

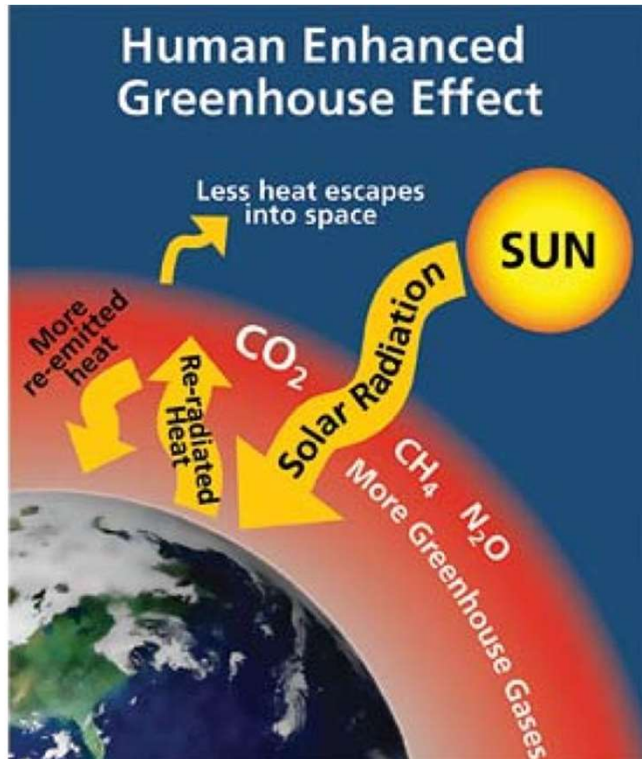
COLORADO'S CLEAN ENERGY TRANSITION

Will Toor, CEO Executive Director
SEP National Forum
September 28, 2022



COLORADO
Energy Office

CLIMATE CHANGE IN COLORADO



↑ 2.5° F in the last 50 years

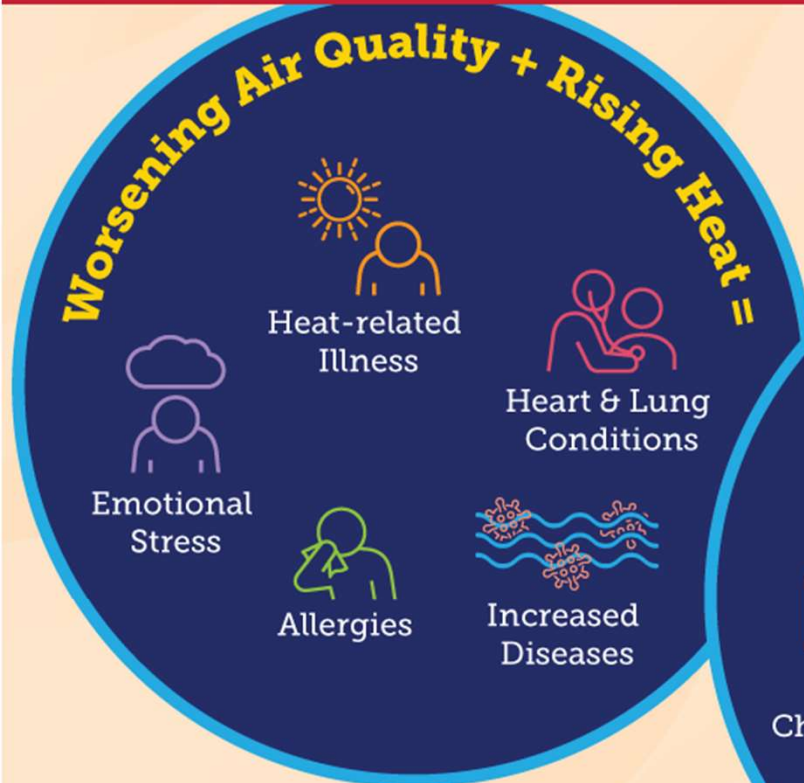
↑ 2° F in the last 30 years

Additional ↑ 2.5° F estimated by 2050



Warming affects water quantity & quality, energy development, transportation, public health, tourism, and agriculture

Health and Climate Change



Heat is perhaps the most devastating climate-related public health impact in the country.

Deaths due to hot spells in summer exceed deaths due to all other weather events in the United States combined including lightning, rainstorms/floods, hurricanes, & tornados.

