COLORADO GREENHOUSE GAS POLLUTION REDUCTION ROADMAP

Background

Governor Jared Polis ran on a platform of achieving 100% renewable energy by 2040, combating climate change and reducing local air pollution. In 2019, he partnered with the Colorado General Assembly to pass 14 pieces of climate legislation, including House Bill-1261, the Climate Action Plan to Reduce Pollution, which established science-based targets of reducing statewide greenhouse gas (GHG) pollution 26% by 2025, 50% by 2030, and 90% by 2050 from 2005 levels. Governor Polis directed state agencies to develop a roadmap to achieving these goals with a whole-of-state effort, focusing particularly on the nearer term 2025 and 2030 targets. At the same time, state agencies have been actively working on multiple initiatives to reduce GHG pollution while simultaneously developing the Roadmap to guide future action.

The Roadmap lays out a set of near term actions the administration will take in 2021 and 2022 to meet our climate targets. Previous and ongoing work already has set the state on a trajectory to achieve half the emissions reductions needed to meet the 2025 and 2030 targets, and the Roadmap outlines the additional steps the state will take to achieve the targets.

Prior Actions

The Roadmap builds on actions that Colorado has already taken, or are currently underway, to reduce GHG Pollution:

Electricity

State law adopted in 2019 requires our largest utility, Xcel Energy, to adopt a clean energy plan that will reduce GHG pollution 80% by 2030, and incentivized other utilities to do the same. This framework has been remarkably successful; utilities representing 99% of generation in the state are now committed to 80% or greater reductions by 2030, largely by replacing expensive older coal plants with lower cost wind and solar. These commitments will reduce GHG pollution by more than 32 million tons by 2030. In addition, as coal mines close, the methane emissions from the mines go down, which will lead to another 7 million tons a year of reduced GHG pollution by 2030.

Xcel

- Filing Clean Energy Plan
- Reduce GHG 80% by 2030
- Retire Hayden 1 coal plant by 2027 and Hayden 2 coal plant by 2028

Holy Cross Electric

- Filing Clean Energy Plan
- 100% carbon free by 2030

Black Hills Electric

- Filing Clean Energy Plan
- Reduce GHG 80% by 2030
- 70% pollution reduce by 2023

Adding 200 MW solar

Colorado Springs Utility

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

Platte River Power Authority

-Filing Clean Energy Plan
-Reduce GHG 90% by 2030
-Close all coal plants by 2030
-Add 400 MW of renewables

Tri-State G&T

-Reduce in-state GHG 90% by 2030; reduce total GHG (including out of state) 80% by 2030
-Close all Colorado coal plants by 2030
-Preferred plan adds 900 MW wind, 900 MW solar, 200 MW storage

Transportation and Vehicles

The state adopted Low Emission Vehicle standards in 2018 and Zero Emission Vehicle standards in 2019. As older vehicles are replaced with more efficient and zero emission vehicles, modeling projects a 6-million-ton reduction in GHG pollution by 2030.

Oil & Gas

In 2014, Colorado became the first state in the nation to directly regulate methane from oil and gas operations. During that same 2014 rulemaking, Colorado developed a new leak detection and repair (LDAR) program using optical gas imaging technology, which has since formed the basis for federal LDAR requirements for the oil and gas industry.

In 2019, the Colorado General Assembly passed SB 19-181, which strengthened the state's commitment to regulating emissions from the oil and gas industry by creating a statutory requirement for the AQCC to obtain emissions data from oil and gas operators and to minimize emissions in the sector. The AQCC promulgated the first in a planned series of regulations in December 2019, which included a requirement for annual GHG emissions reporting from the sector. The AQCC promulgated further regulations in September 2020 to require monitoring at all new wells and tighten emissions requirements for pre-production activities. Regulations stemming from additional AQCC rulemakings are expected to result in lower leak rates and declining emissions from the sector.

In 2020, the Colorado Oil and Gas Conservation Commission promulgated its far-reaching Mission Change rulemaking to implement a large portion of SB 19-181. This rulemaking process shifted the focus of the regulations from fostering the industry to regulating it in the public interest and in a manner protective of public health, safety the environment and wildlife. Among other things, these Mission Change rules prohibit routine flaring and venting of methane gas, require reporting of cumulative emissions, and require plans for control.

Hydrofluorocarbons (HFCs)

In 2020, the state Air Quality Control Commission adopted rules requiring the phase-out of use of HFCs, a very potent GHG pollutant that is widely used in commercial refrigeration and air conditioning. In addition, at the end of 2020, Congress passed new HFC requirements that will further reduce HFC emissions in Colorado and the rest of the country.

