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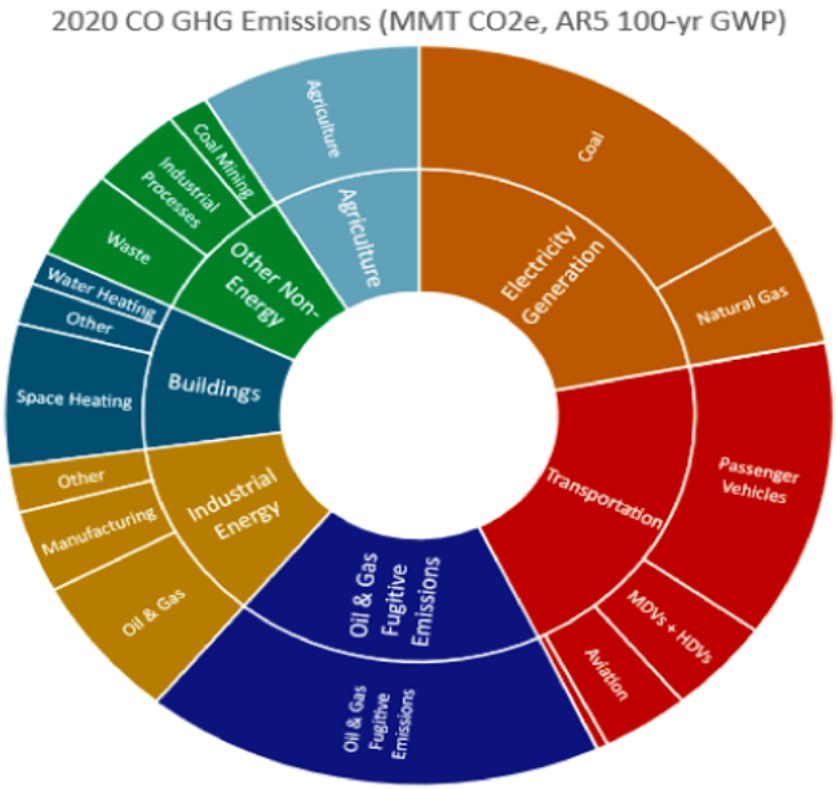
Climate Change in Colorado: Part 3 – State Initiatives

This is the third installment of a four-part series dealing with climate change in Colorado. The first in the series outlined federal policy established in President Biden's executive orders and federal legislation. The second article reviewed some of the most significant federal agencies' initiatives that implement federal policy. This third article reviews initiatives at the state level in Colorado.

Sources of Greenhouse Gas Emissions in Colorado and the 2023 Goals

The most significant sources of greenhouse gas (GHG) emissions in Colorado are transportation, electricity generation, oil and gas production, and fuel use in residential, commercial, and industrial spaces.



Updated Emission Reduction Goals – 100% Reduction by 2050

A year ago, on May 11, 2023, Colorado Governor Polis signed Senate Bill 23-016 that outlined a comprehensive program to address GHG emissions in the state. The bill, among other things that will be reviewed later in this article, set new goals for the reduction of GHG emissions compared to 2005 GHG pollution levels:

1. 65% reduction goal by 2035;
2. 75% reduction goal by 2040,
3. 90% reduction goal by 2045; and
4. 100% reduction goal by 2050.

16 Years of Advancing the Cause – Inventories and GHG Emission Goals

Sixteen years ago, in 2008, Governor Ritter in his Executive Order D 004-08 required the Colorado Department of Public Health & Environment (CDPHE) to report

estimates of greenhouse gas emission by sectors across the state.

In 2017, Governor Hickenlooper's Executive Order 2017-0015 directed the CDPHE to propose a state greenhouse gas reporting rule mirroring the then-current federal reporting rule at 40 CFR 98 with the goals of:

1. Reducing GHG emissions statewide by more than 26% below 2005 by 2025;
2. Reducing carbon dioxide emissions for the electricity sector by 25% below 2012 levels by 2025 and 35% below 2012 levels by 2030; and
3. Reducing electricity sales by 2% by 2020 through cost-effective energy efficiency measures.

