

Office of Climate Action, Sustainability, and Resiliency

Climate Mitigation Goals: BIZ Committee

11/6/24 | 1:30pm

**Elizabeth Babcock, Chief Sustainability
Officer and Executive Director of CASR**



CASR Mission

CASR Mission per Ordinance

“Act with urgency to proactively mitigate climate change by advancing **science-based strategies** to reduce greenhouse gas emissions on a scale and timeline that align with the recommendations from the Intergovernmental Panel on Climate Change”



Goals

DENVER'S CLIMATE COMMITMENTS



City Wide

Reduce 100% of greenhouse gas emissions by 2040

Reduce 65% of greenhouse gas emissions by 2030 from 2019 baseline



Buildings and Homes

New Buildings are zero emissions by 2030

Existing Buildings are zero emissions by 2040



Transportation

50% of commuters walk, bike, take transit, carpool or telework by 2030

30% of registered vehicles in Denver will be electric by 2030



Waste

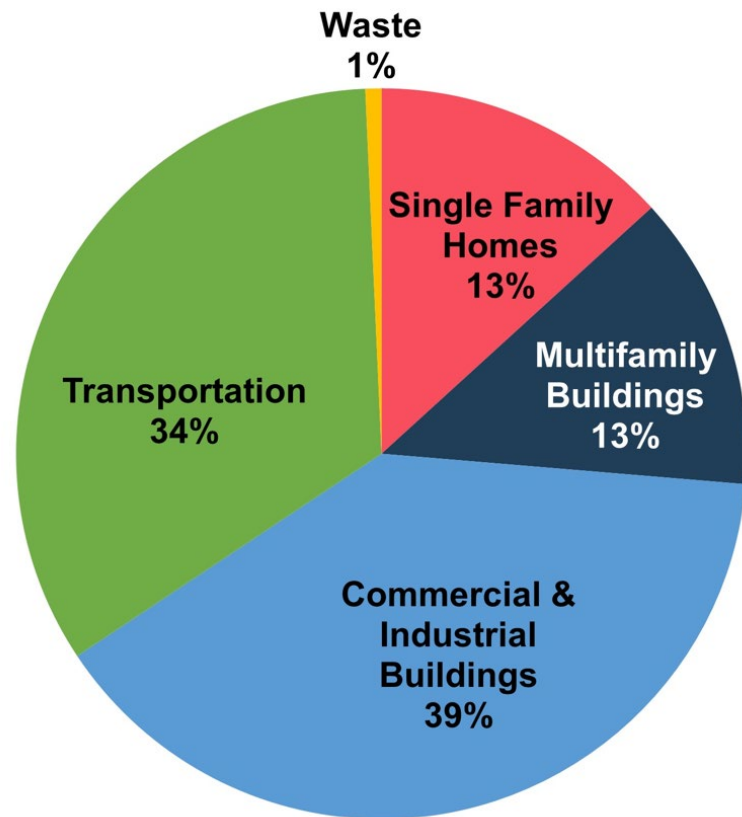
Divert 50% of solid waste from landfills by 2027 and 70% by 2032



