

DOCKETED

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Building Decarbonization in Colorado

Colorado Energy Office
May 2021



COLORADO
Energy Office

About the Colorado Energy Office (CEO)



Mission

Reduce greenhouse gas emissions and consumer energy costs by advancing clean energy, energy efficiency and zero emission vehicles to benefit all Coloradans.



Vision

A prosperous, clean energy future for Colorado.



Major Pieces of Colorado's Climate Legislation

Establish GHG inventory with 2005 baseline

Reduce GHG emissions 26% by 2025, 50% by 2030, and 90% by 2050

Grant broad authority to air regulators to reduce GHG emissions

Creates regulatory path for electric utilities to meet 80% GHG reduction by 2030

Requires annual tracking and reporting through CDPHE



Colorado's Climate Equity Principles

Promote Equitable
Representation

Measure Economic
Impacts

Build
Resilience

Prioritize
Public Health

Prioritize
Equitable Benefits

Work Together
For Solutions



Colorado's Emissions Sources



2005 Largest Emissions Sources

1. Electric power
2. Transportation
3. Oil & Gas
4. Buildings

2020 Largest Emissions Sources

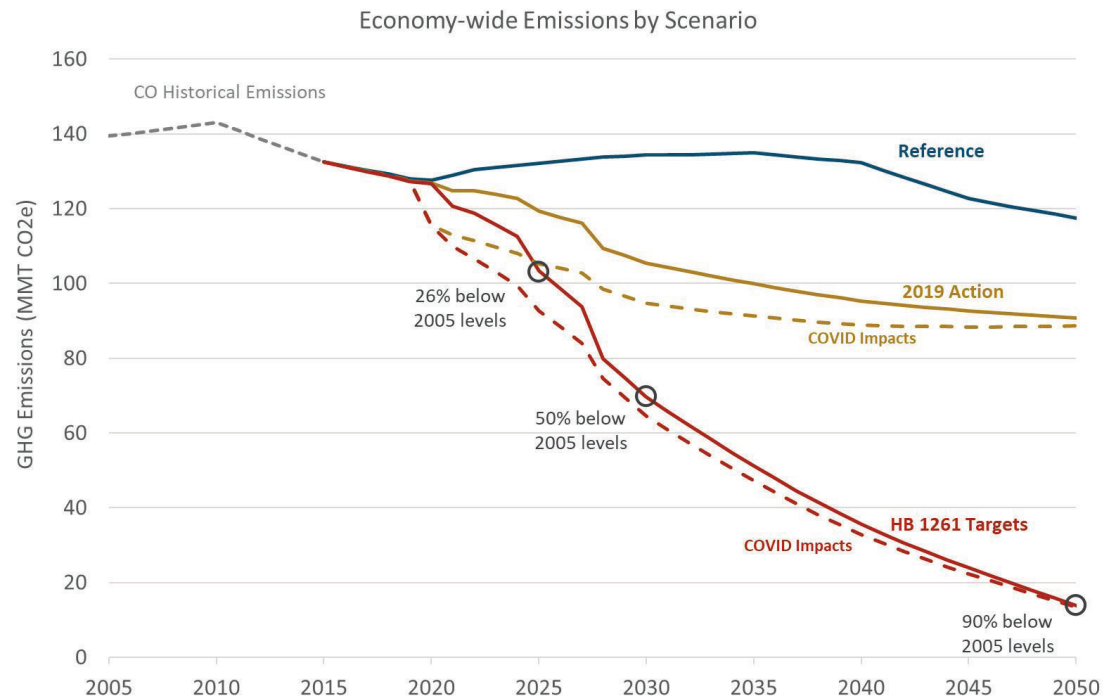
1. Transportation
2. Electric power
3. Oil & Gas
4. Buildings



