

MEMORANDUM OF NOTICE

Item Title: Request for Rulemaking on Amendments to Regulation 22 to Add Colorado Greenhouse Gas Program

Meeting Date: February 18-19, 2021

GENERAL DESCRIPTION

The petitioners are proposing to the Air Quality Control Commission (Commission) a new Part C and corresponding amendments to Part A of Regulation 22 to ensure attainment of Colorado's greenhouse gas (GHG) reduction goals set forth in the Colorado Air Pollution Prevention and Control Act (the Act) at Section 25-7-102(2)(g), C.R.S. These proposed rule amendments will help ensure that Colorado meets the State's numeric GHG reduction goals through quantifiable, verifiable, and enforceable measures, as required by the Act. Applicable to all documents that comprise EDF's rulemaking petition package, these proposed rule amendments do not, and could not, satisfy the Commission's independent outreach, consultation and rulemaking obligations under the Act at 25-7-105(1)(e), C.R.S., that only the Commission can and must discharge. The Commission could, however, use the proposed rule amendments as a starting point from which the Commission may undertake its independent outreach, consultation and rulemaking responsibilities.

Part A, Greenhouse Gas Reporting

The proposed amendments to Part A will establish GHG reporting requirements for fuel suppliers and importers based upon the emissions resulting from the combustion or oxidation of the fuel distributed or sold in Colorado. These changes are required to implement Part C for the important source category of fuel suppliers and importers.

Part C, Colorado Greenhouse Gas Program

This proposed part establishes a binding, declining emission limit across most of Colorado's major sources of GHG emissions, while enabling the use of cost-effective emissions trading system for compliance with that limit. The limit is set to meet Colorado's GHG reduction targets, assuming conservative estimates about projected emissions from sources not subject to the limit over the course of the upcoming decade. Entities that are subject to this regulation will be required to meet a compliance obligation for each compliance period. On an annual basis, each covered entity must report its emissions and the emissions for which it is responsible and surrender the appropriate number of compliance instruments to account for these emissions. Compliance instruments may be either allowances or offset credits, subject to limitations.

The proposed Part C establishes state-wide annual allowance budgets beginning in calendar year 2022, which have been calculated to put the state on a path to meeting its emission reduction targets for 2025, 2030, and 2050. The proposed Part C provides for allowance allocation to certain types of entities and for certain types of projects, with a strong emphasis on empowering and providing benefits to disproportionately impacted communities through pollution-monitoring and pollution-mitigation projects, with input from community members. The proposed Part C also establishes an allowance consignment auction through which regulated sources may acquire allowances. Allowances may be transferred or banked under certain conditions and with certain restrictions.

The regulation provides for the use of offset credits for some sources, generated through offset projects, to meet an entity's compliance obligation with certain restrictions. Offset projects are subject to Commission-approved offset protocols.

Part D

Current Regulation 22, Part C is redesignated Part D.

Part E

Current Regulation 22, Part D is redesignated Part E. In addition, Part E is amended to reflect the basis, specific statutory authority, and purpose of proposed amendments to Part A and the newly proposed Part C.

WHAT IS IN THIS PACKAGE?

Attachments to this Memorandum provide details on the proposal as follows:

- Proposed Regulation Language - Regulation 22, Parts A and C
- Proposed Statement of Basis, Specific Statutory Authority and Purpose
- Initial Economic Impact Analysis
- Range of Regulatory Alternatives (Included in Memorandum of Notice)

EXPLANATION OF THE PROPOSED RULE

The petitioners are proposing Regulation 22, Part C and amendments to Regulation 22, Part A to the Commission to meet the requirements the General Assembly set forth in Sections 25-7-140(2), 25-7-105(1)(e), and 25-7-102(2)(g), C.R.S., directing the Commission to establish rules and regulations to cost-effectively allow the state to meet its greenhouse gas emission reduction goals.