Roadmap Modeling

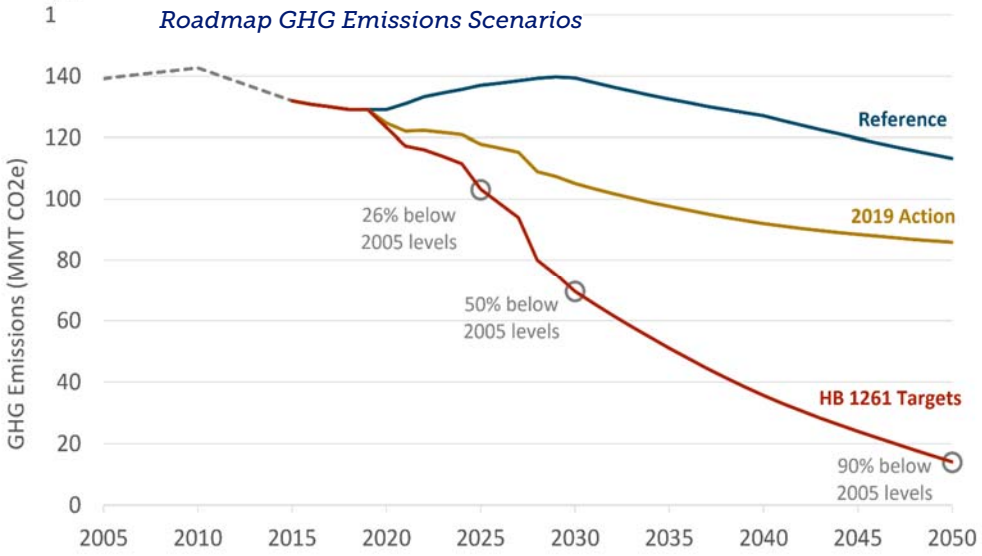
Colorado's largest source of GHG pollution are transportation, electricity generation, oil & gas development, and fuel use in residential, commercial, and industrial buildings. The Roadmap modeled three scenarios and presents a Near Term Action Plan that is projected to achieve the state's 2025 and 2030 targets.

Roadmap Scenarios

Reference Case -Modeled emission reduction based on all existing state policy prior to 2019.

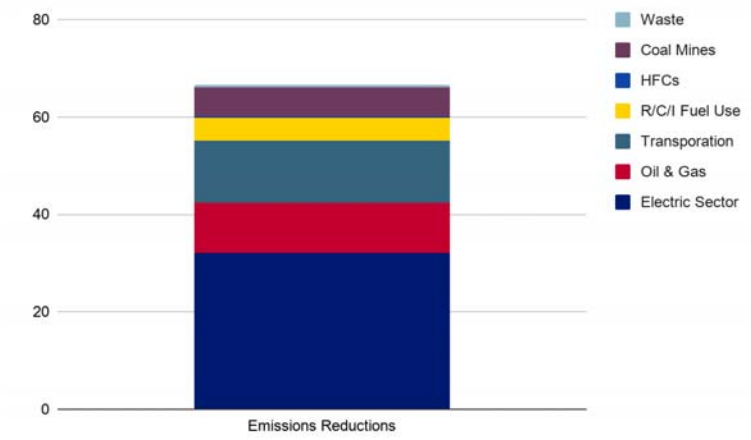
2019 Action Scenario - Modeled emission reduction based on prior state policy and legislative, administrative, and voluntary actions adopted in 2019.

1261 Action Scenario - Modeled an illustrative path Colorado could take to meet GHG reduction targets in HB19-1261.



Key steps to achieving 2030 targets

- Continue swift transition away from coal to renewable electricity
- Make deep reduction in methane pollution from oil & gas development
- Accelerate the shift to electric cars, trucks and buses
- Make changes to transportation planning and investment and land use planning to encourage alternatives to driving
- Increase building efficiency and electrification
- Reduce methane waste from landfills, waste water, and other sources



Colorado's Climate Equity Principles and Public Engagement

Through a year-long public process, in conjunction with consulting support and a technical advisory group, state agencies created a plan for near term actions that will meet Climate Action Plan goals. To ensure a just and equitable transition to a low carbon economy, Colorado also established the nation's first Office of Just Transition and created a Climate Equity Framework

Public Engagement

Public Listening Sessions
~600 participants

Email comments
More than 2200

Stakeholder meetings
More than 50

Multiple briefings and public comment opportunities at the
Air Quality Control Commission

Near Term Action Plan

The Roadmap identifies a set of actions the administration will pursue in 2021 and 2022, including regulatory action at the state Air Quality Control Commission and Public Utility Commission, legislation that will be proposed in the 2021 legislative session, and programmatic work and investments by state agencies. The following chart summarizes these actions, and the projected 2030 emissions reductions, totaling 70 million tons – which will achieve our 2030 targets. Details on each of these and other actions are in the full Roadmap.