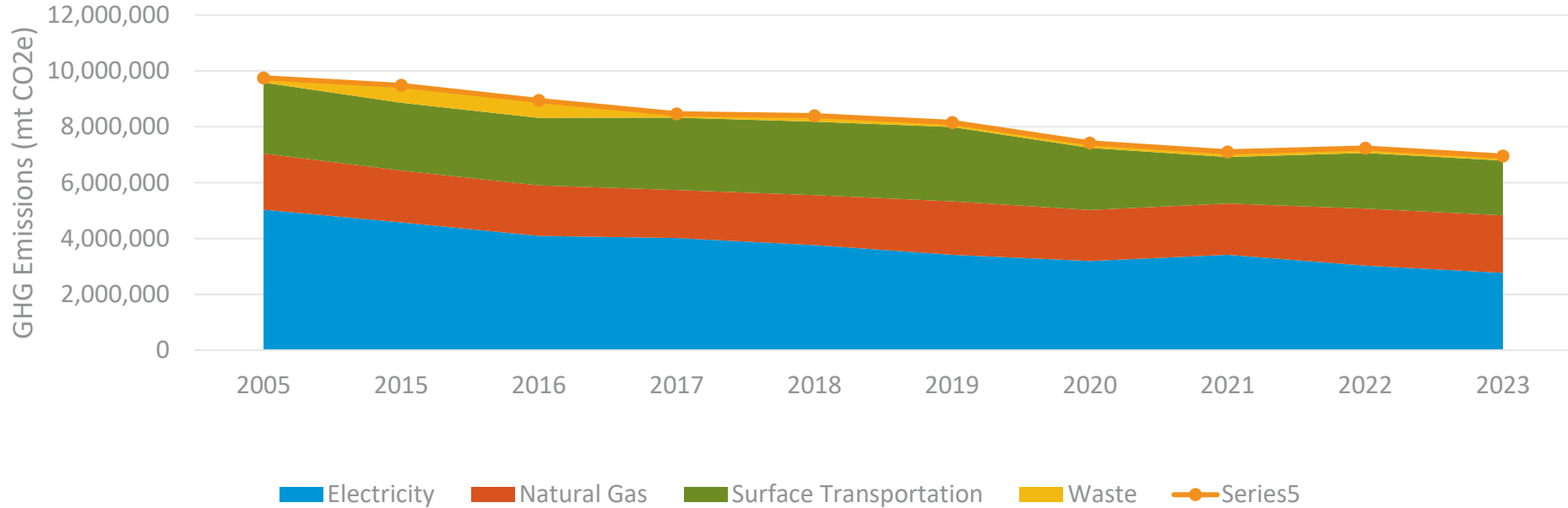
Data

Denver's 2023 core GHG emissions

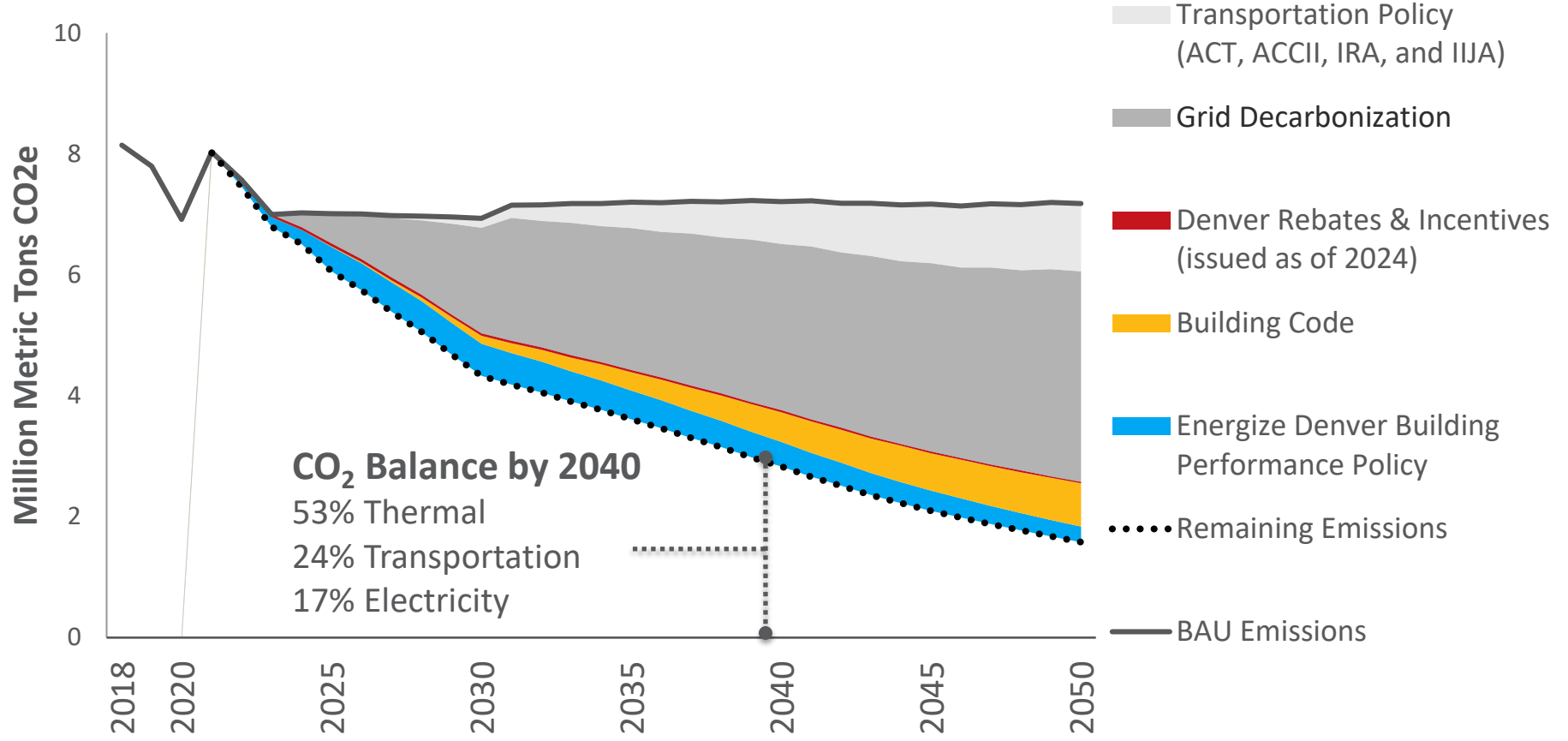
- Gas and diesel used in vehicles are responsible for 34% of Denver's GHG emissions. **Mode shift (bike, walk, transit)** and **fuel switching (electrification, other tech)** are the strategies in this sector.
- Energy use in buildings and homes accounts for 65% of Denver's GHG emissions. **Electrification** and **efficiency** are the strategies in this sector.