COLORADO GREENHOUSE GAS (GHG) INVENTORY

Identifies the largest sources of GHG emissions to target reductions in important sectors

2005

- 1. Electric Power
- 2. Transportation
- 3. Oil & Gas
- 4. Industry
- 5. Buildings

2020

- 1. Transportation
- 2. Electric Power
- 3. Oil & Gas
- 4. Industry
- 5. Buildings

2020 CO GHG Emissions (MMT CO₂e, AR5 100-yr GWP)

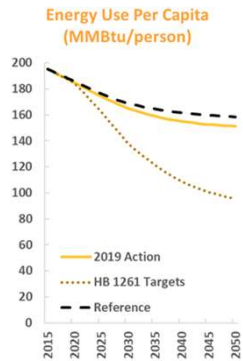


OPPORTUNITIES TO REDUCE EMISSIONS

ENERGY USE



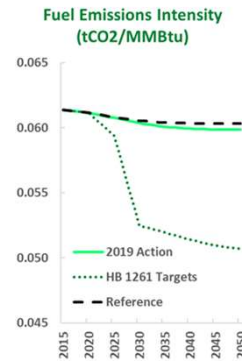
Energy Efficiency



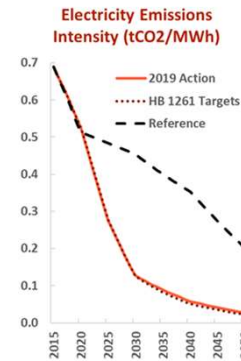
Electrification



Fuels



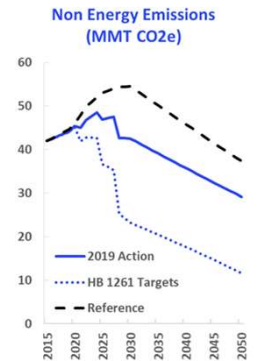
Electricity



OTHER



Non-Combustion



EXAMPLE WAYS SEP SUPPORTS CEO'S WORK

ENERGY USE



Energy Efficiency

- Energy Performance Contracting program
- Building Codes work
- Workforce Development



Electrification

- Beneficial Electrification League
- BE pilot projects

ENERGY SUPPLY



Fuels

- Funding for updates to Energy Assurance Plan
- Natural Gas Futures study



Electricity

- Regulatory work at Public Utilities Commission (direct staff salary)
- Transmission coordination and resiliency work

OTHER



Non-Combustion

- Agricultural Energy Efficiency Program
- Support for Environmental Justice (direct staff salary)

LEGISLATIVE APPROACH: EMISSIONS REDUCTION

Based on the GHG Inventory, sector-based goals and legislative opportunities were identified. Focus on market transformation, not just regulation. Legislation to achieve sector-based goals has included:



Regulations & Requirements



Infrastructure Investments



Rebates & Incentives



Just & Equitable Transition Programs

COLORADO MAJOR CLIMATE LEGISLATION

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

Grant broad authority to air regulators to address GHG emissions

PUC pathway for electric utilities to meet/exceed 80% GHG reduction by 2030

Require 60% reduction from oil/gas and 20% from industry by 2030

Require gas utilities to achieve 22% reduction by 2020 through clean heat plans

REDUCING EMISSIONS: ELECTRIC POWER

Utilities operating >99% of fossil fuel power plants in CO committed to meet at least an 80% GHG emissions reduction by 2030; required to submit Clean Energy Plan to Public Utilities Commission.

Xcel Energy

- Reduces GHG 85% by 2030
- Closes all coal plants 2031
- Adds 2,600 MW of new renewable resources

Holy Cross Energy

- Reduces GHG 99% by 2030
- 100 MW new wind, 35 MW new solar, 5 MW additional hydro, 25 Mw solar + storage

Black Hills Electric

- Reduces GHG 90% by 2030
- 70% emission reduction by 2023 with 200 MW solar project.

Colorado Springs

- Reduces GHG 80% by 2030
- 32% renewable energy by 2030
- Closes all coal plants by 2030

Platte River Power

- Reduces GHG 87% by 2030
- Close all coal plants by 2030
- Add 400 MW of renewables

Tri-State G&T

- Reduces GHGs 84% by 2030
- Close all CO coal plants by 2030
- Add 900 MW wind, 900 MW solar, 200 MW battery storage

REDUCING EMISSIONS: TRANSPORTATION

GOAL: Reduce GHG Pollution by ~12.7 million metric tons (MMT) by 2030

Light-Duty Vehicle Electrification: Goal of 940,000 EVs on the road by 2030

EV Tax Credits

EV education & awareness

EV coaching services

Infrastructure investments

Fleet Electrification

Other transportation emissions reduction strategies:

E-Bike Rebates to reduce # of short distance car trips

Clean Trucks & Buses strategy

Land-use incentives → reduced vehicle miles traveled

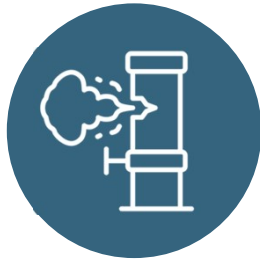
Expansion of public transportation

REDUCING EMISSIONS: OIL & GAS

GOAL: Reduce GHG Pollution by ~12 million metric tons (MMT) (60%) by 2030



Emissions
limits



Leak detection
& repair
requirements



Retirement &
plugging of
old wells



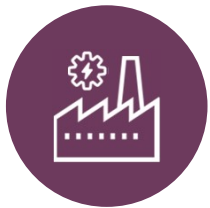
Venting and
flaring gas
capture



Tracking &
reporting
requirements

REDUCING EMISSIONS: INDUSTRY

GOAL: Reduce GHG Pollution across industrial sector 20% from 2015 baseline by 2030