In 2019, Senate Bill 19-096 required the Air Quality Control Division to publish updates to the statewide greenhouse gas inventory no less frequently than every two years. In addition, House Bill 19-1261 established the first statewide greenhouse gas reduction goals requiring progress reports to the legislature every odd-numbered year. Importantly, the legislation established the following statewide GHG emission reduction goals using a baseline of GHG emissions in 2005:

1. Reduce 2025 GHG emissions by at least 26%;
2. Reduce 2030 GHG emissions by at least 50%; and
3. 2050 GHG emissions by at least 90%.

In 2023, Governor Polis signed the most significant legislation to date that outlines a comprehensive program to address carbon emissions in the state. Senate Bill 23-016 , as referenced above, set new GHG emission reductions goals including a 100% reduction goal for 2050. To get there, among other things too many to list in this article; the legislation updates the powers and duties of the Colorado energy office; requires that the air quality control commission establish by rule a fee per ton of GHG based on GHG emissions; gives the oil and gas conservation commission (now renamed the Energy and Carbon Management Commission per Senate Bill 23-285) authority over Class VI injection wells used for sequestration of GHG; establishes new 2,000 foot setbacks for oil and gas wells from a residence, school, or commercial building; and authorizes local governments, as part of their land-use authority, to regulate the surface impacts of wells, including the regulation of the location and siting of wells and the imposition of fees to cover emergency response capabilities arising from potential carbon dioxide releases from wells.

A lengthy summary of the bill outlines the multitude of statewide and local initiatives to reach the net-zero emissions goal for 2050 established by the United Nations. *See* the UN's Net Zero Coalition website.

Climate Action Website

To meet the legislature's 2030 goals, the state's climate action website lists the following key steps to reach the 2030 goals:

1. Transition away from coal to renewable electricity;
2. Reductions in methane pollution from oil and gas development;
3. Reduce methane waste from landfills, wastewater, and other sources:
4. Accelerated shift to electric cars, trucks, and buses; and
5. Make changes to investment, transportation, and land use planning to encourage driving alternatives.

The Greenhouse Gas Pollution Reduction Roadmap 2.0

Colorado is viewed as a leader on climate action. In February 2024 Governor Polis released the administration's updated Colorado Greenhouse Gas Pollution Reduction Roadmap 2.0 that summarized some of the state's accomplishments. Colorado is now:

1. Fifth in the nation in market share of electric vehicles;
2. Seventh in installed wind capacity; and
3. Twelfth in installed solar capacity.

Since 2019, electricity from wind energy has grown more than 55% and solar has more than doubled. Thus, renewable energy generation in Colorado has grown from 22% in 2019 to 37%. By 2029, the state's goal is to exceed 80% renewable energy on the grid, and by 2031, the state will have closed its last coal-fired power plant.

The Governor summarized the administration's goals going forward:

> This second Greenhouse Gas Pollution Reduction Roadmap now lays out an ambitious but achievable set of high-impact policy priorities over the remainder of my term as governor, and also lays the foundation for deploying the

unprecedented federal investment in Colorado's future.

Roadmap 2.0 has two major objectives:

> First, it updates and revises modeling from the initial Roadmap to estimate Colorado's emissions trajectory and evaluate progress toward the State's statutory emission reduction targets. Second, it lays out an ambitious set of new Near Term Actions for the State to prioritize in 2024, 2025, and 2026, and estimates the additional emission reductions, and other benefits, that are likely to result from these actions.

Statutory and Regulatory Initiatives So Far

The Climate Homepage. This article highlights some of the statewide initiatives that have resulted from multiple executive orders and statutes that have been passed by the legislature. However, the best rabbit hole to drill down into is the state's climate website.

The Climate Change Program. The CDPHE created the Climate Change Program in December 2019 in an effort to reduce greenhouse gas emissions by (1) conducting a statewide greenhouse gas inventory, (2) developing regulations to reduce greenhouse gas emissions, and (3) gathering input from stakeholders to address climate change statewide.

An essential resource to track virtually all of the statewide initiatives, the Climate Change Program website provides links to a massive database covering legislation, agency regulations, and greenhouse gas reporting requirements and inventories. Some of the initiatives one can access on the website are listed here.

Inventories and Emission Reductions Reporting

Using facility-reported data and other data sources, each updated Greenhouse Gas Inventory Report includes past, recent, and projected greenhouse gas emissions for the following sectors:

- Agriculture;
- Coal Mining and Abandoned Mines;

- Electric Power;
- Industrial Processes and Product Uses;
- Land Use and Forestry;
- Natural Gas and Oil Systems;
- Residential, Commercial, and Industrial (RCI) Fuel Use;
- Transportation; and
- Waste Management.