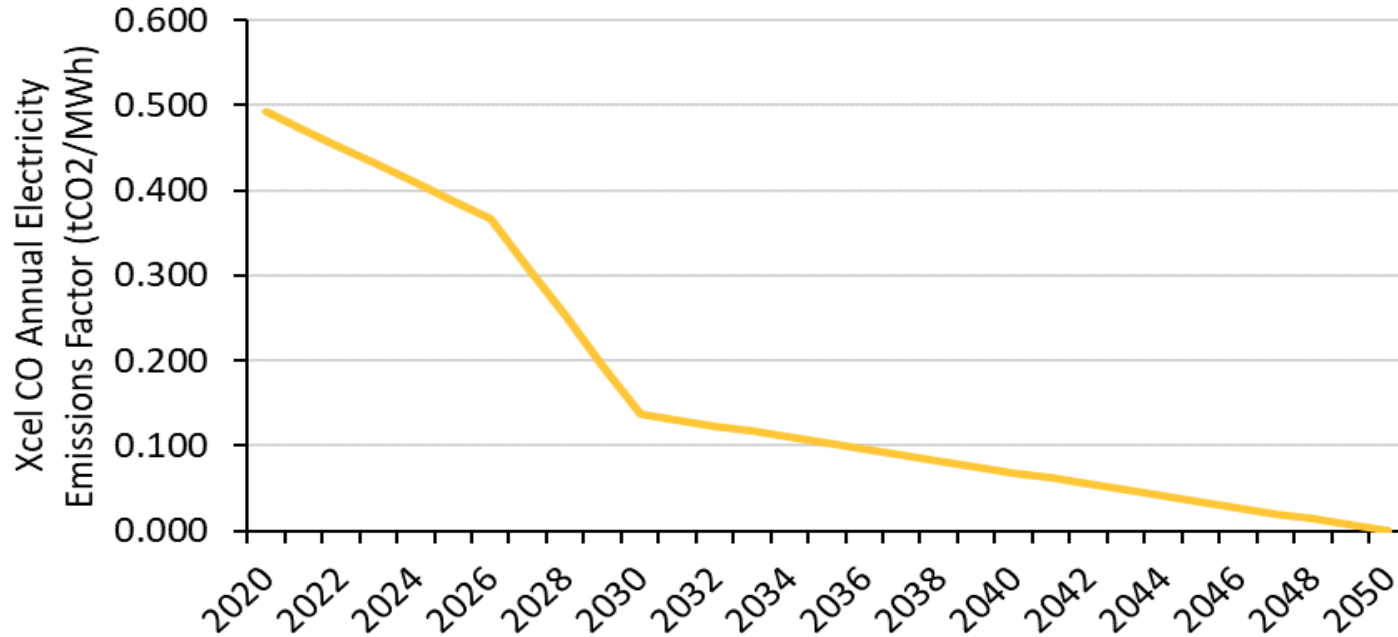
Emissions (mtCO₂e) by Sector and Source Over Time