Part A, Greenhouse Gas Reporting

This proposed regulation will amend Part A, to fill a gap in reporting, by establish monitoring, recordkeeping, and reporting requirements for fuel importers or fuel suppliers which import into the state or supply fuel the full combustion of which would create 25,000 metric tons or more of carbon dioxide equivalent (CO₂e) annually. Currently entities that import fuel into the state and fuel suppliers are generally not required to report directly to the State pursuant to Part A. Under the proposed amendment to Part A, the GHG emissions reported must be calculated based on the quantity of fuel distributed or sold in Colorado.

Part C, Colorado Greenhouse Gas Program

The proposed regulation establishes a cost-effective GHG reduction program for most of the state's major sources by creating a binding, declining limit on allowable pollution from covered sources and creating an emissions trading system for flexible compliance.

Part C would apply to the following entities whose emissions or emissions for which they are responsible equal or exceed specified thresholds for inclusion:

- Operators of a facility within Colorado that has one or more of the following processes or operations:
 - cement production;
 - cogeneration;

- glass production;
- hydrogen production;
- iron and steel production;
- lead production;
- lime manufacturing;
- natural gas processing plants;
- nitric acid production;
- petroleum refining;
- pulp and paper manufacturing;
- self-generation of electricity; or
- stationary combustion.
- First deliverers of electricity:
 - owners or operators of electricity generating facilities operating in Colorado; or
 - entities that import electricity into Colorado.
- Suppliers of natural gas:
 - a public utility gas corporation operating in Colorado;
 - a publicly owned natural gas utility operating in Colorado; or
 - an operator of an intrastate pipeline that distributes natural gas directly to end users.
- Suppliers of reformulated blendstock for oxygenate blending (RBOB) and distillate fuel oil that are a position holder of RBOB, distillate fuel oil No. 1 and/or distillate fuel oil No. 2; or an fuel importer that imports one or more of such fuels into Colorado outside the bulk transfer/terminal system;
- Suppliers of liquified petroleum gas (LPG):
 - an operator of a refinery that produces LPG in Colorado;
 - an operator of a facility that fractionates natural gas liquids to produce LPG; or
 - an importer of LPG into Colorado.
- Suppliers of liquefied natural gas (LNG) and compressed natural gas (CNG):
 - facilities that make LNG products or CNG products by liquifying or compressing natural gas received from interstate pipelines; and
 - importers of LNG and CNG.

Covered entities do not include sources exempt per § 25-7-109(8)(a), C.R.S, or oil and gas production facilities which are being addressed by the Commission in other rulemaking efforts.

Each covered entity must report its emissions and the emissions for which it is responsible for each year. For each covered entity, a compliance obligation will be established for each compliance period and the covered entity must surrender one compliance instrument for each metric ton of CO₂e that the covered entity emits or for which it is responsible during the compliance period. A compliance entity must also surrender compliance instruments equal to 30 percent of its emissions each year. Some covered entities may face additional obligations as described below.

The regulation establishes state-wide annual allowance budgets beginning in 2022, and which will decline over time to put the state on a path to meeting its emission reduction targets. The regulation provides for the allocation of allowances to certain types of covered entities, including Colorado retail electricity sellers with clean energy plans that meet certain conditions; Colorado retail electricity sellers without a clean energy plan for the benefit of low-income customers; natural gas utilities for the benefit of low-income customers; and energy-intensive, trade-exposed (EITE) entities meeting certain conditions. Allowances will also be allocated to the cost-control account, which is the holding account in which allowances are held to mitigate any allowance price volatility.

Allowances will also be allocated to non-compliance entities or for certain types of projects if there are allowances remaining in the annual allowance budget after the allocations to the enumerated covered entities and the cost-control account with a strong emphasis on empowering and providing benefits to disproportionately impacted communities through pollution-monitoring and pollution-

mitigation projects, with input from community members. Project categories and non-compliance entities eligible for allowance allocation include, subject to certain conditions and according to specified proportions of the remaining allowances: transportation decarbonization projects; eligible Indian tribes; natural and working lands projects; and disproportionately impacted communities and just transition assistance. In every allocation decision, the program director must consider whether the project will benefit disproportionately impacted communities, including by reducing harmful air pollution in those communities or deploying clean technologies in those communities. Projects that monitor harmful air pollution in disproportionately impacted communities will receive allowances in each round of allocations. The regulation establishes a climate board, comprised of members appointed by the Commission, which will advise the Program Director in allocating these allowances. The climate board will include representatives of disproportionately impacted communities and solicit feedback on its recommendations from community members.