The Greenhouse Gas Metrics Dashboard provides an easy-to-understand view of critical metrics that impact greenhouse gas emissions in Colorado in sectors or categories that include electricity, fossil fuels, residential-commercial-industrial fuel use, transportation, and agriculture.

Air Quality – The Key to the Fix

The Air Quality Control Commission is perhaps the most significant agency that drives the climate change regulatory world in Colorado. The commission's website provides access to its regulations including the following.

- Colorado Advanced Clean Cars (Regulation 20)
- Greenhouse Gas Emissions and Energy Management for the Manufacturing Sector (GEMM) Phase 2 (Regulation 27)
- Building Performance Standards (Regulation 28)
- Greenhouse Gas Reporting (Regulation 22)
- Greenhouse Gas Emissions and Energy Management for the Manufacturing Sector (GEMM) Phase 1 (Regulation 27)
- Hydrofluorocarbons (HFC) Phase-Out (Regulation 22)
- Recovered Methane (Regulation 22)
- Clean Trucks (Regulation 20)
- Greenhouse Gas Intensity Verification for Upstream Oil and Gas (Regulation 7)

The New Energy and Carbon Management Commission

One year ago, on May 22, 2023, Governor Polis signed into law Senate Bill 23-285 that, with an effective date of July 1, 2023, (1) changed the name of the commission formerly known as the Colorado Oil and Gas Conservation Commission to the

Energy and Carbon Management Commission (ECMC) and (2) significantly expanded the ECMC's regulatory authority to include regulation of a broader scope of energy and carbon management areas beyond oil and gas.

The ECMC's website describes its mission as the regulation and development and production of:

> Oil and gas, deep geothermal resources, the capture and sequestration of carbon, and the underground storage of natural gas in a manner that protects public health, safety, welfare, the environment, and wildlife resources.

Geothermal Resources. Colorado has several areas with higher-than-normal temperatures in the subsurface. These resources are mostly undeveloped but have significant future potential for energy development and direct heat use. Before passage of SB 23-285, prior to constructing a well to explore for or produce geothermal resources, a landowner / operator had to obtain a permit from the state engineer. Section 8 of the bill bifurcates regulation of different types of geothermal operations between the ECMC and the state engineer.

Specifically, the ECMC now has exclusive authority to regulate deep geothermal operations for the exploration for or production of an allocated geothermal resource, or a geothermal resource that is deeper than 2,500 feet below the surface. However, the state engineer retains the exclusive authority to regulate operations that are considered shallow geothermal operations.

The Colorado Geological Survey's 2012 report clarified that geothermal resources in Colorado are separately classified as water on private land and as mineral on state and federally administered lands. In addition, where classified as mineral, only the heat is classified as mineral, regardless of the land administration. Thus, before passage of SB 23-285, water used to extract the heat was administered exclusively by the Colorado State Engineer through the Division of Water Resources of the Department of Natural Resources and applicable regulations required permits for all well drilling associated with geothermal exploration and development.

The ECMC prepared draft rules related to deep geothermal operations in October 2023 and will be holding rulemaking hearings in June or July 2024.

Sequestration of Carbon Dioxide – Geologic Storage Operations. On May 13, 2024, the legislature approved House Bill 24-1346 that expands the authority of the ECMC to include the regulation of the injection and underground sequestration of carbon dioxide in pore space (geologic storage operations). Although the draft legislation had embraced requirements for so-called "direct air capture facilities," the final bill is limited to regulation of "geologic storage units" for carbon dioxide.

The legislation followed on the heels of the report titled Creating Colorado's Carbon Sequestration Framework that responded to Governor Polis's directive to the former Colorado Oil and Gas Conservation Commission to prepare a legislative proposal to address the legal changes necessary to achieve a comprehensive regulatory regime and create sequestration opportunities in Colorado.

Among other things, HB 24-1346:

1. Authorizes the ECMC to approve the formation of, and to establish a plan for operations for, a unit of one or more geologic storage resources (geologic storage unit) if reasonably necessary to effectuate a geologic storage project. The order approving establishment of the geologic storage unit will only be effective if the plan has been approved by those persons that collectively own at least 75% of the geologic storage resources included in the geologic storage unit area;
2. Requires the evaluation of cumulative impacts to address impacts from all operations regulated by the ECMC; and
3. Expands energy and carbon management regulation to include geologic storage operations including: (a) enforcement and civil penalty procedures; (b) use of the energy and carbon management cash fund by the ECMC; (c) mitigation of adverse environmental impacts; and (d) state agency and local government authority over oil and gas development.

