Colorado’s Efforts to Reduce GHG Emissions

February 15, 2018 Briefing for the Air Quality Control Commission

Chris Colclasure and Mike Silverstein, CDPHE
Governor's Executive Order
Supporting Colorado's
Clean Energy Transition (signed 7/11/17)

Declarations:

• Reduce GHGs statewide by more than 26% by 2025 from 2005 levels.

• A 25% reduction in \( \text{CO}_2 \) emissions from the electricity sector by 2025 from 2012 levels.

• A 35% reduction in \( \text{CO}_2 \) emissions from the electricity sector by 2030 from 2012 levels.

• Achieve electricity savings of 2% of total electricity sales per year by 2020 through cost-effective energy efficiency.
Directives impacting AQCC/APCD:

• Develop a statewide electric vehicle plan by January 1, 2018 to build out key charging corridors.

• Develop a GHG reporting rule to propose to the AQCC by December 30, 2018.

Updated Colorado Climate Plan released in February.

• APCD to continue to consider and implement measures that improve air quality and that also have CO$_2$ and methane reduction co-benefits.

• APCD to support Colorado Electric Vehicle Plan.

• APCD to continue to implement, and evaluate additional, cost-effective methane reducing measures for the oil and gas industry.

http://cwcb.state.co.us/environment/climate-change/Pages/main.aspx
Climate Resources for Local Governments

To comply with the Governor’s Executive Order:

• Collaborate and consult with local governments.

• **Colorado Communities Symposium - January 31 - February 2, 2018.**
  
  • CDPHE worked to organize and conduct information sharing event with local governments and communities.

  • CDPHE helped to find speakers on clean transit, resilience, health, and community action.

https://www.coloradocommunities.org/
States committed to the goal of reducing greenhouse gas emissions consistent with the Paris Agreement.

- Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels.

- Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production.

- Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

- Aim to reach “global peaking of greenhouse gas emissions as soon as possible.”
CDPHE participating in workgroups to:

• Improve inventories.

• Consider measures that reduce “superpollutant” emissions.
  • Methane
  • Black carbon
  • HFCs

https://www.usclimatealliance.org/
Climate Leadership Conference
January 31 - February 2, 2018

Governor Hickenlooper and CDPHE’s Martha Rudolph to speak on climate resilience and GHG emission reduction efforts.

https://www.climateleadershipconference.org/
MOU for Regional Electric Vehicle Plan for the West (Colorado signed 10/4/17)

- Provides for EV infrastructure on interstate highways in Colorado, Idaho, Montana, Nevada, New Mexico, Utah & Wyoming.

- To provide a framework for creating an Intermountain West EV corridor.

  - Seamlessly drive an electric vehicle across the Signatory State's major transportation corridors.

  - Initial corridors in Colorado are the interstate highways.

VW Trust

- **Colorado’s initial allocation from the trust is $68.7 million.**

- **Trust effective date 10/2/17; Colorado filed beneficiary certifications 11/17/17.**

- **Trustee designated Colorado as a beneficiary on 1/30/18; CDPHE will submit Beneficiary Mitigation Plan (BMP).**

- **May request funds 30 days after submitting BMP.**

- **Colorado expects to begin receiving funds by summer 2018.**

https://www.colorado.gov/pacific/cdphe/VW
VW Trust

Colorado Priorities:

• Maximize the trust’s air quality benefits in Colorado.

• Use trust funds to catalyze the adoption of zero emission and alternative fuel vehicles.

• Distribute settlement funds quickly, within approximately five years through a transparent public process.

• Set incentives at an appropriate level that attracts a high level of participation.

• Devote 15% of trust funds to light duty zero emission vehicle infrastructure.
VW Trust

Colorado Priorities:

• Provide appropriate funding for:

  • Mass transit projects including transit electrification.

  • Eligible projects within areas disproportionately impacted by the VW diesel vehicle emissions, including the Denver/North Front Range ozone nonattainment area and the Pikes Peak region.

  • Emission reductions in environmental justice communities.

  • Projects involving eligible public and private fleets, with greater incentives for fleets owned by government agencies.

  • Non-road diesel engines, including engines eligible for DERA funding.
VW Trust

Colorado’s proposed mitigation actions:

• $10.3 Million – ZEV supply equipment.
• $18 Million – Alternative fuel/electric transit buses.
• $18 Million – Alternative fuel/electric trucks and buses.
• $5 Million – DERA option.
• Remainder – Flexible fund and implementation costs.
• CDOT, CEO & RAQC will administer most projects through existing structures.

<table>
<thead>
<tr>
<th>Program</th>
<th>VOC (tons/year)</th>
<th>NOx (tons/year)</th>
<th>PM10 (tons/year)</th>
<th>PM2.5 (tons/year)</th>
<th>GHG (tons/year)</th>
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<tr>
<td>1. Vehicle Replacement</td>
<td>10-12</td>
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<td>6-7</td>
<td>5-6</td>
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<td>2. Electric Vehicle Charging Stations</td>
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<td>3. Transit Vehicle Replacement</td>
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<td>18-34</td>
<td>1-2</td>
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<td>133-175</td>
<td>8-10</td>
<td>7-9</td>
<td>41,320-57,600</td>
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Colorado Efforts to Reduce GHG Emissions
Colorado Electric Vehicle Plan

January 2018 – Colorado Energy Office publishes final plan.