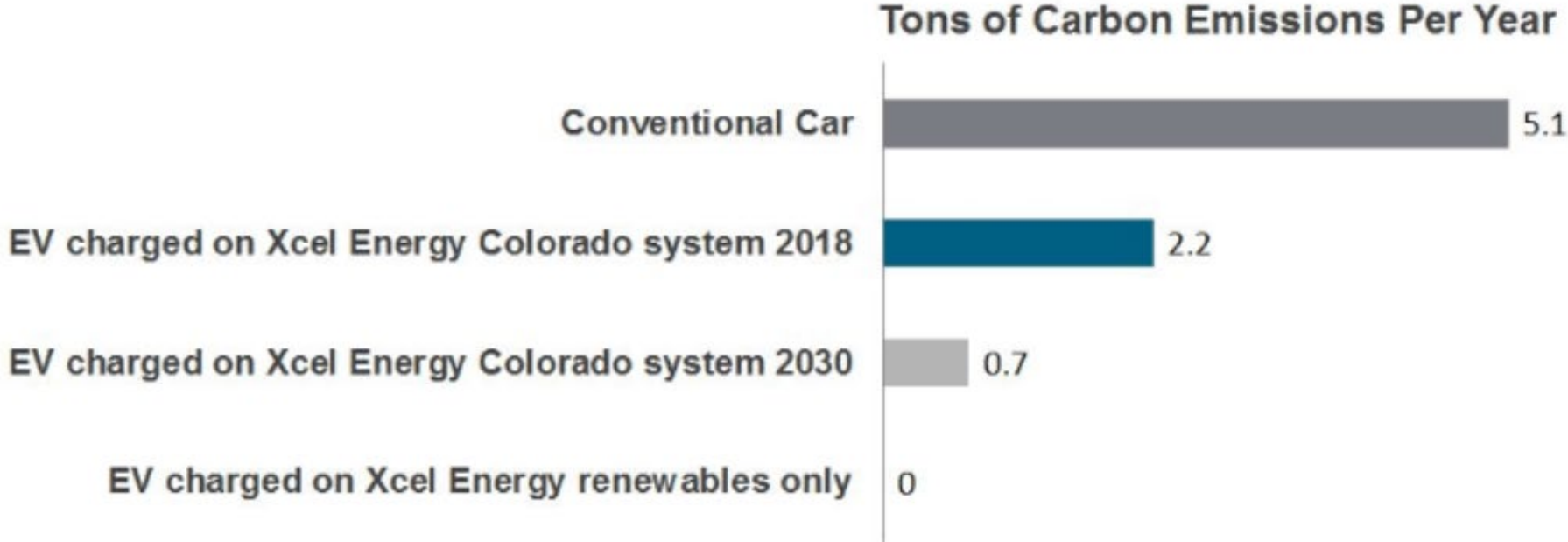
Denver Climate Action Interventions and Policy Impacts (so far)