The Sequestration Estate. House Bill 24-1346 also establishes that ownership of a portion of a pore space necessary for geologic storage (sequestration estate) is vested in the owner of the overlying surface estate if the sequestration estate has not been separately severed, conveyed, or reserved. Furthermore, except in certain circumstances, any conveyance of the ownership of an overlying surface estate also conveys the grantor's ownership of any sequestration estate. And finally, a

conveyance of the ownership of a mineral estate does not convey the grantor's ownership in the sequestration estate unless the conveyance instrument provides for the conveyance.

Accounting Procedures for Geologic Storage Operations. The bill also requires the CDPHE to develop carbon dioxide accounting procedures for geologic storage operations. The ECMC must compile relevant data to support the carbon dioxide accounting procedures and work collaboratively with the CDPHE in implementing the carbon dioxide accounting procedures.

Local Government Assistance – Technical Review Board. Finally, the bill also allows a local government to request that the director of the ECMC appoint a technical review board to assist a local government in analyzing and answering any technical questions regarding the local government's land use regulations.

Oil and Gas Development – Dueling Legislative Proposals in 2024 – The Grand Bargain

Much of the impetus for this series stems from the myriad pieces of draft legislation related to oil and gas development that the author had been monitoring in the 2024 legislative session in Colorado. I need not summarize the battles among the stakeholders as that has already been expertly accomplished by Sam Brasch in his multiple articles at *CPR News*. Brasch describes the Grand Bargain in his April 29, 2024, article stating in part:

> Gov. Jared Polis on [April 29, 2024,] announced a new truce between the oil and gas industry and environmental groups, ending the prospect of multiple ballot measures and legislative proposals related to fossil fuel production. It also proposes turning drilling into a major source of new public transit funding.
>
> Democratic legislative leaders said they plan to kill a set of air quality legislation meant to reduce ozone and rein in industry air pollution. Instead, a new pair of bills will codify agency rules that cut smog-forming compounds from drilling operations into state law and establish a new fee for oil and gas production.
>
> The agreement also ends a prospective ballot war between the oil and gas industry and environmental groups.

Occidental Petroleum, Civitas Resources, and Chevron Energy were part of the agreement along with eight environmental groups: Earthjustice, Conservation Colorado, the Southwest Energy Efficiency Project, GreenLatinos, CoPIRG, Earthworks, Western Resource Advocates, and Healthy Air and Water Colorado. *See also* Chase Woodruff's *Colorado Newsline* article stating:

> For the third time in a decade, the two sides in Colorado's long-running oil and gas wars have mutually agreed to withdraw competing sets of initiatives slated for the November ballot, avoiding what Colorado Gov. Jared Polis called "costly, risky and divisive" fights this November over whether the state should ban restrictions on natural gas, make it easier to sue drillers for health and safety violations and more.

Reducing NOx Emissions. In place of the battling proposals, the legislature passed Senate Bill 24-229. The 22-page bill may indeed be a trial lawyer's dream and an oil and gas operator's nightmare.

Significantly, the bill sets targets to reduce the emission of oxides of nitrogen (NOx) in certain areas of the state by 50% by 2030 relative to 2017 NOx emission levels. The bill also:

1. Repeals limitations on temporary restraining orders and preliminary injunctions;
2. Authorizes a district attorney or the attorney general to seek injunctive relief to reduce the potential for a recurrence of a violation;
3. Clarifies that the air quality control division has authority to impose civil penalties for violations of requirements related to toxic air contaminants, fence line, and community-based monitoring; and
4. If enacted in House Bill 24-1338, the division may also impose penalties related to emissions monitoring for the state's only petroleum refinery in Commerce City.

Suncor Refinery. Although not yet signed by the Governor, House Bill 24-1338 directs the CDPHE to implement the recommendations of the state's Environmental Justice Action Task Force that are designed to provide increased oversight of the Suncor petroleum refinery in Commerce City, and authorizes the creation of a "rapid response" inspection team to address air quality complaints.

