AGENDA
DRCOG Board Work Session
Wednesday, July 1, 2020
4 - 6 p.m.
VIDEO/WEB CONFERENCE
Denver, CO

1. Call to Order

2. Public Comment
   The chair requests that there be no public comment on issues for which a prior public hearing has been held before the Board of Directors.

3. Summary of April 1, 2020 Board Work Session
   (Attachment A)

4. U.S. Senator Michael Bennet listening session with the DRCOG Board of Directors
   (Attachment B) Douglas W. Rex, Executive Director

5. Discussion of HB 19-1261: Concerning the reduction of greenhouse gas pollution
   (Attachment C) Douglas W. Rex, Executive Director

6. Adjourn

Persons in need of auxiliary aids or services, such as interpretation services or assisted listening devices, are asked to contact DRCOG at least 48 hours in advance of the meeting by calling (303) 480-6744.
BOARD WORK SESSION SUMMARY
April 1, 2020

Note: Meeting held virtually via GoToWebinar

Directors present:
Ashley Stolzmann, Vice Chair Louisville
Eva Henry Adams County
Jeff Baker Arapahoe County
Elise Jones Boulder County
William Lindstedt City and County of Broomfield
Randy Wheelock Clear Creek County
Nicholas Williams City and County of Denver
Kevin Flynn City and County of Denver
Roger Partridge Douglas County
Bob Fifer Arvada
Mike Coffman Aurora
Alison Coombs Aurora
Aaron Brockett Boulder
Deborah Mulvey Castle Pines
Tammy Maurer Centennial
Randy Weil Cherry Hills Village
Nicole Frank Commerce City
Steve Conklin Edgewater
Lynette Kelsey Georgetown
Jim Dale Golden
Stephanie Walton Lafayette
Jacob LaBure Lakewood
Karina Elrod Littleton
Pamela Grove Littleton
Wynne Shaw Lone Tree
John Diak Parker
Jessica Sandgren Thornton
Herb Atchison Westminster
Anita Seitz Westminster
Rebecca White Colorado Department of Transportation
Bill Van Meter Regional Transportation District

Others present: Doug Rex, Executive Director; Chris Chovan, Adams County; Mac Callison, Aurora; Heidi Henkel, Broomfield; Brad Boland, Castle Rock; Lauren Pulver, Art Griffith, Douglas County; Kent Moorman, Thornton; Debra Baskett, Westminster; Danny Herrman, Jordan Rudel, CDOT; and DRCOG staff.

Board Vice Chair Ashley Stolzmann facilitated the work session. The session began at 4:01 p.m.

Public Comment
No public comment was received.
Discussion on urban arterial multimodal safety improvements set-aside

Ron Papsdorf presented the proposed eligibility rules and evaluation process for the selection of projects to be funded to the Board. At the February 19, 2020 meeting, the DRCOG Board of Directors expressed a positive reaction to the creation of a $26 million Urban Arterial Multimodal Safety Improvements Program. CDOT and DRCOG have determined that it is desirable to distribute these funds along with CDOT’s SB17-267 funding allocations for arterial safety and transit improvements through one consolidated call for projects. In order to meet the required project delivery and spending requirements of the SB17-267 funds, DRCOG and CDOT requested the Board review the eligibility rules and project selection process for the combined call for projects. Mr. Papsdorf noted at the March 23, 2020 Transportation Advisory Committee, the committee recommended approval with an amendment to remove the term “road diets”.

Director Flynn wanted clarification on why the Transportation Advisory Committee wanted the term “road diet” removed. Mr. Papsdorf stated that there was a potential concern for the term being too controversial and it may not convey the message of “road calming” as intended. Director Elrod wanted to confirm that if the term were removed, if that would have an effect on the eligibility of projects that pertain to “road diet” measures. Mr. Papsdorf confirmed that it would not.

Draft 2050 Metro Vision Regional Transportation Plan (2050 MVRTP) scenario outcome Results

Jacob Riger, Robert Spotts, Alvan-Bidal Sanchez, and Andy Taylor presented the various scenario outcomes to the Board. At the December 18, 2019 meeting, the Board informally endorsed several measures and topics to assess the outcomes of the land use and transportation scenarios as part of developing the 2050 MVRTP. DRCOG staff have been coding, modeling, and compiling the results of five transportation scenarios and two land use scenarios. The presentation defined and illustrated each of the transportation and land use scenarios to help members understand and make sense of the many results. Directors were informed that the meeting was anticipated to focus on how the scenario outcome results should guide the framework for preparing the 2050 MVRTP.

Regarding the Transportation Scenarios, Director Jones was surprised to see the relationship between increased transit use and VMT and what little impact it had, even with a “fare free” program. Mr. Spotts clarified that public transit is a small percentage of overall trips around the region, with public transit accounting for only about 400,000 versus a total of about 15 million trips.

The work session ended at 5:21 p.m.
To: Chair and Members of the Board of Directors

From: Douglas W. Rex, Executive Director
303-480-6701 or drex@drcog.org

<table>
<thead>
<tr>
<th>Meeting Date</th>
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<th>Agenda Item #</th>
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<tr>
<td>July 1, 2020</td>
<td>Discussion</td>
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SUBJECT
An opportunity for the DRCOG Board of Directors to dialogue with U.S. Senator Michael Bennet

PROPOSED ACTION/RECOMMENDATIONS
N/A

ACTION BY OTHERS
N/A

SUMMARY
U.S. Senator Michael Bennet will provide a federal update and take questions from the Board regarding federal policy and legislative issues. Senator Bennet would also like to hear from board directors about their top federal issues and priorities as we head into the fall.

