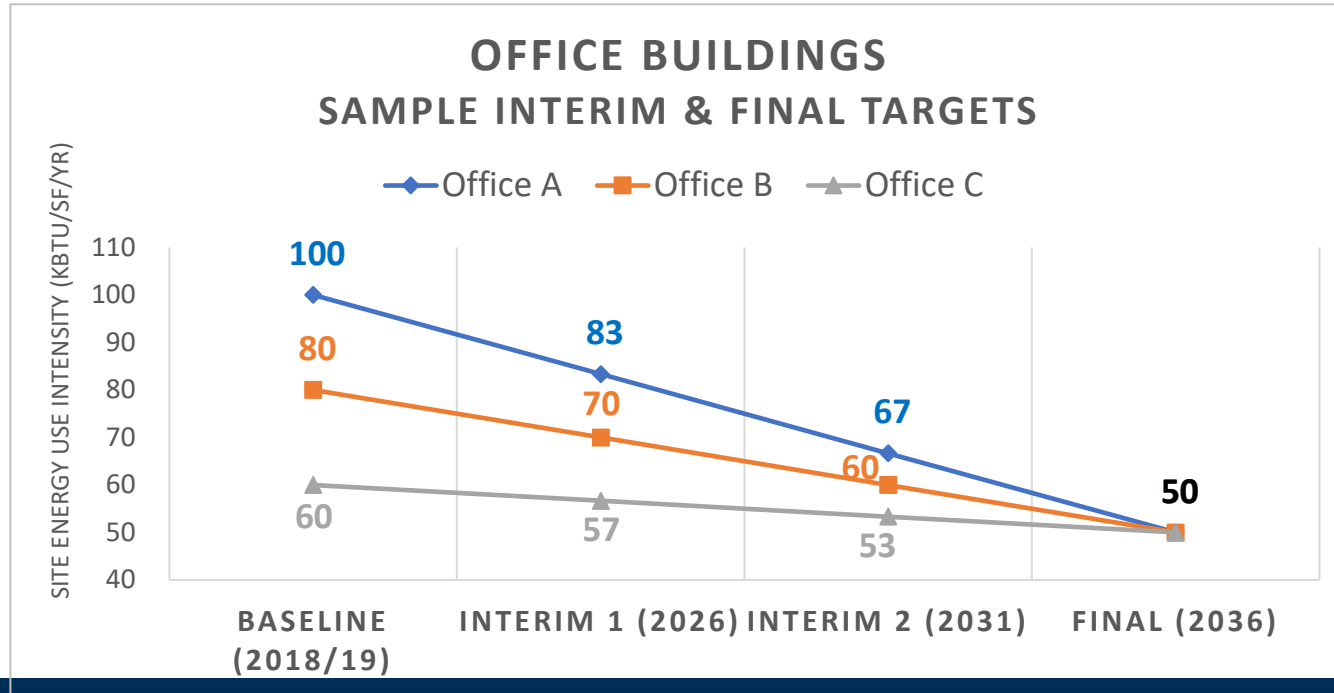
Energy Efficiency and Renewable Electricity (EE/RE)

# 30% Improvement in Energy Performance by 2036

- All buildings over [25,000/50,000/100,000] sq ft covered.
- Long-term performance target created for each building type measured through Energy Use Intensity (EUI).
- Required interim targets for 2026 and 2031 set for each building by drawing a straight line from that building's baseline EUI to final EUI target.
- Solar on-site fully credited towards energy use, directly lowering a building's net EUI.
- Credit for high performers: the 15% of buildings that already meet the target EUI for that building type (or better) need no further action.