Zero Emission Electricity is Coming



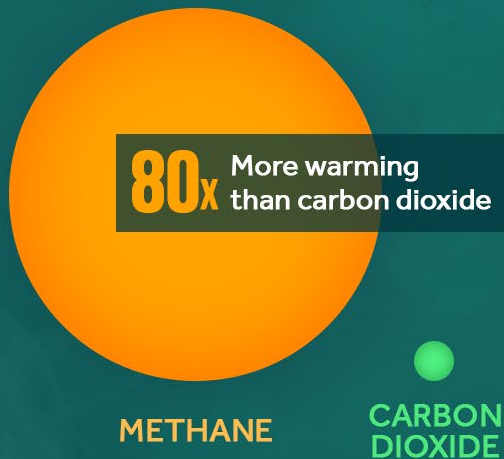
Driving electric is clean today, even cleaner in the future



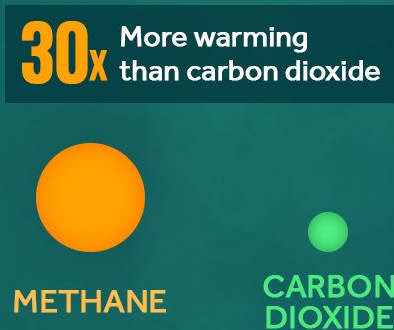
Source: U.S. Environmental Protection Agency and Xcel Energy

WARMING POWER OF METHANE

20-YEAR PERIOD



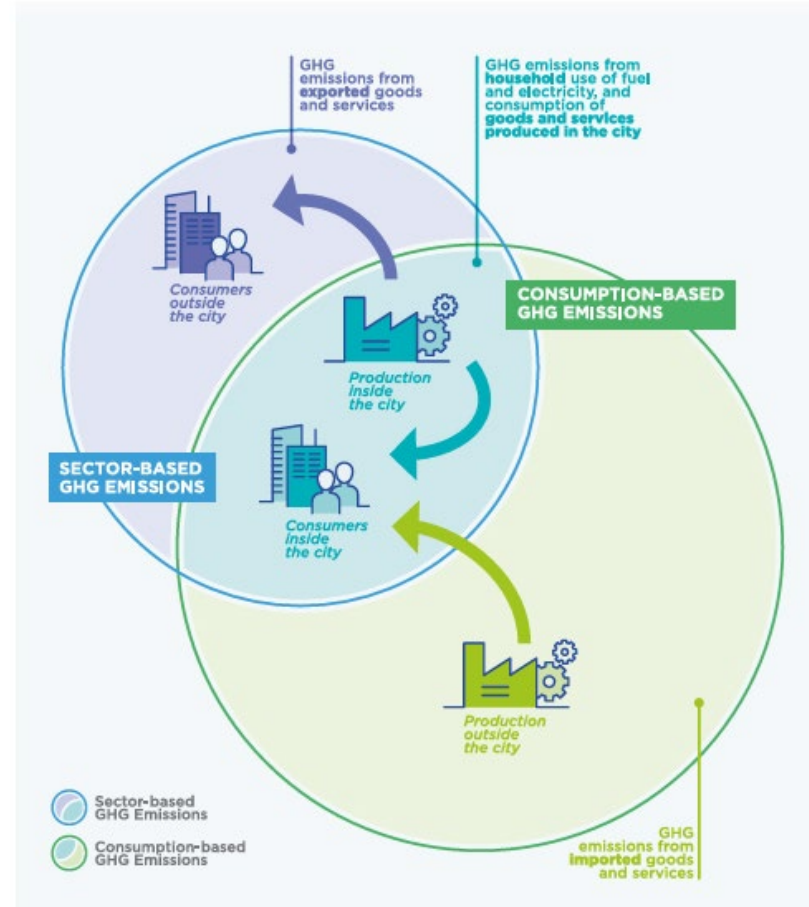
100-YEAR PERIOD



Global warming potential of methane for 20-year and 100-year time periods.
Source: IPCC AR6