PREVIOUS DISCUSSIONS/ACTIONS
N/A

PROPOSED MOTION
N/A

ATTACHMENT
DRCOG’s 2020 Policy Statement on Federal Legislative Issues

ADDITIONAL INFORMATION
If you need additional information, please contact Douglas W. Rex, Executive Director, at 303-480-6701 or drex@drcog.org.
To: Chair and Members of the Board of Directors

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**SUBJECT**
Update and discussion on HB 19-1261: Concerning the reduction of greenhouse gas pollution, and, in connection therewith, establishing statewide greenhouse gas pollution reduction goals and making an appropriation.

**PROPOSED ACTION/RECOMMENDATIONS**
N/A

**ACTION BY OTHERS**
N/A

**SUMMARY**
House Bill 19-1261 was signed into law on May 30, 2019. The bill concerns the reduction of greenhouse gas pollution and establishing statewide greenhouse gas pollution reduction goals.

The law sets statewide goals to reduce greenhouse gas emissions from 2005 levels by at least 26% by 2025, at least 50% by 2030, and at least 90% by 2050.

The law further specifies considerations that the Air Quality Control Commission (AQCC) is to take into account in implementing policies and promulgating rules to reduce greenhouse gas pollution, including the benefits of compliance and the equitable distribution of those benefits, the costs of compliance, opportunities to incentivize clean energy in transitioning communities, and the potential to enhance the resilience of Colorado's communities and natural resources to climate impacts. The AQCC will also consult with the public utilities commission regarding rules that affect the providers of retail electricity in Colorado.

The first phase of implementation was to develop an updated, statewide greenhouse gas inventory, completed in early 2020. The Colorado Department of Health and Environment (CDPHE) and the Colorado Energy Office (CEO) are currently developing scenarios of strategies to achieve the bill’s greenhouse gas targets, including targeted engagement and public meetings, which will lead to a final “GHG Roadmap” that will be delivered to the AQCC by September 30, 2020.

Initial results from the modeling and policy development by CDPHE and CEO suggest that a 40% reduction in transportation-related GHG emissions by 2030 will be necessary to reach HB-1261’s overall GHG targets. The transportation policies being examined to achieve this target include per capita VMT reductions and light duty vehicle electrification. Specific policies will be implemented by the AQCC in late 2020 and early 2021.

The Colorado Energy Office will provide a more detailed summary of the bill and the work the state is doing to implement it for Board discussion.
PREVIOUS DISCUSSIONS/ACTIONS
N/A

PROPOSED MOTION
N/A

ATTACHMENTS
1. Colorado Energy Office presentation
2. HB19-1261

ADDITIONAL INFORMATION
If you need additional information, please contact Douglas W. Rex, Executive Director, at 303-480-6701 or drex@drcog.org; or Robert Spotts, Program Manager, Transportation Planning and Operations, at 303-480-5626 or rspotts@drcog.org.
Colorado
Roadmap to Greenhouse Gas Reductions
June 2020
Colorado Greenhouse Gas (GHG) Roadmap Timeline

- **May 30, 2019**: HB19 - 1261 Climate Action Plan to Reduce Pollution is signed into law, establishing statewide GHG reduction goals.
- **Fall 2019/Winter 2020**: State Agencies Undertake GHG Inventory.
- **Spring/Summer 2020**: State Agencies lead public engagement efforts and develop scenarios to achieve GHG targets.
  - CEO Website
  - Targeted Engagement
  - Public Meetings
- **September 30, 2020**: Final GHG Roadmap delivered to CO Air Quality Control Commission.
  - GHG Scenario Modeling
  - Scenario Inputs, Results, and Models
  - Greenhouse Gas Emissions Roadmap
GHG Roadmap Timeline

June
- We are here
- June AQCC Meeting

Model inputs released

Timeline for Public Feedback

July
- July AQCC Meeting

August
- August Roadmap Update

Release of final models, updated spreadsheets, and final report

September

October
- GHG Roadmap Completed
• Economy-wide infrastructure-based GHG and energy analysis
  • Captures “infrastructure inertia” through stock rollover and allows for rapid comparison between user-defined scenarios
  • Scenarios test “what if” questions
    • Reference or counterfactual scenario for consistent comparison in future years
    • Mitigation measures and policies will be added to show future additional reductions
Updated Scenario Results Incl. Updated Oil & Gas Estimates

- Updating the 2005 historical year impacts the future GHG targets that are measured relative to that year.
- Each scenario now includes results from APCD’s production and leak rate analysis.

![Graph showing economy-wide emissions by scenario with different scenarios and targets indicated.](image-url)
HB 1261 Targets - Updated Emissions by Sector

2019 Action Scenario

- Electricity
- Oil & Gas
- Transportation
- Buildings
- Industry
- Agriculture, HFCs, Waste, Coal Mine
- Methane

GHG Emissions (MMT CO2e)

<table>
<thead>
<tr>
<th>Sector</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
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<tbody>
<tr>
<td>Electricity</td>
<td>120</td>
<td>100</td>
<td>80</td>
<td>60</td>
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<tr>
<td>Oil &amp; Gas</td>
<td>100</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Transportation</td>
<td>80</td>
<td>60</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>Buildings</td>
<td>60</td>
<td>40</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Industry</td>
<td>40</td>
<td>20</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Agriculture, HFCs, Waste,</td>
<td>20</td>
<td>10</td>
<td>5</td>
<td>2.5</td>
</tr>
<tr>
<td>Coal Mine Methane</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

% reduction by sector         | 70%  | 49%  | 13%  | 40%  | 41%  | 27%  |

(vs. 2015)

HB 1261 Targets Scenario

% reduction by sector         | 70%  | 49%  | 13%  | 40%  | 41%  | 27%  |

(vs. 2015)
Summary of Feedback Received To Date

● Interest in impacts from COVID

  We have created COVID sensitivities to test impacts on scenarios from key parameters

● Interest in modeling results through 2050

  The focus of our work is on near-term targets, but to ensure that we are on track for CO’s long-term targets we have included modeling through 2050 in these slides and spreadsheet documentation

● Interest in additional documentation

  Additional documentation of scenario assumptions is included in the appendix of this document

  We have created detailed spreadsheet documentation of model assumptions and results from the PATHWAYS and RESOLVE models that is available online at the Roadmap webpage.