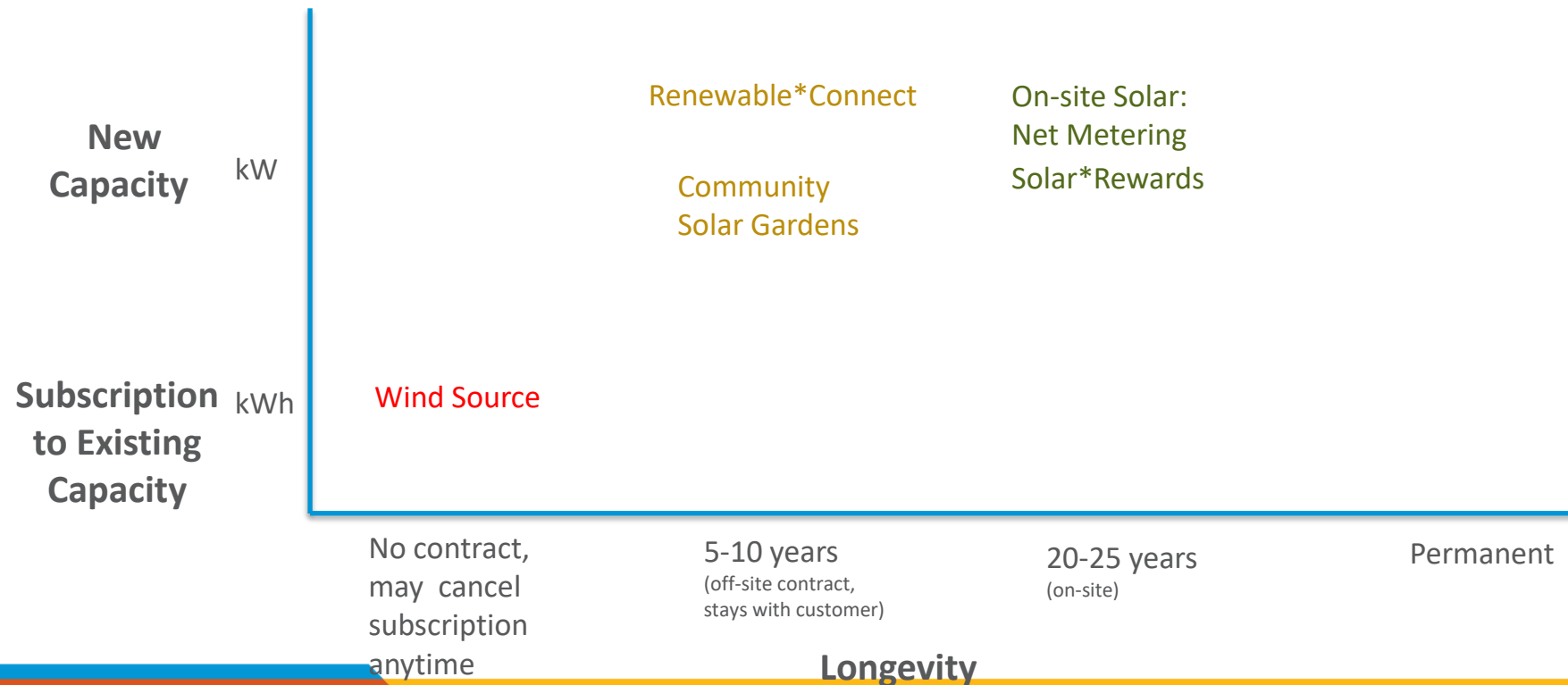
# 30% Improvement in Energy Performance by 2036



# Considerations for the Task Force

- **Compliance** dates
- Target **savings** level
- Building **size**
- Off-site **solar**
- Adjust final **target** for each building using statistically significant **factors** that EPA uses to adjust ENERGY STAR Portfolio Manager scores (e.g., occupancy, operating hours, etc)?

# Renewable Options in Denver



# Alternate Compliance Options

Request different **compliance timeline**: Building owners could apply for a different timeline to meet the same end goals because it's more cost effective if they wait until:

- End of system life
- Time to refinance the building
- Timing of a major renovation

To adjust the timeline a building owner would need to submit a plan showing:

- Quick payback items like LED lighting upgrades, VFD and motor upgrades and controls upgrades have been completed.
- Reasons why they can't install solar to achieve compliance with an interim target?
- Owners must develop and submit for approval a retrofit plan with planned project dates and an energy model showing the results of the future planned project and how it meets the required EUI reduction.

# Alternate Compliance Options

- Adjust **end goal**: Due to inherent characteristics of the building or a substantial change in use.
- A standard analysis should be developed that a building owner must hire an engineer to complete.
- Might be reviewed by a Technical Advisory Committee?

# Alternate Compliance Options

- **Prescriptive Option:** for 25,000-100,000 square foot buildings.
- If they electrify (partially or fully) and verify they have all LED lights then they would be in-compliance, regardless of EUI.
- Do we need this, or could these buildings just do solar?