Consumption emissions

- GHG emissions from imported goods and services
- Includes infrastructure, machinery, textiles, food etc.
- Source: Consumption based GHG emissions of C40 cities [report](#)





Strategies

Key Strategies for Building Decarbonization

Electrification and efficiency key strategies for achieving zero carbon buildings

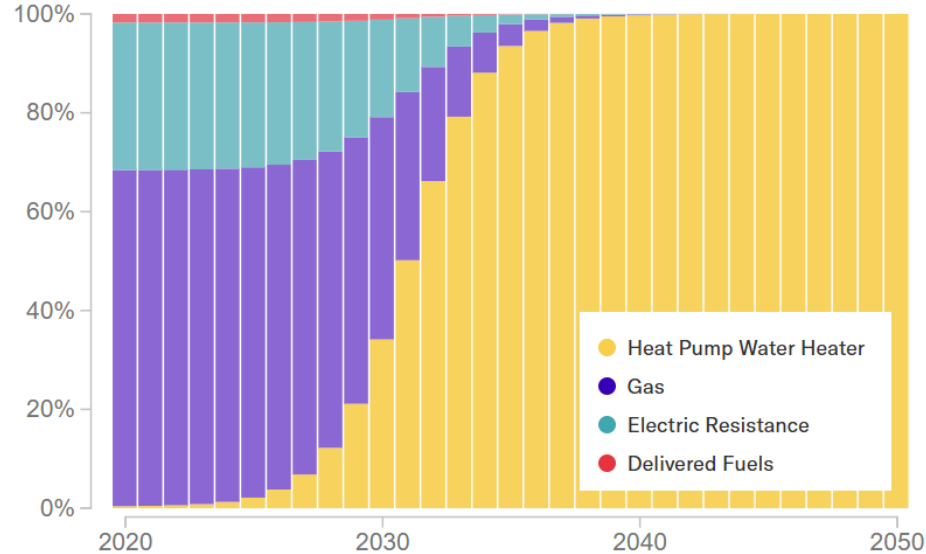


climateactiontracker.org

New report: Decarbonising Buildings - Feb 2022

Denver residential water heater sales needed to achieve climate goals

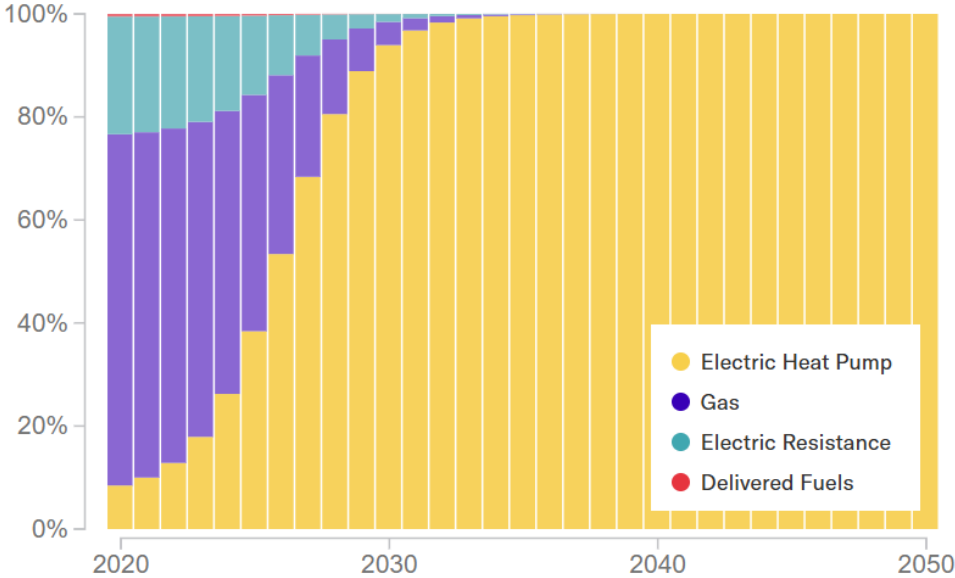
New water heater sales by fuel type



Source: Rewiring America

Denver residential heating system sales needed to achieve climate goals

New space heating system sales by fuel type



Source: Rewiring America

Most respondents (60%) prefer a home in which all or most major appliances are powered by electricity

If you had a choice, which of the following would you prefer to live in (assuming costs and other features are the same?)