● Interest in more focus on policy mechanisms

  The State has been reviewing feedback on suggested policies. More detail on potential policy mechanisms will be included in a presentation from the state agency team.
Oil and Gas Sector

● Revisions to GHG Baseline Using Colorado-Specific Information
  ○ Production Data
  ○ Historic Leak Rates and Facility Specific Data
  ○ Results in Better Alignment with Top-Down Studies and Literature

● Declining Leak Rates
  ○ Aggressive but Feasible Reduction in Leak Rates
  ○ Reductions Align with Current and Future Regulatory Actions

● Revises Total GHG Baseline to Approximately 140 MMT for 2005
  ○ 10 MMT CO2e increase in Oil and Gas Sector
COVID Sensitivity

- All modeling to date had been done considering pre-COVID conditions (i.e. no change to model drivers as a result of recent COVID impacts)
- To reflect some of the potential impacts from COVID, we modeled a COVID sensitivity on our 2019 Action and HB 1261 scenarios. This included the following:
  - Updated demographic projections to reflect lower expected migration to CO
    - Lower migration to Colorado impacting population, households, and number of vehicles
    - Source: CO State Demographer’s Office
  - Updated driving patterns to reflect less vehicle miles traveled
    - Lower VMT in 2020 and slowed recovery through 2026
    - Source: FHWA and CO research on 2006-2013 VMT recovery
  - Updated oil and gas production to reflect lower production from active rigs
    - Lower production and associated emissions in 2020 and future years
    - Source: CDPHE

There are certainly other impacts from COVID (e.g. lower energy demands from commercial and industrial customers), but not enough is known to date about how this will impact energy and emissions in 2025 and 2030, so we have excluded this from our sensitivity.
COVID Sensitivity - Key Drivers
COVID Sensitivity Results: 2020-2030

Economy-wide Emissions by Scenario

GHG Emissions (MMT CO2e)

- CO Historical Emissions
- Reference
- 2019 Action
- COVID Impacts

Key Points:
- 26% below 2005 levels
- 50% below 2005 levels
- HB 1261 Targets

Graph showing emissions trends from 2005 to 2030.
COVID Sensitivity Results: 2020-2050

Economy-wide Emissions by Scenario

- CO Historical Emissions
- Reference
- 26% below 2005 levels
- 2019 Action
- COVID Impacts
- 50% below 2005 levels
- HB 1261 Targets
- COVID Impacts
- 90% below 2005 levels

GHG Emissions (MMT CO2e) vs. Year (2005-2050)
# Key Scenario Assumptions: Reference and 2019 Action Scenarios

<table>
<thead>
<tr>
<th>Sector</th>
<th>Measure</th>
<th>Reference Scenario</th>
<th>2019 Action Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings and Industry</td>
<td>Energy Efficiency</td>
<td>Utility efficiency programs; appliance standards</td>
<td>2019 New Appliance Standards (HB 1231)</td>
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<tr>
<td></td>
<td>Electrification</td>
<td>N/A</td>
<td></td>
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<tr>
<td>Transportation</td>
<td>CAFE Standards</td>
<td>Extended through 2026</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zero-Emission Vehicles (ZEVs)</td>
<td>Economic adoption (EIA), 9% sales by 2030</td>
<td>Navigant modeled scenario, 42% sales by 2030</td>
</tr>
<tr>
<td>Electricity Generation</td>
<td>Coal Retirements</td>
<td>Planned retirements (pre-2019 announcements)</td>
<td>Recent announcements (Craig 2 and 3)</td>
</tr>
<tr>
<td></td>
<td>Distributed Solar</td>
<td>Projected trends in rooftop solar adoption</td>
<td></td>
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<tr>
<td></td>
<td>Carbon Targets</td>
<td>N/A</td>
<td>80% GHG Reductions by 2030, Tri-State and Xcel targets by 2050, SB 236</td>
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<tr>
<td>Oil &amp; Gas</td>
<td>Control regulations</td>
<td>APCD analysis reflects current regulation and expected production and leak rate reductions</td>
<td></td>
</tr>
<tr>
<td>Waste and Refrigerants</td>
<td>Total Emissions</td>
<td>Grow with population, no measures</td>
<td></td>
</tr>
<tr>
<td>Ag. and Coal Mine Methane</td>
<td>Total Emissions</td>
<td>Remain constant, no measures</td>
<td></td>
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</table>
Pillars of Deep Decarbonization in CO

**Demand Side**
- Energy efficiency & conservation
- Buildings: Space & water heating
- Transportation: LDV, MDV/HDV, Buses
- Industry: Facility HVAC, Low-temp process heat