# Considerations for the Task Force

- Do these alternatives create a **cost-effective compliance, feasible** pathway for all buildings?
- What would qualify for an alternate compliance timeline?
- Is the prescriptive option needed for smaller buildings, or could they just use on-site **solar** to comply?

# Fit with the proposed State Bill

Total Buildings >50k sf	Buildings with ENERGY STAR score > 75	EUI Performance Target Met	EUI 15% Reduction Met	Neither criteria are met	% Not Met
1,863	540	314	564	684	37%



# Carbon Impact

	Cumulative Carbon Reduction by 2040 (tons eCO2)
City Goal	12,945,481
Benefit of EE & RE policies	5,124,942
Benefit of electrification policies	TBD - June/July
Benefit of all policies	5,124,942

# Incentives, Supports and Messaging

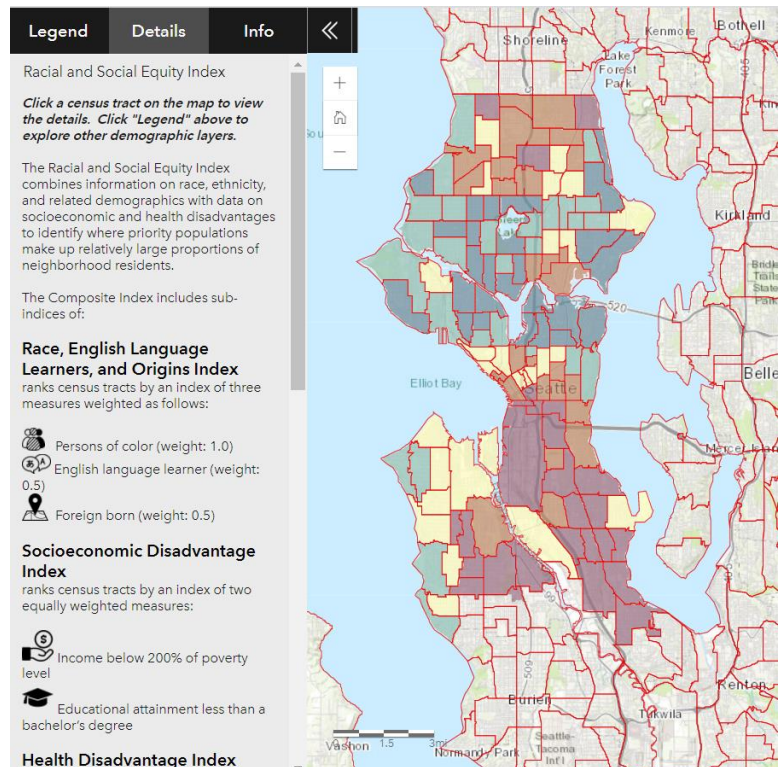
- Performance Portal
- Web Resources
- Materials: how-to guide, check lists
- Targeted Outreach and Education
- Technical Assistance
- Financial Assistance
- Community Engagement
- Recognition

# Additional Racial Equity Support for buildings serving people of color

- Targeted Outreach and Education
- Additional Financial Assistance
- Additional Technical Assistance
- Default expedited applications for buildings with high scores on Social Equity Index