- **EV Fast-Charging Corridors:**
  - Build out Colorado’s EV fast-charging infrastructure.
  - Support interstate EV travel.
  - Develop partnerships that support investment in EV fast-charging and utilization.
  - Update signage policies.

- **Accelerating EV Adoption:**
  - Increase EVs in the light duty sector.
  - Increase the number of electric transit vehicles.
  - Increase workplace charging.
  - Develop strategies and partnerships for future investment in EV infrastructure on private property.
  - Accelerate purchase of state fleet EVs and charging stations.

- **Goals:** 940,000 light duty EVs & 500 transit EVs by 2030.

AQCC’s Evaluation of California’s Advanced Clean Cars Standards and Zero Emission Vehicle (ZEV) Mandate

• Current light-duty vehicle greenhouse gas standards for model years 2021-2025 are under reconsideration by EPA and NHTSA.

• CDPHE provided public comment supporting retention of these GHG emissions standards (10/5/17 letter to EPA & NHTSA).

• The Division briefed the AQCC in November 2017 on the dis-benefits of a potential repeal of these standards.

• AQCC received public comments from NGOs on adopting ACC standards in November 2017. Auto manufacturers commenting in February.

• At AQCC’s request, Division staff is presently researching the process for adoption.
The Governor’s Executive Order requires CDPHE to develop a GHG reporting rule.

• Division to propose a rule mirroring federal requirements by December 2018.

• Division is gathering info from EPA and other states, will engage with stakeholders.

• Division will also review GHG inventory tools to track GHG goals.

• SB 18-117 would require AQCC to promulgate a GHG reporting rule and require biannual GHG emission inventories.

Information on stakeholder engagement can be found at:  https://www.colorado.gov/pacific/cdphe/AP_GHGtracking
Colorado’s Hydrocarbon Rule

- The Commission’s hydrocarbon rule (Regulation No. 7) controls methane emissions from oil and gas operations.

- Originally adopted in February 2014, the rule was strengthened in November 2017.
  - More frequent IR camera inspections in the Front Range region.
  - Added requirements to inspect pneumatic controllers.

- Two 2-year stakeholder processes regarding hydrocarbon reductions and pneumatic controllers began January 2018.

https://www.colorado.gov/pacific/cdphe/oil-and-gas-hydrocarbon-emissions
BLM’s November 2016 rule is intended to limit the loss through venting, flaring or leaks of natural gas from oil and gas production on public and Indian lands.

- In December 2017, the BLM delays rule implementation to January 2019.
- Some provisions of the rule went into effect on January 17, 2017, including a provision that requires operators to submit a “waste minimization plan” with their drilling applications.
- Other aspects of the rule were not scheduled to go into effect until January 17, 2018, and it is these provisions that the BLM now postpones.

Colorado’s hydrocarbon rule accomplishes much of these emission controls.


Colorado Energy Plan - PSCo Proposal to Replace Comanche 1&2

- PUC considering Xcel’s Electric Resource Plan.

- Replacement generation capacity is not specified. Expected to be renewables and/or natural gas.

- CDPHE and AQCC sent letters supporting emission reductions. CDPHE became a party in Dec 2017 to provide air quality data.
  - Took no position on electric resource needs, potential replacement generation, or costs.

- January 2017: APCD presented answer testimony.

- February 7-9: PUC hearing.
In 2016, Comanche Units 1 and 2 had combined annual emissions of approximately 4.6 million tons of carbon dioxide, the primary greenhouse gas of concern when burning coal. This is roughly equivalent to the emissions from 900,000 passenger vehicles.

In 2016, carbon dioxide emissions from Comanche Units 1 and 2 accounted for nearly 11.5% of all greenhouse gas emissions from Colorado’s electric power sector (using EPA’s Greenhouse Gas Equivalencies Calculator found at https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator - last accessed January 4, 2018).

Eliminating these emissions would significantly aid Colorado’s efforts in meeting the goals set by Executive Order D 2017-015, Supporting Colorado’s Clean Energy Transition. This Executive Order set carbon dioxide emission reduction targets for the electric generation sector of 25% from 2012 levels by 2025 and 35% from 2012 levels by 2030.
PSCo’s Colorado Energy Plan

• PSCo is expected to replace the electric generating capacity of Units 1&2 with renewables and/or natural gas-fired generation.

• Natural gas supports renewable generation and provides air quality benefits.

• This was done at Denver’s Cherokee Power Station, and on a per MW/h basis, the natural gas turbine units at Cherokee emit 92% less NOx, 99% less SO₂, and 58% less CO₂ than Comanche Units 1 and 2.
Clean Power Plan Repeal and Possible Replacement

• EPA proposed to repeal the CPP on 10/16/17 (82 Fed. Reg. 48035)

• Colorado will sign Georgetown Climate Center comment letter opposing a repeal.

• EPA published Advance Notice of Proposed Rulemaking to Consider Clean Power Plan Replacement (December 28, 2018) and is soliciting comments.

• EPA has also extended the comment deadline on the proposed CPP repeal to April 26, 2018.