The regulation establishes an allowance auction through which entities may acquire allowances and provides procedures and requirements related to: establishing eligibility to participate in an auction; administration of auctions; bidding; bid guarantees; the allowances offered for sale at each auction; auction purchase limits; determining winning bidders and settlement price; and distributing allowances to winning bidders. Allowances may be transferred or banked; however, the regulation prohibits certain types of trading.

The regulation provides for the use of offset credits, generated through offset projects, to meet an entity's compliance obligation with certain restrictions. Offset projects are subject to Commission-approved offset protocols. The requirements for offsets credits are designed to ensure that GHG emission reductions or GHG removal enhancements are real, additional, quantifiable, permanent, verifiable, and enforceable—and secure reductions that provide local benefits to Colorado.

The regulation also establishes enforcement mechanisms and penalties for failure to surrender a sufficient number of compliance instruments to meet a compliance obligation.

The regulation requires that facilities that violate air pollution control requirements and emit air pollutants that adversely affect disproportionately impacted communities, as well as facilities that contribute to unacceptable adverse cumulative air pollution impacts on a disproportionately impacted community, reduce their GHG emissions in line with the statewide budgets, regardless of the number of allowances they hold.

Finally, the regulation provides procedures for the Commission to approve linkages with external GHG emissions trading systems and requirements for interchange of compliance instruments if the Commission approves a linkage.

MATERIALS CONTAINED IN THE PROPOSED RULE

The draft version of the proposed revisions to Regulation Number 22 is attached. The attachment shows proposed amendments to Part A, newly proposed Part C, redesignating prior Part C to become Part D, redesignating prior Part D to become Part D, and proposed amendments to Part E.

PUBLIC MEETINGS

Throughout 2020, the Commission has publicly engaged with the issue of its role in ensuring that the State meets its GHG reduction targets. At its February 22, 2020 meeting, the AQCC was briefed on state climate reduction targets by senior officials from a number of senior state officials, received public comment and engaged with a consultant retained by the Colorado Energy Office. At and before this same meeting, the Commission received a report published by M.J. Bradley & Associates on the large gaps between current and projected emissions and received public comment on same. At its April 2020 meeting, the Commission engaged on these state GHG climate issues, including discussion of

market-based solutions. At the Commission's May 2020 meeting (and as part of the rulemaking hearing on Regulation 22), several commissioners discussed the importance of taking additional actions, steps, and rulemakings to ensure that the emission reduction targets are met, including, possibly, through an economy-wide program. In addition, as part of the Regulation 22 rulemaking hearing in May 2020, the Commission considered a proposal to add fuel suppliers to the list of entities required to report emissions under that regulation and while it was not adopted, some Commissioners have subsequently discussed the potential for future inclusion. In June 2020, the Commission focused a major portion of its retreat on greenhouse gas emissions reductions, including regulatory and non-regulatory mitigation strategies, global warming potentials for methane, monitoring, and the state's GHG inventory. At the June 2020 Commission meeting, the Commission, the Division, the Colorado Energy Office, and Energy and Environmental Economics conducted a work session regarding the State's Greenhouse Gas Roadmap. As part of this process, the Division presented a list of potential sector-by-sector actions to make progress toward meeting the emission reduction goals. The State also solicited public comments on the Roadmap strategies. In September 2020, the Commission conducted a rulemaking hearing on pre-production monitoring requirements for the oil and gas industry, among other requirements. At the Commission's October 2020 meeting, the Commission and public received a briefing on the GHG Emission Reduction Roadmap and receive extensive public comment—including from local elected officials and state legislators—about the importance of adopting regulations that result in quantifiable, enforceable emission reductions consistent with the state's targets.