**Supply Side**
- Electrification
- Low carbon fuels
- Low carbon electricity

**Non-Combustion**
- Renewable energy: Solar, Wind
- Grid Integration: Battery storage, Flexible loads
- Non-energy emissions
- Oil and Gas: Fugitive leak reduction, HFCs: Low GWP replacements
- Waste: Methane recovery from landfills and wastewater treatment

**Building Efficiency:**
- Codes and standards
- Appliance efficiency
- Building shell improvements
- CAFE standards for vehicles
- VMT per capita reductions

**Biofuels:**
- Conventional ethanol and biodiesel
- Advanced renewable diesel for transportation
- Biogas from waste methane sources

**Grid Integration:**
- Battery storage
- Flexible loads

**Renewables:**
- Solar
- Wind

**Oil and Gas:**
- Fugitive leak reduction
- HFCs: Low GWP replacements
- Waste: Methane recovery from landfills and wastewater treatment
HB 1261 Targets Scenario: Key Stock Rollover Charts

**Light Duty Vehicles - Sales Share**
- Gasoline
- Battery Electric
- Diesel
- Plug-in Hybrid Electric

**Light Duty Vehicles - Stocks**
- Vehicles (millions)
- 2015 to 2050

**Residential SF Space Heating - Sales Share**
- Natural Gas Furnaces & Boilers
- Wood
- Electric Heat Pump
- Electric Resistance

**Residential SF Space Heating - Stocks**
- Equipment Stocks (millions)
- 2015 to 2050
HB 1261 Targets Scenario: Updated Emissions by Sector

2019 Action Scenario

- Electricity
- Oil & Gas
- Transportation
- Buildings
- Industry
- Agriculture
- HFCs, Waste, Coal Mine CH4

% reduction by sector (vs. 2015)
- 94%
- 91%
- 96%
- 100%
- 94%
- 43%
- 65%
HB 1261 Targets Scenario: 2050 Emissions Wedges

Emissions Mitigation in 2050 by Wedge

- Clean Electricity
- LDV VMT Reduction
- Energy Efficiency
- Building & Industry Electrification
- Transportation Electrification
- Advanced Biofuels & H2
- Oil & Gas Measures
- Agriculture
- HFCs
- Coal Mines
- Waste
- Industry CCS & BECCS
HB 1261 Targets Scenario: Electricity Generation & Emissions

Key Observations

- Beginning in 2040, natural gas with CCS plants are used to serve base load while meeting emission targets

<table>
<thead>
<tr>
<th>Metric</th>
<th>2030</th>
<th>2050</th>
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<tr>
<td>GHG Emissions (MMT)</td>
<td>8.1</td>
<td>2.2</td>
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<tr>
<td>Effective CES (%)</td>
<td>75%</td>
<td>101%</td>
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* The emissions from new firm resources are estimated based on the emissions from equivalent gas plants
Next Steps

● Feedback on policies and measures to be included in 2030 scenario
  ○ Feedback encouraged through Colorado Energy Office Website **through July**
  ○ What policies and actions do you want to see to help the State meet their ambitious GHG goals?

● Finalizing scenario and policy modeling

● Drafting of GHG Roadmap report
Roadmap Outreach

- Feedback encouraged through Colorado Energy Office Website
  - What additional policies should be included in our list of current policies?
  - What measures and actions do you want to see to help the State meet their ambitious GHG goals?
- Targeted engagement will help refine specific parts of the analysis by meeting with key sectoral experts and interest groups
- Public presentations with AQCC will be scheduled throughout the project

https://energyoffice.colorado.gov/ghg-pollution-reduction-roadmap
An Act

HOUSE BILL 19-1261


CONCERNING THE REDUCTION OF GREENHOUSE GAS POLLUTION, AND, IN CONNECTION THEREWITH, ESTABLISHING STATEWIDE GREENHOUSE GAS POLLUTION REDUCTION GOALS AND MAKING AN APPROPRIATION.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. In Colorado Revised Statutes, amend 25-7-102 as follows:

25-7-102. Legislative declaration. (1) In order to foster the health, welfare, convenience, and comfort of the inhabitants of the state of Colorado and to facilitate the enjoyment and use of the scenic and natural

Capital letters or bold & italic numbers indicate new material added to existing law; dashes through words or numbers indicate deletions from existing law and such material is not part of the act.
resources of the state, it is declared to be the policy of this state to achieve the maximum practical degree of air purity in every portion of the state, to attain and maintain the national ambient air quality standards, and to prevent the significant deterioration of air quality in those portions of the state where the air quality is better than the national ambient air quality standards. To that end, it is the purpose of this article ARTICLE 7 to require the use of all available practical methods which are technologically feasible and economically reasonable so as to reduce, prevent, and control air pollution throughout the state of Colorado; to require the development of an air quality control program in which the benefits of the air pollution control measures utilized bear a reasonable relationship to the economic, environmental, and energy impacts and other costs of such measures; and to maintain a cooperative program between the state and local units of government. It is further declared that the prevention, abatement, and control of air pollution in each portion of the state are matters of statewide concern and are affected with a public interest and that the provisions of this article ARTICLE 7 are enacted in the exercise of the police powers of this state for the purpose of protecting the health, peace, safety, and general welfare of the people of this state. The general assembly further recognizes that a current and accurate inventory of actual emissions of air pollutants from all sources is essential for the proper identification and designation of attainment and nonattainment areas, the determination of the most cost-effective regulatory strategy to reduce pollution, the targeting of regulatory efforts to achieve the greatest health and environmental benefits, and the achievement of a federally approved clean air program. In order to achieve the most accurate inventory of air pollution sources possible, this article ARTICLE 7 specifically provides incentives to achieve the most accurate and complete inventory possible and to provide for the most accurate enforcement program achievable based upon that inventory.