Sector	Near Term Action	2005 GHG Pollution Baseline	Targeted 2030 GHG Pollution Reductions (million metric tons)	Percent Reduction from 2005 Baseline
Electricity	• Clean Energy Plans and coal plant retirements	40.28	32.3 mmt	80%
Transportation	• GHG pollution standards for transportation plans • Transportation demand requirements for large employers • Indirect source standards • Public investment in EV infrastructure and incentives • Clean truck strategy • Incentives for local land use decisions that reduce vehicle travel and pollution • Expand public transit, including Front Range Rail and NW Rail	30.17	12 mmt	40%
Residential, Commercial Industrial Fuel Use (Gas utilities)	• Energy efficiency requirements for gas utilities • Carbon reduction and biogas targets for gas utilities • Large commercial buildings energy use tracking and pollution standards • Adopt advanced building codes • Require regulated utilities to support beneficial electrification • Expand clean energy finance programs	24.65	4.7 mmt	19%
Oil and Gas	• AQCC methane rulemaking • COGCC rules to eliminate flaring, require minimizing emissions, and track preproduction and production air emissions.	20.17	12.2 mmt	60%
Natural and Working Lands (NWL)	• Comprehensive emissions inventory, NWL Strategic Plan		1.0 mmt	
Waste	• Reduce methane from coal mines, landfills, sewage treatment plants and AG • Improve recycling end markets and recycling and reuse		7.5 mmt	
Industrial Process Emissions	• Implement new federal law on HFC reduction (refrigerants, aerosols, etc.)		0.3 mmt	

Near Term Action by Venue and Timeline

The chart below shows actions planned over the next two years arranged by venue (e.g., regulatory agency or legislature) and by year the state anticipates the action being initiated (unless noted otherwise).

	Fall / Winter 2020	Spring 2021	Summer 2021	Fall 2021	Winter 2021	2022
Public Utilities Commission (PUC)	Tri-State electric resource plan Xcel Energy transportation electrification plan	Xcel Energy electric resource plan + clean energy plan Black Hills transportation electrification plan	Xcel renewable energy plan Black Hills Energy efficiency plan Black Hills Energy renewable energy plan			
Air Quality Control Commission (AQCC)	Regional haze rules Ozone Plan Oil and gas well monitoring rules Outreach on 2021 oil and gas rules	Regional haze rules phase 2 Stakeholder processes for transportation, industrial, oil and gas rules	Transportation emission rules (GHG standards for transportation plans, trip reduction plans) Industrial energy and emissions audits Rules	Greenhouse gas emission reduction progress evaluation	Oil and gas emission reduction rules Structures/building emission reduction rules	Next round, transportation emissions Rules
Colorado Oil and Gas Conservation Commission (COGCC)	Mission change rulemaking: 200 Series - general and record keeping; 300 Series - permitting process;	Rulemaking: 700 Series - financial assurance (bonding); Imposing permit fee; and requiring worker certification (these three topics complete mandatory SB 19-181 rulemakings).		Greenhouse gas emission reduction progress evaluation in coordination with CDPHE.		

	400 Series - operational practices; 500 Series - hearing process; 600 Series - safety (and residential setbacks); 800 Series - underground injection control wells; 900 Series - environmental & E&P waste management; and 1200 Series - wildlife (and riparian setback).					
Other State Agency Actions	Clean trucking strategy initiated Just transition plan finalized	Electric vehicle equity plan initiated Convene taskforce on Carbon Capture, Utilization and Storage (CCUS) Climate equity framework completed	Clean trucking technical analysis completed Begin smart land use stakeholder process and study	Natural and working lands task force pathways analysis completed	Draft natural and working lands strategic plan completed	Administrative and legislative action items from land use study

Legislation		Transportation • Fund infrastructure and incentives to transition to low and zero emissions cars, trucks and buses Buildings & Gas Utilities • Set carbon reduction targets for gas utilities • Set Biogas requirements for gas utilities • Require existing large commercial buildings to track energy use and make progress toward energy and pollution performance standards • Require regulated electric utilities to create programs that support beneficial electrification • Expand energy efficiency investments from gas utilities Governor's Proposed FY 21-22 Budget • Fund Clean Energy Finance - $40 M • Fund wildfire relief, mitigation and prevention - $78 M • Support local government investment in renewables and efficiency - $5 M • Create Climate Resilience Office at the CO Department of Agriculture • Build capacity of Colorado's Office of Just Transition			