The Commission also agreed to establish a GHG strategy subcommittee, which first met on July 16, 2020, and subsequently in August and October 2020. At the Commission's August, September and October 2020 meetings, it took additional public comment regarding the state's greenhouse gas emissions reduction targets and possible strategies to achieve those targets. A significant focus for the subcommittee was evaluating regulatory options to "backstop" expected reductions from Commission-adopted performance standards as well as other initiatives that may be undertaken by other agencies. The Commission solicited comments on backstop proposals, including sector-specific emission caps and alternative designs in advance of their September 25th, 2020 meeting. In July 2020, Resources for the Future released a comprehensive report evaluating the use of multi-sector cap programs to meet Colorado's emissions targets. The analysis highlights the efficacy of such program design, while underscoring the significant cost savings compared with only pursuing a sector-by-sector approach, and it became part of the public record as the subcommittee was discussing backstop proposals. The report also underscores the compatibility of a cap-and-trade program with various sectoral policies, while noting the role that a limit-based program can play in ensuring emission reduction outcomes regardless of what happens with the efficacy of particular performance standards, or how assumptions about technology costs and relative fuel costs change over the upcoming decade.

Petitioners participated throughout in the ongoing work of the Commission and the subcommittee on these issues. Building upon this public process, petitioners prepared the petition by a review of extensive literature outlining the role that a multi-sector limit on pollution, coupled with an emissions trading program, could play to cost-effectively reduce greenhouse gas pollution. In addition, the petitioners had numerous conversations with other organizations and climate policy experts that have expressed interest in climate regulation in Colorado to discuss and refine the concepts embodied in the Petition, including discussing the petition with some community-based organizers. These program includes a number of design elements to intended to empower and provide benefits to disproportionately impacted communities.

Petitioners held a virtual stakeholder meeting on January 29, 2021. APCD sent the notice for the meeting to their public stakeholder list. Petitioners also sent targeted emails to the mailing lists provided by the APCD, including the email list for Disproportionately Impacted (DI) Communities (107 contacts) and "other," (32 contacts) both in English and in Spanish, along with the offer for translation services to be available at the meeting. More than 200 registered and 140 participated in the meeting,

including 9 who provided oral public comments. Petitioners invited and received public comments prior to and during the stakeholder meeting, orally and in writing. Petitioners dedicated a specific email address to receiving comments on the petition and have received three written comments and four questions. One written comment has been posted to the Commission website. Petitioners have offered the opportunity for one-on-one virtual meetings for any stakeholder or member of the public interested, and have held nearly three dozen such meetings.

BACKGROUND ON THE DEVELOPMENT OF THE RULEMAKING PROPOSAL

What is the problem?

State law requires this Commission to timely promulgate regulations that will ensure timely progress toward meeting the state's science-based greenhouse gas (GHG) emission targets, compared to 2005 levels, of at least 26% by 2025, 50% by 2030, and 90% by 2050. Sections 25-7-102(2)(g), 25-7-105(l)(e)(II), C.R.S. The law is specifically "intended to facilitate prompt action to address greenhouse gas emissions and nothing in this section or the emissions inventory provisions of 25-7-102 shall be construed to slow, interfere with or impede state action to timely adopt rules that reduce greenhouse gas emissions to meet the state's greenhouse gas emission reduction goals." Section 25-7-140(5), C.R.S. The Commission was required to publish, by July 1, 2020, a notice of proposed rulemaking that proposed rules to implement measures that would cost-effectively allow the state to meet its greenhouse gas emission goals. Section 25-7-140(2)(a)(III), C.R.S.

These and other state laws and policies recognize that climate change is impacting Colorado's communities and economy. Specifically, the General Assembly has acknowledged that many climate impacts "disproportionately affect rural communities, communities of color, youth and the elderly, and working families" and that climate change "adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life." § 25-7-102(2)(b). Accordingly, the legislature has directed that GHG emissions must be reduced across the many sectors of our economy. Colorado has established specific GHG reduction goals to help abate GHG emissions and mitigate the impacts of climate change. The General Assembly tasked the Commission with adopting and implementing regulations to enable the state to meet the GHG emission reduction targets.