(2) It is further declared that:

(a) Climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life;

(b) Colorado is already experiencing harmful climate impacts, including declining snowpack, prolonged drought, more extreme heat, elevated wildfire risk and risk to first responders, widespread beetle infestation decimating forests, increased risk
OF VECTOR-BORNE DISEASES, MORE FREQUENT AND SEVERE FLOODING, MORE SEVERE GROUND-LEVEL OZONE POLLUTION CAUSING RESPIRATORY DAMAGE AND LOSS OF LIFE, DECREASED ECONOMIC ACTIVITY FROM OUTDOOR RECREATION AND AGRICULTURE, AND DIMINISHED QUALITY OF LIFE. MANY OF THESE IMPACTS DISPROPORTIONATELY AFFECT RURAL COMMUNITIES, COMMUNITIES OF COLOR, YOUTH AND THE ELDERLY, AND WORKING FAMILIES. REDUCING STATEWIDE GREENHOUSE GAS POLLUTION AS OUTLINED IN THIS SUBSECTION (2) WILL PROTECT THESE FRONTLINE COMMUNITIES, FIRST RESPONDERS, AND ALL COLORADO RESIDENTS FROM THESE AND OTHER CLIMATE IMPACTS.

(c) We must work together to reduce statewide greenhouse gas pollution in order to limit the increase in the global average temperature to one and one-half degrees Celsius, which scientists agree would provide a more stable and hospitable climate for current and future generations and mitigate the risk of catastrophic climate impacts in Colorado;

(d) By reducing greenhouse gas pollution, Colorado will also reduce other harmful air pollutants which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment;

(e) Reducing greenhouse gas pollution will create new markets, spur innovation, drive investments in low-carbon technologies, and put Colorado squarely on the path to a modern, resilient, one-hundred-percent clean economy. Delay in pursuing and securing greenhouse gas reductions as outlined in this subsection (2) will prevent Colorado communities from capturing the benefits of these new jobs and markets, in addition to exacerbating the climate impacts that harm Coloradans. The clean energy economy is already bringing tens of thousands of jobs and billions of dollars in direct investment to counties across the state, benefitting workers, families, and communities. Colorado can continue to facilitate such a transition to a clean energy economy. Food and fiber production has made significant achievements in areas of productivity and sustainability. Modern technology in this sector contributes to reductions in greenhouse gas emissions by sequestering carbon in the soil and enhancing sustainability through technologies that reduce methane.
EMISSIONS AND PRODUCE RENEWABLE ENERGY. CONTINUING TO ENCOURAGE THESE TYPES OF ACHIEVEMENTS IS BENEFICIAL.

(f) BY EXERCISING A LEADERSHIP ROLE, COLORADO WILL ALSO POSITION ITS ECONOMY, TECHNOLOGY CENTERS, FINANCIAL INSTITUTIONS, AND BUSINESSES TO BENEFIT FROM NATIONAL AND INTERNATIONAL EFFORTS TO REDUCE GREENHOUSE GASES;

(g) ACCORDINGLY, COLORADO SHALL STRIVE TO INCREASE RENEWABLE ENERGY GENERATION AND ELIMINATE STATEWIDE GREENHOUSE GAS POLLUTION BY THE MIDDLE OF THE TWENTY-FIRST CENTURY AND HAVE GOALS OF ACHIEVING, AT A MINIMUM, A TWENTY-SIX-PERCENT REDUCTION IN STATEWIDE GREENHOUSE GAS POLLUTION BY 2025, A FIFTY-PERCENT REDUCTION IN STATEWIDE GREENHOUSE GAS POLLUTION BY 2030, AND A NINETY-PERCENT REDUCTION IN STATEWIDE GREENHOUSE GAS POLLUTION BY 2050. THE REDUCTIONS IDENTIFIED IN THIS SUBSECTION (2)(g) ARE MEASURED RELATIVE TO 2005 STATEWIDE GREENHOUSE GAS POLLUTION LEVELS.

SECTION 2. In Colorado Revised Statutes, 25-7-103, amend the introductory portion; and add (22.5) as follows:

25-7-103. Definitions. As used in this article ARTICLE 7, unless the context otherwise requires:

(22.5) "STATEWIDE GREENHOUSE GAS POLLUTION" MEANS THE TOTAL NET STATEWIDE ANTHROPOGENIC EMISSIONS OF CARBON DIOXIDE, METHANE, NITROUS OXIDE, HYDROFLUOROCARBONS, PERFLUOROCARBONS, NITROGEN TRIFLUORIDE, AND SULFUR HEXAFLUORIDE, EXPRESSED AS CARBON DIOXIDE EQUIVALENT CALCULATED USING A METHODOLOGY AND DATA ON RADIATIVE FORCING AND ATMOSPHERIC PERSISTENCE DEEMED APPROPRIATE BY THE COMMISSION.

SECTION 3. In Colorado Revised Statutes, 25-7-105, amend (1) introductory portion; and add (1)(e) as follows:

25-7-105. Duties of commission - rules - legislative declaration - definitions. (1) Except as provided in sections 25-7-130 and 25-7-131, the commission shall promulgate such rules and regulations as are consistent with the legislative declaration set forth in section 25-7-102 and
necessary for the proper implementation and administration of this article ARTICLE 7, including, but not limited to:

(e) (I) STATEWIDE GREENHOUSE GAS POLLUTION ABATEMENT.