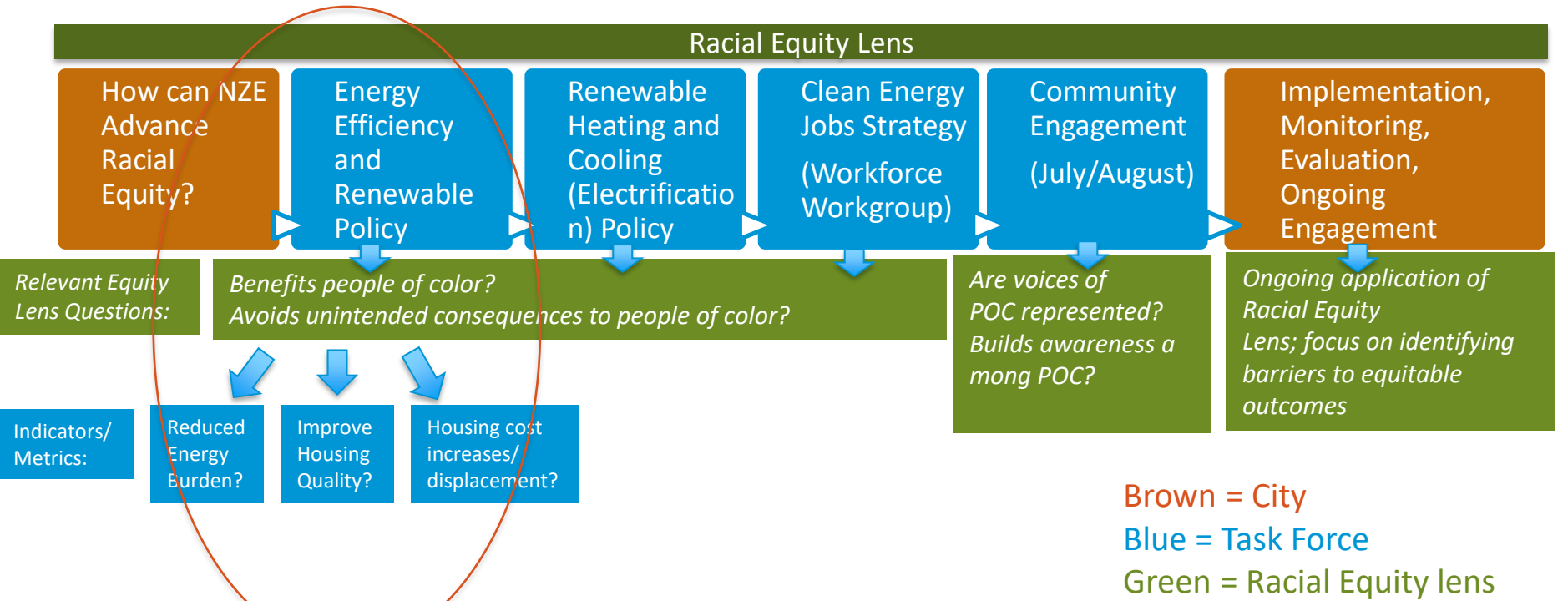
# Racial Equity Index

- Use weighted social equity indicators to develop an index score that can be used to identify under resourced buildings at the census tract level
- Example: Seattle's Racial and Social Equity Index



<https://seattlecitygis.maps.arcgis.com/apps/Minimalist/index.html?appid=764b5d8988574644b61e644e9fbe30d1>

# Racial Equity Roadmap



# Energy Burden

- 30% improvement in energy efficiency and renewable energy can lower energy burden for people of color by 30% - - by **lowering energy bills** (in buildings where tenants pay the energy bills).
- Policy Design Tool shows a 3-15 year payback to comply with the proposed policy.
- After initial investment has been paid back, building should see lower bills on ongoing basis.

# Improved Building and Housing Quality

- Improved building and housing **quality**
- Improved **ventilation**
- Improved **thermal comfort**

# Considerations for the Task Force

- What **supports/incentives** will help buildings comply so POC see the benefits first?
- How to avoid negative outcomes and unintended consequences for POC such as increased **housing costs, rent, and displacement or gentrification?** (E.g., requiring rent to be locked in for financial assistance.)



# Preview of Renewable Heating and Cooling (Electrification)

*Energize Denver Renewable Heating and Cooling Plan:  
Existing Building and Home Electrification*