Although the State, primarily through the Commission, has taken steps to reduce GHG emissions (including adopting zero emission vehicle standards, reducing methane emissions from the oil and gas sector, securing commitments for early retirements for coal-fired powerplants, and requiring the phaseout of certain HFC products, among others), research shows that these efforts are not close to sufficient to put the state on a path to achieving reductions consistent with the GHG emission reduction targets.

Climate change does not evenly impact all communities; some communities experience disproportionate harms resulting from climate change. These communities are often located in areas that experience ongoing or historic harms from air pollution. Recognizing this, the legislature required that the Commission's regulations to achieve the emission reductions consistent with the state targets must provide for "ongoing tracking" of sources of emissions that adversely affect "disproportionately impacted communities," as well as must "include strategies designed to achieve reductions in harmful air pollution affecting those communities." Disproportionately impacted communities include those where multiple factors, including both environmental and socioeconomic factors, are present and "contribute to persistent environmental health disparities." Section 25-7-105(l)(e)(II)-(III), C.R.S. In developing regulations to meet the state's emission targets, the Commission must consider, among other things, opportunities to incentivize pollution abatement in disproportionately impacted communities. *Id.* § 25-7-105(l)(e)(VI). The rule that is the subject of this Petition includes such design.

Reducing emissions of short-lived climate pollutants (e.g. methane) - which govern the rate of warming - is crucial for slowing the pace of warming and limiting associated damages. On the other hand, reducing emissions of long-lived climate pollutants (e.g., carbon dioxide) - which govern the maximum extent of warming - is crucial for limiting the overall amount of warming we experience in the long-term—and the extent of the damages we experience. Long-lived climate pollutants can last for centuries in the atmosphere, so much of the pollution being emitted today will linger in the atmosphere for decades to come and continue to exacerbate the climate damages Colorado is already experiencing.

How does this proposed rule help solve the problem?

To limit the cumulative buildup of carbon dioxide in the atmosphere—and avoid the worst impacts of climate change—we must ensure that total reductions in carbon dioxide over time are consistent with the Intergovernmental Panel on Climate Change assessments of carbon dioxide budgets that estimate the cumulative amount of carbon dioxide that can be emitted. Accelerating near-term reductions while putting emissions on a consistent and persistent downward trajectory over the course of this decade that aligns with estimated carbon dioxide budgets is critical to addressing the problem.

The proposed rule will establish a cost-effective, economy-wide emissions trading program that will ensure that Colorado achieves the cumulative reductions consistent with meeting its GHG reduction targets. Through establishing declining statewide annual allowance budgets, the Colorado Greenhouse Gas Program will put the state on track to meet its important GHG reduction goals. The program does not preclude the Commission or other agencies from adopting complementary measures to aid in the achievement of these objectives. This program can serve as a backstop to these complementary measures. Furthermore, the program will allocate allowances to certain entities and projects to advance equity by reducing costs experienced by low-income customers and by empowering and providing benefits to disproportionately impacted communities through pollution-monitoring and pollution-mitigation projects, with input from community members.

How was the rule developed?

Petitioners evaluated extensive literature outlining the role that a multi-sector limit on pollution, coupled with an emissions trading program, could play to cost-effectively reduce greenhouse gas pollution. Petitioners evaluated expected abatement from high-ambition sectoral policies, and evaluated cost-per-ton estimates between various approaches. Petitioners then researched GHG emissions trading systems in other U.S. states, particularly California's regulation and the program proposed in Oregon under HB19-2020, to inform the development of the proposed regulation. In addition, Petitioners had numerous conversations with other organizations and climate policy experts that have expressed interest in climate regulation in Colorado to discuss and refine the concepts embodied in the Petition. Petitioners also engaged with the Division on ways to conduct additional stakeholder outreach, and have reflected stakeholder feedback in the final draft regulation and rulemaking package..