(II) Consistent with section 25-7-102 (2)(g), the commission shall timely promulgate implementing rules and regulations. The implementing rules may take into account other relevant laws and rules, as well as voluntary actions taken by local communities and the private sector, to enhance efficiency and cost-effectiveness, and shall be revised as necessary over time to ensure timely progress toward the 2025, 2030, and 2050 goals. The implementing rules shall provide for ongoing tracking of emission sources that adversely affect disproportionately impacted communities and are subject to rules implemented pursuant to this subsection (1)(e) and must include strategies designed to achieve reductions in harmful air pollution affecting those communities.

(III) The commission will identify disproportionately impacted communities. In identifying these communities, the commission will consider: minority, low-income, tribal, or indigenous populations in the state that potentially experience disproportionate environmental harms and risks. This disproportionality can be a result of increased vulnerability to environmental degradation, lack of opportunity for public participation, or other factors. Increased vulnerability may be attributable to an accumulation of negative or lack of positive environmental, health, economic, or social conditions within these populations. "Disproportionately impacted communities" describes situations where multiple factors, including both environmental and socio-economic stressors, may act cumulatively to affect health and the environment and contribute to persistent environmental health disparities.

(IV) The division, at the direction of the commission, shall solicit input from other state agencies, stakeholders, and the public on the advantages of different statewide greenhouse gas pollution mitigation measures, specifically soliciting input from those most impacted by climate change, including disproportionately impacted communities; large emission sources;
WORKERS IN RELEVANT INDUSTRIES, INCLUDING ADVANCED ENERGY AND FUEL DELIVERY; AND COMMUNITIES THAT ARE CURRENTLY ECONOMICALLY DEPENDENT ON INDUSTRIES WITH HIGH LEVELS OF GREENHOUSE GAS EMISSIONS.

(V) THE IMPLEMENTING RULES AND POLICIES MAY INCLUDE, IN ADDITION TO RENEWABLE ENERGY DEVELOPMENT STRATEGIES, REGULATORY STRATEGIES THAT HAVE BEEN DEPLOYED BY ANOTHER JURISDICTION TO REDUCE MULTI-SECTOR GREENHOUSE GAS EMISSIONS, THAT FACILITATE ADOPTION OF TECHNOLOGIES THAT HAVE VERY LOW OR ZERO EMISSIONS, AND THAT ENHANCE COST-EFFECTIVENESS, COMPLIANCE FLEXIBILITY, AND TRANSPARENCY AROUND COMPLIANCE COSTS, AMONG OTHER REGULATORY STRATEGIES. THE COMMISSION MAY COORDINATE WITH OTHER JURISDICTIONS IN SECURING EMISSION REDUCTIONS, INCLUDING IN SATISFYING FUTURE FEDERAL REGULATIONS. THE COMMISSION MAY ACCOUNT FOR REDUCTIONS IN NET GREENHOUSE GAS EMISSIONS THAT OCCUR UNDER COORDINATED JURISDICTIONS’ PROGRAMS IF THE COMMISSION FINDS THAT THE IMPLEMENTING REGULATIONS OF EACH COORDINATED JURISDICTION ARE OF SUFFICIENT RIGOR TO ENSURE THE INTEGRITY OF THE REDUCTIONS IN GREENHOUSE GAS EMISSIONS TO THE ATMOSPHERE AND MAY ACCOUNT FOR CARBON DIOXIDE THAT ELECTRICITY CONSUMPTION IN THIS STATE CAUSES TO BE EMITTED ELSEWHERE.

(VI) IN CARRYING OUT ITS RESPONSIBILITIES UNDER THIS SUBSECTION (1)(e), THE COMMISSION SHALL CONSIDER: THE BENEFITS OF COMPLIANCE, INCLUDING HEALTH, ENVIRONMENTAL, AND AIR QUALITY; THE COSTS OF COMPLIANCE; ECONOMIC AND JOB IMPACTS AND OPPORTUNITIES; THE TIME NECESSARY FOR COMPLIANCE; THE RELATIVE CONTRIBUTION OF EACH SOURCE OR SOURCE CATEGORY TO STATEWIDE GREENHOUSE GAS POLLUTION BASED ON CURRENT DATA UPDATED AT REASONABLE INTERVALS AS DETERMINED BY THE COMMISSION; HARMONIZING EMISSION REPORTING REQUIREMENTS WITH EXISTING FEDERAL REQUIREMENTS, WHERE THE COMMISSION DEEMS APPROPRIATE; THE IMPORTANCE OF STRIVING TO EQUITABLY DISTRIBUTE THE BENEFITS OF COMPLIANCE, OPPORTUNITIES TO INCENTIVIZE RENEWABLE ENERGY RESOURCES AND POLLUTION ABATEMENT OPPORTUNITIES IN DISPROPORTIONATELY IMPACTED COMMUNITIES, OPPORTUNITIES TO ENCOURAGE CLEAN ENERGY IN TRANSITIONING COMMUNITIES; ISSUES RELATED TO THE BENEFICIAL USE OF ELECTRICITY TO REDUCE GREENHOUSE GAS EMISSIONS; WHETHER PROGRAM DESIGN COULD ENHANCE THE RELIABILITY OF ELECTRIC SERVICE; THE POTENTIAL TO
ENHANCE THE RESILIENCE OF COLORADO'S COMMUNITIES AND NATURAL RESOURCES TO CLIMATE IMPACTS; AND WHETHER GREATER OR MORE COST-EFFECTIVE EMISSION REDUCTIONS ARE AVAILABLE THROUGH PROGRAM DESIGN.