*To be released: June 2021*

# Net Zero Energy

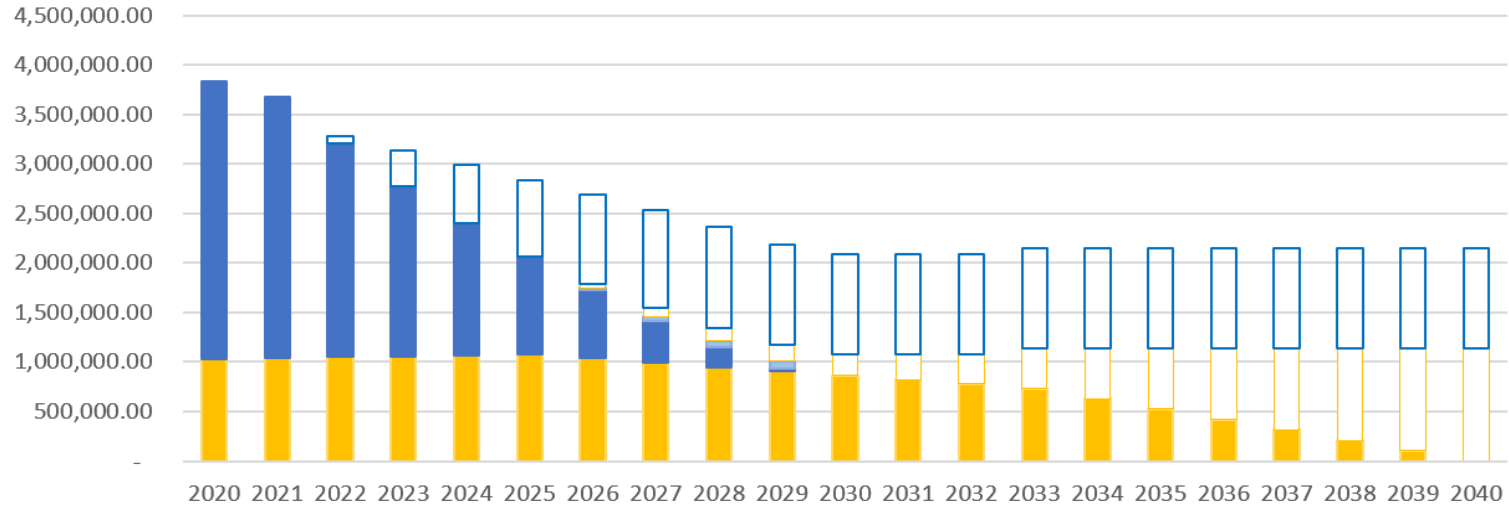
Highly Energy  
Efficient

Renewable  
Energy

Demand  
Flexible

All-Electric

# Goal of the Task Force



- Avoided Carbon Emissions due to Energy Efficiency and Solar
 □ Avoided Gas Emissions due to Electrification
- Additional Electricity Carbon Emissions due to Electrification
 ■ Electricity Carbon Emissions
- Natural Gas Carbon Emissions

# Why Renewable Heating and Cooling?

Improves racial equity and the quality of life for all Denver residents through:

- Improved safety and public health
- Lower exposure to indoor and outdoor air pollutants
- Providing access to cooling
- Creating clean energy job opportunities
- Stabilizing long term utility costs

Electrification can be cost effective. Renewable natural gas is up to four times more expensive than electrification

# The transition to renewable heating and cooling is possible today

- Heat pumps are 200-300% efficient
- Heat pumps provide heating and cooling
- Like your refrigerator, heat pumps use electricity to move heat.



# Space Heating Typologies

70% of Commercial and Multifamily buildings have one of these typologies:

- Typology 1: Gas furnaces or split system air conditioners with gas furnaces. (18% commercial)
- Typology 2: Rooftop air conditioning units with gas furnaces. (37% commercial)
- Typology 3: Packaged terminal air conditioning unit with gas furnaces. (3%)
- Typology 4: Boiler and chiller with fan coil units or variable air volume distribution. (12%)

# Water Heating Typologies

- Typology 1: Individual system with tank. (96% of single family and multi-family residences)
- Typology 2: Central system with tank. (84% of commercial space)
- Typology 3: Gas point of use system. (39% of commercial space)

# Initial Community Engagement on Policy Options

July 19<sup>th</sup>- July 30<sup>th</sup>



# Purpose and Target Audience

- Build initial community **awareness** about the Task Force's work and proposed policies.
- Collect **input** on policy options to shape final Task Force recommendations.

# Proposed Approach

## City Proposed Role

- 2 public **webinars** (1 technical, 1 less technical)
- Open **survey** July 19<sup>th</sup>-July 30<sup>th</sup>
- **Promote** webinars and surveys through:
  - CASR newsletters (~10k people) and CPD lists
  - Human Rights and Community Partnerships (HRCP) Commissions (African American, American Indian, Asian American Pacific Islander, Latino Commission, People with Disabilities, etc)
- Develop **materials** to support Task Force members in offering custom briefings as desired

## Task Force Proposed Role

- **Promote** webinars/surveys
- **Convene** discussions and townhalls among constituencies as desired
- Review and **incorporate** input
- *What else would you need?*