Colorado's GHG Pollution Over Time

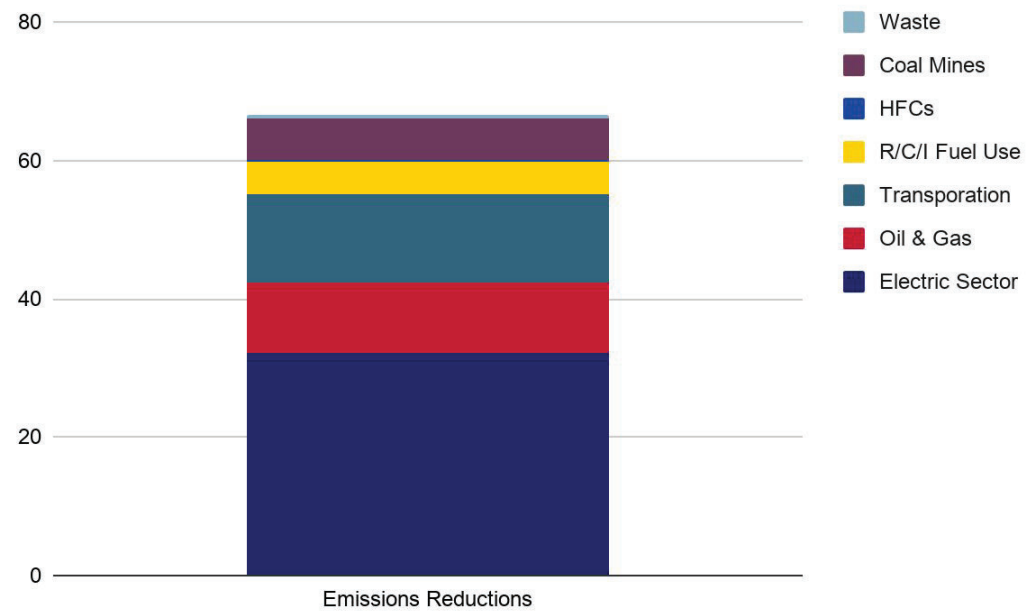
SIGNIFICANT PROGRESS UNDERWAY & MORE ACTION NECESSARY

- As a result of the state's actions to date, *we are well on the way to meeting* the level of emission reductions to meet the 2025 and 2030 goals.
- The near term action plan is designed to achieve the 2025 and 2030 targets through sector specific strategies on electricity, transportation, oil and gas, buildings, industry, and methane reduction



Achieving Colorado's Climate Goals

- **Continue the swift transition away from coal and towards renewables**
- Achieve deep reductions in methane emissions from the oil and gas industry
- Accelerate the transition to electric cars, trucks and buses
- Change transportation planning and infrastructure to reduce driving
- **Increase building efficiency and electrification**
- Reduce methane emissions from coal mines, landfills, waste water, and agriculture
- **Address equity issues in design**



Clean Energy Progress in Colorado

6 utilities that operate 99% of the fossil power plants have committed to reduce emissions by at least 80% by 2030

Xcel Energy

- Reduce GHG 85% by 2030
- 80% RE by 2030
- Retire Hayden 1 by 2027, Hayden 2 by 2028, Comanche 3 by 2040
- Convert Pawnee to gas 2028
- 3,900 MW renewables

Holy Cross Energy

- 100% carbon free electricity by 2030
- Filing a Clean Energy Plan
- 100 MW new wind
- 35 MW new solar
- 25 MW solar + storage
- 5 MW additional hydro

Black Hills Electric

- Filing a Clean Energy Plan
- Reduce GHG 80% by 2030
- 70% emission reduction by 2023 with 200 MW solar project.

Colorado Springs Utilities

- Filing a Clean Energy Plan
- Reduce GHG 80% by 2030
- 32% renewable energy by 2030
- Close all coal plants by 2030

Platte River Power Authority

- Filing a Clean Energy Plan
- Reduce GHG 90% by 2030 levels
- Close Rawhide coal plant by 2030
- Add 400 MW of renewables

Tri-State G&T

- Reduce in-state GHG 90% by 2030. Reduce total GHG 80% by 2030
- Close Colorado plants by 2030
- Preferred plan adds 900 MW of wind, 900 MW of solar, 200 MW of battery storage



Beneficial Electrification

BENEFICIAL ELECTRIFICATION IN COLORADO

Market Barriers and Policy Recommendations

FINAL REPORT

prepared for

COLORADO ENERGY OFFICE

July 2020

TABLE 4-1 CUMULATIVE IMPACTS FROM BENEFICIAL ELECTRIFICATION

Potential Scenario	NATURAL GAS SALES		PROPANE SALES		2030 NET CO ₂ e REDUCTION ³⁰
	2025 Reduction	2030 Reduction	2025 Reduction	2030 Reduction	Cumulative Short Tons
Technical Potential	24%	47%	24%	49%	31,147,459
Economic Potential	13%	31%	24%	48%	20,797,877
High Electrification	1.6%	6.2%	2.9%	9.7%	3,499,843
Moderate Electrification	1.1%	3.3%	2.1%	5.3%	2,085,318



Roadmap Near Term Actions: Building Fuel Use

- Establish GHG reduction targets for gas utilities
- Modernize and expand gas utility energy efficiency programs
- Improve building efficiency through benchmarking and performance standards
- Require regulated utilities to file plans for building electrification
- Expand access to financing programs for building retrofits

*Reduces
pollution by
~2.5 million
tons below
2005 by 2030*



Benchmarking & Performance Legislation



- Initially buildings over 50,000 sq/ft
- 1 million metric tons GHG reduction by 2030
- ~\$450 million in bill savings
- Air Commission may reduce building size threshold in future rulemakings

Building Electrification Legislation

- Requires PUC plan filings
- Set goals for all cost effective electrification including social cost of carbon and methane in cost effectiveness tests
- Annual 1.1 million tons of CO₂e reductions
- 340,000 high efficiency heat pumps and heat pump water heaters



Clean Heat Legislation



- 22% reduction by gas utilities by 2030 from 2015 baseline
- Allows DSM, electrification, hydrogen, and recovered methane resources
- Requires Air Quality Control Commission and PUC rulemakings
- Allows fuel switching



Colorado Short Term Gas Infrastructure Planning

- Defined as 5 years or less
- Completed every 5 years in conjunction with annual reporting and CPCN requirements
- Goal is to connect near-term, identified investments to state policy goals with:
 - Strategies to reduce infrastructure investments and revenue requirements including those being actively pursued
 - Net book value of the current system
 - Estimated annual capacity additions and resulting net book value
 - Forecasts of gas demand and projected emissions by customer class
 - Cost of gas delivered to customers and estimated resulting bill
 - Use or delivery of alternative gaseous fuels
 - Impacted and lower-income community considerations



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