(VII) NOTWITHSTANDING SECTION 24-1-136 (11)(a)(I), THE DIVISION, AT THE DIRECTION OF THE COMMISSION, SHALL REPORT TO THE GENERAL ASSEMBLY EVERY ODD-NUMBERED YEAR AFTER THE EFFECTIVE DATE OF THIS SUBSECTION (1)(e) REGARDING: PROGRESS TOWARD THE GOALS SET FORTH IN SECTION 25-7-102 (2)(g); ANY NEWLY AVAILABLE, FINAL COST-BENEFIT OR REGULATORY ANALYSIS, DEVELOPED UNDER SECTION 24-4-103 (2.5) OR (4.5), FOR RULES ADOPTED TO ATTAIN THE GOALS; AND ANY RECOMMENDATIONS ON FUTURE LEGISLATIVE ACTION TO ADDRESS CLIMATE CHANGE, SUCH AS IMPLEMENTATION OF CLIMATE ADAPTATION POLICIES OR ACCELERATING DEPLOYMENT OF CLEANER TECHNOLOGIES.

(VIII) (A) IN CARRYING OUT ITS RESPONSIBILITIES UNDER THIS SUBSECTION (1)(e), THE COMMISSION SHALL CONSULT WITH THE PUBLIC UTILITIES COMMISSION, INCLUDING ON ISSUES OF COST OF ELECTRICITY, RELIABILITY OF ELECTRIC SERVICE, TECHNOLOGY DEVELOPMENTS IN ELECTRICITY PRODUCTION, AND BENEFICIAL ELECTRIFICATION, AND KEEP A RECORD OF ITS CONSULTATION.

(B) THE GENERAL ASSEMBLY HEREBY FINDS, DETERMINES, AND DECLARES THAT IT IS BENEFICIAL TO ENCOURAGE THE DEVELOPMENT OF CLEAN ENERGY PLANS THAT WILL REQUIRE GREENHOUSE GAS EMISSIONS CAUSED BY COLORADO RETAIL ELECTRICITY SALES TO DECREASE EIGHTY PERCENT BY 2030 RELATIVE TO 2005 LEVELS TO PROVIDE FOR THE COST-EFFECTIVE AND PROACTIVE DEPLOYMENT OF CLEAN ENERGY RESOURCES.

(C) IN DESIGNING, IMPLEMENTING, AND ENFORCING PROGRAMS AND REQUIREMENTS UNDER THIS SUBSECTION (1)(e), THE COMMISSION AND THE DIVISION SHALL TAKE INTO CONSIDERATION ANY CLEAN ENERGY PLAN AT THE PUBLIC UTILITIES COMMISSION THAT, AS FILED, WILL ACHIEVE AT LEAST AN EIGHTY-PERCENT REDUCTION IN GREENHOUSE GAS EMISSIONS CAUSED BY THE UTILITY'S COLORADO RETAIL ELECTRICITY SALES BY 2030 RELATIVE TO 2005 LEVELS, AS VERIFIED BY THE DIVISION. WHEN INCLUDING PUBLIC UTILITIES IN ITS PROGRAMS OR REQUIREMENTS UNDER THIS SUBSECTION
THE COMMISSION SHALL NOT MANDATE THAT A PUBLIC UTILITY REDUCE GREENHOUSE GAS EMISSIONS CAUSED BY THE UTILITY'S COLORADO RETAIL ELECTRICITY SALES BY 2030 MORE THAN IS REQUIRED UNDER SUCH AN APPROVED CLEAN ENERGY PLAN OR IMPOSE ANY DIRECT, NONADMINISTRATIVE COST ON THE PUBLIC UTILITY DIRECTLY ASSOCIATED WITH QUANTITIES OF GREENHOUSE GAS EMISSIONS CAUSED BY THE UTILITY'S COLORADO RETAIL ELECTRICITY SALES THAT REMAIN AFTER THE REDUCTIONS REQUIRED BY SUCH A CLEAN ENERGY PLAN THROUGH 2030 IF THOSE REDUCTIONS ARE ACHIEVED AND THE DIVISION HAS VERIFIED THAT THE APPROVED CLEAN ENERGY PLAN WILL ACHIEVE AT LEAST A SEVENTY-FIVE-PERCENT REDUCTION IN GREENHOUSE GAS EMISSIONS CAUSED BY THE UTILITY'S COLORADO RETAIL ELECTRICITY SALES BY 2030 RELATIVE TO 2005 LEVELS.

(D) IMPLEMENTING RULES DEVELOPED BY THE COMMISSION MUST NOT INCLUDE ANY REQUIREMENTS DICTATING THE MIX OF ELECTRIC GENERATING RESOURCES THAT ANY PUBLIC UTILITY SHALL USE TO MEET APPLICABLE POLLUTION LIMITS.

(E) IMPLEMENTING RULES DEVELOPED BY THE COMMISSION MUST CONSIDER ISSUES RELATING TO JOINT OWNERSHIP OF ELECTRIC GENERATING RESOURCES AS BETWEEN MULTIPLE PARTIES AND THE EXTENT TO WHICH THE PUBLIC UTILITY IS RELYING ON POWER PURCHASED FROM THIRD PARTIES IN MEETING ITS OBLIGATIONS UNDER SUCH A CLEAN ENERGY PLAN.