Refused

31%

A home in which all major appliances are powered by electricity (stove, heating system, water heater, etc.)

29%

A home in which all major appliances are powered by electricity but which has a gas stove for cooking (heating system, water heater, etc.)

21%

A home in which all major appliances are powered by natural gas, propane, or oil (stove, heating system, water heater, etc.)

13%

No preference

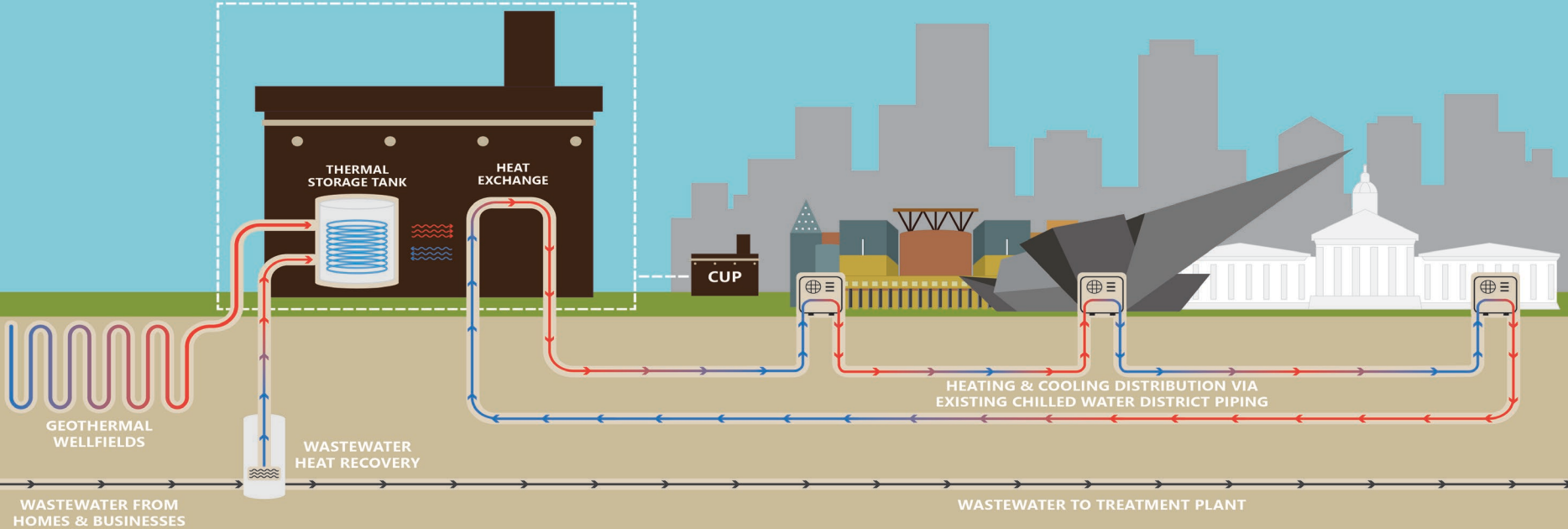
5

Don't know

DISTRICT ENERGY SYSTEM

HEATING AND COOLING USING MULTIPLE SOURCES OF THERMAL ENERGY – WASTEWATER & GEOTHERMAL

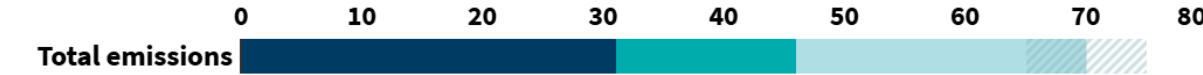
CENTRAL UTILITY PLANT (CUP)
ENLARGED VIEW





Better land use


Carbon Pollution Avoided in 2033

(Millions of tons CO₂e per year)