What is the fiscal and economic impact of the proposed rule?

Please see the petitioners' Initial Economic Impact Analysis for details. As outlined in that document, the economic benefits greatly outweigh the costs under a wide range of assumptions.

How does the rule compare to federal requirements or adjacent state requirements?

Federal requirements:

Part A. Greenhouse Gas Reporting

Federal Part 98 requires fuel suppliers that import or export product equivalent to 25,000 metric tons of CO₂e or more to report annual GHG emissions. Through Part A, petitioners propose building upon existing federal reporting requirements and closing gaps in order to establish a more robust and accurate GHG inventory for Colorado and to provide information to the Division necessary to support Part C, Colorado Greenhouse Gas Program.

Part C. Colorado Greenhouse Gas Program.

There are no federal regulations applicable to provisions of Part C and Part C does not conflict with any applicable current federal regulations.

Other State (Arizona, New Mexico, Utah) requirements:

At this time, none of these states have a program comparable to the proposed regulations. New Mexico is evaluating the adoption of a comprehensive market-based program that sets emission limits to reduce carbon dioxide and other greenhouse gas pollution consistent with the objective of achieving a statewide reduction in greenhouse gas emissions of at least 45% (compared to 2005 levels) by 2030. New Mexico recently released a state-level climate report (see “New Mexico Climate Strategy: 2020 Progress and Recommendations”) outlining that this is a priority for stakeholder conversations in 2021.

How will the rule be implemented?

The amended rules will be published on the Commission’s website and emailed to subscribers to the Division’s email lists. Division staff will be informed of the new regulations to ensure the changes will be reflected in applicable reporting and regulatory actions. Any necessary guidance will be developed and shared with stakeholders. Other implementing actions include designating the program director, establishing an advisory board, setting up the administration of the allowance auction program per the regulations, establishing auction reserve pricing, distributing allowances in advance of auctions, and holding auctions per the regulations (with the initial action to be held in the first quarter of 2022).

Are there time constraints?

Section 25-7-140(2)(a)(III), C.R.S., of the Act directs the Commission to propose rules by July 1, 2020 that would “implement measures that would cost-effectively allow the state to meet its [GHG] emission reduction goals.”

What if the Air Quality Control Commission does not adopt the proposed rule?

The General Assembly has established GHG emission reduction goals for the state and required the Commission to adopt rules to cost-effectively achieve those reduction targets. Part C provides a program to cost-effectively meet those goals. If Part C (and the associated amendments in Part A) are not adopted, the Commission will need to quickly adopt another regulation or set of regulations requiring reductions in GHG emissions consistent with the trajectory towards the state goals. Any regulations adopted by the Commission must provide certainty over emission reduction outcomes.

If the Commission chooses to only adopt a suite of sector-specific regulations, and the estimated reductions are consistent with the abatement from the proposed program, the cost-per-ton of CO₂e reduced will be significantly higher. Any attempt to create a cost-optimized approach to sector-specific reduction requirements would also require making a decision today about which decarbonization strategies are cost-effective today as well as a decade from now. Reductions not achieved in one sector will require more-stringent requirements for other sectors of the economy to achieve the state’s GHG reduction goals.

Moreover, several analyses have demonstrated that a sector-specific approach may not lead to the statutorily-required emissions reductions, particularly if the focus is on adopting performance standards that allow for total emissions to continue to increase even while improving emissions intensity. The Colorado Greenhouse Gas Program provided in Part C will most cost-effectively achieve the state's GHG reduction goals by providing regulatory flexibility to covered entities and mechanisms to achieve GHG reductions across numerous sectors of Colorado's economy. This program will also best ensure that the state will meet these targets, acting as a backstop for other complementary measures that could be adopted by the AQCC, other agencies or through non-regulatory programs.

If the Commission does not adopt the proposal, there is not an adequate alternative yet proposed for timely adoption *that would also create an immediate incentive to accelerate near-term reductions*. Every ton of carbon dioxide that is emitted today will contribute to the cumulative build-up of pollutants in our atmosphere. The proposed regulation has a built-in incentive to drive as much early abatement as possible.