(F) A CLEAN ENERGY PLAN VOLUNTARILY FILED BY A COOPERATIVE ELECTRIC ASSOCIATION THAT HAS VOTED TO EXEMPT ITSELF FROM REGULATION BY THE PUBLIC UTILITIES COMMISSION PURSUANT TO ARTICLE 9.5 OF TITLE 40 OR BY A MUNICIPAL UTILITY SHALL BE DEEMED APPROVED BY THE PUBLIC UTILITIES COMMISSION AS FILED IF: THE DIVISION, IN CONSULTATION WITH THE PUBLIC UTILITIES COMMISSION, PUBLICLY VERIFIES THAT THE PLAN DEMONSTRATES THAT, BY 2030, THE COOPERATIVE ELECTRIC ASSOCIATION OR MUNICIPAL UTILITY WILL ACHIEVE AT LEAST AN EIGHTY PERCENT REDUCTION IN GREENHOUSE GAS EMISSIONS CAUSED BY THE ENTITY'S COLORADO RETAIL ELECTRICITY SALES RELATIVE TO 2005 LEVELS; AND THE CLEAN ENERGY PLAN HAS PREVIOUSLY BEEN APPROVED BY A VOTE OF THE ENTITY'S GOVERNING BODY. VOLUNTARY SUBMISSION OF A CLEAN ENERGY PLAN BY A COOPERATIVE ELECTRIC ASSOCIATION OR MUNICIPAL UTILITY DOES NOT ALTER THE ENTITY'S REGULATORY STATUS WITH RESPECT TO THE PUBLIC UTILITIES COMMISSION, INCLUDING UNDER ARTICLE 9.5 OF
(IX) (A) In addressing greenhouse gas emissions from an energy-intensive, trade-exposed manufacturing source, the Commission shall require the source to execute an energy and emission control audit, according to criteria established by the Commission, of the source's operations every five years through at least 2035. A qualified third party, as determined by the Commission, shall conduct the audit and submit the results to the Commission. If the Commission determines that the source currently employs best available emission control technologies for greenhouse gas emissions and best available energy efficiency practices, the Commission shall not impose a direct nonadministrative cost on the source directly associated with at least ninety-five percent of the source's greenhouse gas emissions attributable to manufacturing a good in this state for a period of five years, if the source's emissions are not greater than the emissions associated with use of the best available emission control technologies as determined by the Commission. The Commission shall consider how program design as relevant to those sources can further mitigate the cost of reducing emissions for such manufacturers while providing an incentive to improve efficiency and reduce emissions. Specifically, the Commission shall design the program as relevant to those sources such that as the sources are subject to emission reduction requirements, those sources will have, under the program, a pathway to obtain equivalent lower-cost emission reductions at other regulated sources to satisfy their compliance obligations.

(B) As used in this subsection (1)(e)(IX), "energy-intensive, trade-exposed manufacturing source" means an entity that principally manufactures iron, steel, aluminum, pulp, paper, or cement and that is engaged in the manufacture of goods through one or more emissions-intensive, trade-exposed processes, as determined by the Commission.

(X) Nothing in this subsection (1)(e) diminishes the existing authority of the Commission or the division. Nothing in this subsection (1)(e) alters the regulatory exemptions provided in section 25-7-109 (8)(a). Nothing authorized in this subsection (1)(e),
INCLUDING THE ASSIGNMENT OF EMISSION REDUCTION OBLIGATIONS OR EMISSION AUTHORIZATIONS AND EXCLUDING PROGRAM DEVELOPMENT AND ADMINISTRATIVE COSTS, IMPLICATES STATE FISCAL YEAR SPENDING AS DEFINED IN SECTION 24-77-102. NOTHING IN THIS SUBSECTION (1)(e) ALTERS ANY REQUIREMENT TO PREPARE A COST-BENEFIT ANALYSIS UNDER SECTION 24-4-103 (2.5) OR ANY REQUIREMENT TO ISSUE A REGULATORY ANALYSIS UNDER SECTION 24-4-103 (4.5). NOTHING IN THIS SUBSECTION (1)(e) DIMINISHES THE AUTHORITY OF THE PUBLIC UTILITIES COMMISSION UNDER THE PUBLIC UTILITIES LAW, INCLUDING SECTIONS 40-3-101 AND 40-3-102.

(XI) AS USED IN THIS SUBSECTION (1)(e):

(A) "COST-EFFECTIVE" OR "COST-EFFECTIVENESS" MEANS THE COST PER UNIT OF REDUCED EMISSIONS OF GREENHOUSE GASES EXPRESSED AS CARBON DIOXIDE EQUIVALENT.

(B) "GREENHOUSE GAS" INCLUDES CARBON DIOXIDE, METHANE, NITROUS OXIDE, HYDROFLUOROCARBONS, PERFLUOROCARBONS, NITROGEN TRIFLUORIDE, AND SULFUR HEXAFLUORIDE, EXPRESSED AS CARBON DIOXIDE EQUIVALENT.

(C) "RETAIL ELECTRICITY SALES" MEANS ELECTRIC ENERGY SOLD TO RETAIL END-USE ELECTRIC CONSUMERS.

SECTION 4. Appropriation. (1) For the 2019-20 state fiscal year, $281,588 is appropriated to the department of public health and environment. This appropriation is from the general fund. To implement this act, the department may use this appropriation as follows:

(a) $188,321 for use by the air pollution control division for program costs, which amount is based on an assumption that the division will require an additional 2.0 FTE; and

(b) $93,267 for the purchase of legal services.

(2) For the 2019-20 state fiscal year, $93,267 is appropriated to the department of law. This appropriation is from reappropriated funds received from the department of public health and environment under subsection (1)(b) of this section and is based on an assumption that the department of law will require an additional 0.5 FTE. To implement this act, the
department of law may use this appropriation to provide legal services for the department of public health and environment.

**SECTION 5. Safety clause.** The general assembly hereby finds, determines, and declares that this act is necessary for the immediate preservation of the public peace, health, and safety.