Increased Fees on Oil and Gas Production. The legislature also passed Senate Bill 24-230 that, beginning in July 2025, levies new fees on oil and gas production. The per-unit fees will equate to a surcharge of about 0.5% per barrel of crude oil and will raise between $100 million and $175 million each year. With the goal of offsetting the environmental impacts of oil and gas development, the legislation requires that 80% of the revenue be allocated to public transit projects with the rest going to Colorado Parks and Wildlife for land acquisition and habitat projects.

Public Utilities Commission's Clean Heat Plans

In 2021, the Colorado legislature, through Senate Bill 21-264 directed the Public Utilities Commission (PUC) to create rules that would require gas distribution utilities (*i.e.,* utilities that procure and distribute gas to retail customers such as residents and local businesses) to reduce greenhouse gas emissions by 4% by 2025 and by 22% by 2030, from a 2015 baseline.

To show that they are meeting these targets, gas utilities must now file Clean Heat Plans (CHPs) with the PUC starting in 2023. A CHP may include a mix of supply-side resources which replace traditional gas and demand-side resources which reduce the gas customer's use. The clean heat resources, include:

- Energy efficiency programs, which allow customers to add more insulation at a reduced cost;
- Recovered methane, including the gas that is captured at landfills and water purification facilities;
- Green hydrogen, where water is converted to hydrogen through electrolysis using renewable energy; and
- Beneficial electrification, which would allow customers to switch from a gas furnace to an electric heat pump for heating, or from a gas to an electric stove for cooking at a reduced cost.

The Transportation GHG Standard – Rapid Deployment of Electric Vehicles

The Colorado Transportation Commission (CDOT) has approved a new standard to reduce greenhouse gas emissions from the transportation sector, improve air quality, reduce smog, and provide more travel options. *See also* the CDOT Fact Sheet

. The standard requires CDOT and the state's five metropolitan planning organizations to determine the total greenhouse emissions expected from future transportation projects and reduce emissions by set amounts.

The standard is one of several transportation strategies identified in the state's Greenhouse Gas Pollution Reduction Roadmap and is a key requirement established in the 2021 state transportation funding bill (SB21-260). The standard is designed to build on the state's effort to rapidly deploy electric vehicles by encouraging a future transportation system that improves transit, biking and walking options.

Low-Carbon Hydrogen – The Regional Clean Energy Hub

To evaluate hydrogen's role in achieving Colorado's energy and climate goals, the Colorado Energy Office CEO released a report in October 2021 titled Opportunities for Low-Carbon Hydrogen in Colorado: A Roadmap. The roadmap recommends actions for the deployment of low-carbon hydrogen in Colorado over the next 15 years, among them investigating regional hydrogen hubs.

The roadmap suggests that Colorado has a "unique opportunity to develop and scale-up hydrogen in the region." To pursue those opportunities, four states – Colorado, New Mexico, Utah, and Wyoming – signed a Memorandum of Understanding to develop and manage a regional clean hydrogen hub – the Western Inter-States Hydrogen Hub (WISHH). WISHH will cooperate to compete for a portion of the $8 billion allocated in the 2021 federal Infrastructure Investment and Jobs Act towards four or more regional hydrogen hubs.

In April 2023, the WISHH announced that it had submitted its application to the U.S. Department of Energy (DOE) for a $1.25 billion grant to advance the hydrogen economy in Colorado, New Mexico, Utah, and Wyoming. The proposal identifies eight projects across the four states, with at least one project in each state.

To satisfy the engineers who are reading this series, I am delighted to mention that, on March 13, 2024, as part of the hydrogen grant program, the Colorado School of Mines received $3.0 million from the DOE for a project focusing on improving the efficiency of tubular-format cells for proton-conducting solid oxide electrolyzers. *See* the DOE's announcement.

Local Initiatives

Part 4 of this series will focus on local initiatives addressing climate change in Colorado. That necessarily will include a more thorough description of the activities of the Colorado Energy Office, including a discussion of grant funds to expand solar energy; funds to expand the state's electric vehicle charging network; development of automated permitting platforms to streamline the permitting process to allow consumers to get their solar systems installed much faster; the Colorado Weatherization Assistance Program; the launch in Colorado of the nation's first statewide electric bicycle tax credit; and much more.

This post was drafted by John L. Watson, an attorney in the Denver, Colorado office of Spencer Fane LLP. For more information, visit www.spencerfane.com

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