Industrial
Strategic
Energy
Management
Support



Replacement
of fuel-
combustion
equipment
w/ electric
equivalent



Carbon
reduction
targets and
biogas
requirements
for gas
utilities



Emissions
audits & Best
Available
Control
Technology
requirements



Pollution
reduction
requirements
for industrial
facilities
(GEMM
Rulemakings)



Grants for
air pollutant
emission
reduction
projects
(Clean Air
Program)



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REDUCING EMISSIONS: BUILDINGS

GOAL: Reduce GHG pollution from building energy use 2.5 MMT by 2030



Benchmarking & Building performance standards for large commercial, public, and multifamily buildings



Energy performance contracting for public buildings (e.g., schools, local governments)



Financing for energy efficiency, renewable energy, & building electrification retrofits (residential & commercial)



Investment in geothermal heating/cooling & development of geothermal electricity generation

REDUCING EMISSIONS: BUILDINGS (cont'd)

GOAL: Reduce GHG pollution from building energy use 2.5 MMT by 2030



Require gas distribution utilities to submit clean heat plans outlining proposal to reduce GHG emission levels by 4% in 2025 and 22% in 2030 below 2015 levels



Require regulated electric utilities to develop programs that incentivize residential, commercial, and industrial utility customers to undertake voluntary beneficial electrification projects



Develop & adopt building codes to prepare new homes/buildings for EVs, solar, and electric appliances, and minimize emissions from new and renovated homes and buildings (based on 2021 or 2024 IECC)

REDUCING EMISSIONS: OTHER



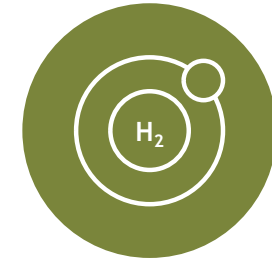
Carbon Capture, Utilization, & Storage

Conduct research and develop recommendations to inform strategy and regulations



Agricultural Energy Efficiency & Soil Health

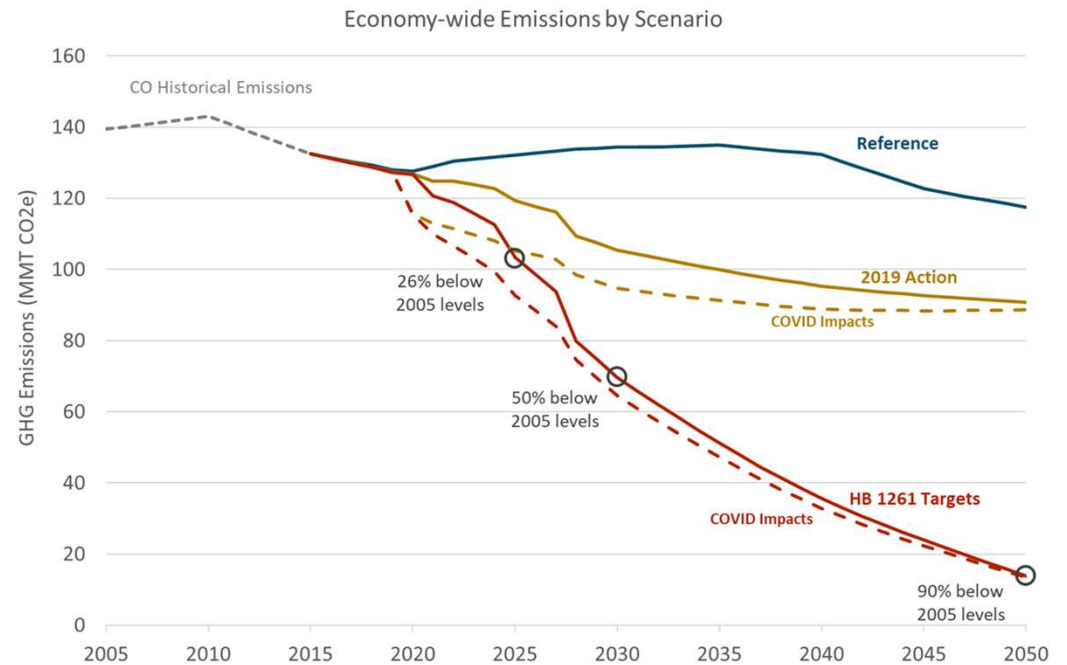
Promote renewable energy, energy efficiency, and soil health in Colorado's agricultural sector



Clean Hydrogen Energy Hub

Work with other western mountain states to develop and manage a regional clean Hydrogen Hub

COLORADO GHG POLLUTION OVER TIME



Additional strategies can advance co-benefits such as reducing local air pollution, generating economic growth, advancing environmental justice and equity.

Thank you & Questions?



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