 Direct reductions from reduced driving (i.e. less electricity used or gasoline burned)

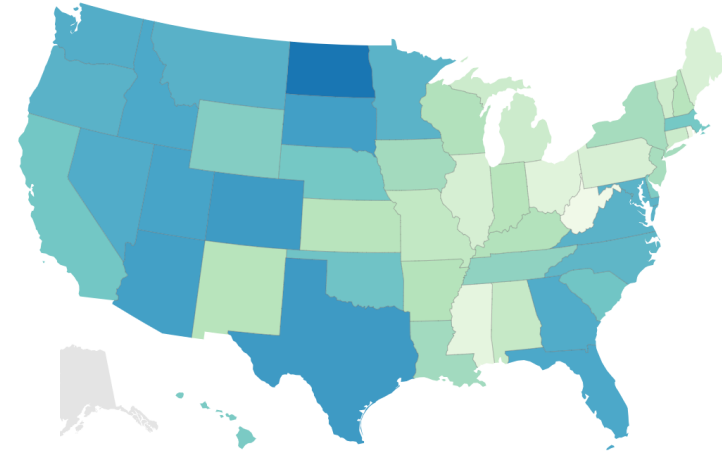
 Indirect reductions from vehicle lifecycle pollution (vehicle manufacturing-related emissions and upstream oil emissions)

 Non-transportation sector pollution avoidance

Potential per capita carbon pollution avoided in 2033 from land use reform

kg CO₂e/person/year

18.6 811.5



Greenways, streets for people, mixed use, TOD, vibrant spaces

Greenway Network Partnership

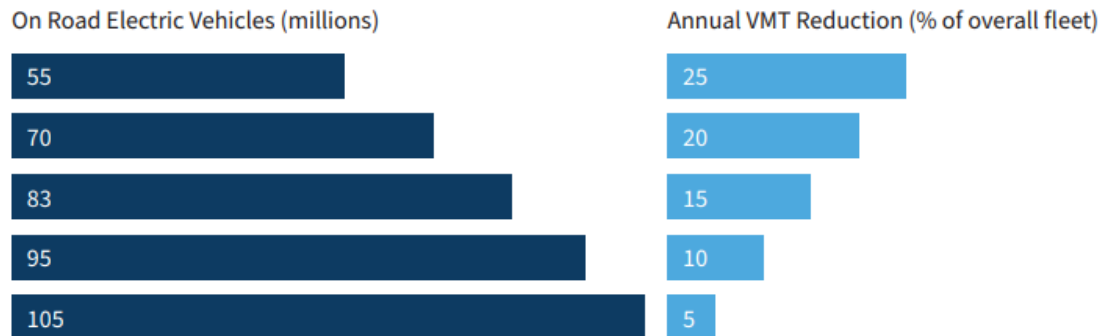


Wynkoop and other Opportunities



Relationship between EV Adoption and VMT

Various VMT Reduction and EV Adoption Scenarios That Would Achieve US Transportation Emissions Reduction Goals



Note: This chart illustrates the relationship between vehicle electrification and VMT reduction needed to reach the transportation sector direct emissions target. Considering indirect emissions sources such as vehicle production would enhance the benefits of VMT reduction beyond those shown here.

RMI Graphic. Data: RMI

Zero Waste Strategies

- CASR has [incentives](#) for eliminating single use service ware and replacing with reusables at events and restaurants
- We launched a [Reuse Business Directory](#)



Unprecedented investments and incentives

- Xcel Energy:
 - Clean Heat Plan 2024-27: \$440M (+70% of the budget to electrification)
 - Energy Efficiency 2024-26: \$580M (Includes \$80 million for electrification)
 - Transportation 2024-26: \$264M (effectively all EV Charging)
- Federal Programs:
 - \$328M in EPA Grants to DRCOG and CEO
 - Inflation Reduction Act rebates, tax credits and direct pay
- Denver:
 - ~\$20M in local incentives in 2025, plus technical assistance