The proposal also achieves significant reductions in conventional pollutants. Accelerated action will drive more ambitious near-term reductions in health-harming contaminants, and the design of this program strives to ensure that the co-pollutant benefits of reductions in greenhouse gases are targeted to disproportionately impacted communities. The program does so not only through allocations of allowances to clean-energy and clean-transportation projects in disproportionately impacted communities, but also by requiring greenhouse gas emission reductions consistent with the decline in the state's overall levels from facilities that have unacceptable adverse cumulative air pollution impacts on these communities.

Finally, the program places the value inherent in an emissions-trading program with its rightful beneficiaries—the people of the state—to ensure that it is utilized to advance critical air pollution mitigation and community priorities. An emissions-trading program presents the best opportunity to drive significant reinvestment in communities and implement mitigation priorities. Without adopting this program, the Commission will not have the most powerful tool available to fulfill its myriad statutory obligations.

Range of Regulatory Alternatives

Under the statutory mandates in sections 25-7-105(1)(e)(II) and 25-7-140(2)(a)(III), C.R.S., the Commission must take action to achieve the state's greenhouse gas emission reduction goals. Accordingly, the no-action alternative is not legally viable. Rather, the Act establishes binding emission reduction goals that apply to "statewide greenhouse gas pollution," defined as "the total net statewide anthropogenic emissions of" specified greenhouse gases. Sections 25-7-102(2)(g), 25-7-103(22.5), C.R.S. To achieve these goals, the Commission either must promulgate a regulation that limits emissions across the sectors of Colorado's economy, as in the proposed Colorado Greenhouse Gas Program, or it must regulate emissions from sources or sectors individually.

A prominent alternative to the proposed economywide program would utilize separate regulatory tools to reduce emissions in the transportation, buildings, electricity, and other sectors, with an emissions backstop that would ensure the necessary reductions from each sector through source-specific emissions limits.¹ For example, for the transportation sector, the Commission could require greater sales of electric vehicles in Colorado, adopt a low carbon fuel standard that reduces the carbon intensity of fuels sold in Colorado over time, and—because neither of these programs on their own as currently contemplated could drive the total abatement necessary from this sector— establish a sector-specific overall emission limitation implemented through a permit-holding requirement applicable to

¹ See Comments of Western Resource Advocates submitted to the AQCC GHG Strategy Subcommittee (July 2020), <https://drive.google.com/drive/folders/1q1DXlDhefPn-cUKboyNjXm2DGDM30BOy>.

fuel suppliers.² Similarly, for the buildings sector, the Commission could adopt a performance standard that requires natural gas utilities to lower the carbon intensity of the fuel they supply and an overall emission limitation that natural gas utilities could achieve through energy efficiency measures, electrification of buildings, and use of renewable natural gas.³ To reduce emissions in the electricity sector, the Commission could enforce clean energy plans submitted under the Act and impose a sector-wide emissions limit, potentially allocated among electric utilities.⁴ Other sectors would also need to be regulated in order to achieve the statewide greenhouse gas reduction goals.⁵ Furthermore, to guarantee the required reductions, the Commission could evaluate each sector's emissions before an upcoming statutory target year and impose predetermined source-specific emission limitations on those sectors whose emissions are not consistent with the statutory goals.⁶

Petitioners considered this type of sector-by-sector approach in developing the present proposal, with several modifications and variations. Under such an alternative, the Commission could require each sector's emissions to decline on a linear trajectory consistent with the statewide goals, and recommend a sector-wide flexible trading program.⁷ The Commission could ensure that each sector is following its pathway to the required reductions by activating predetermined source-specific emission limits within the sector if the sector exceeds its trajectory over any two-year period, on average.⁸ Accordingly, a sector-by-sector approach would ensure quantifiable and enforceable emission reductions consistent with the statute and present a viable regulatory alternative.

However, as was noted in the overview of the above sector-by-sector approach, an economywide emission limit such as the budgets provided in the proposed Colorado Greenhouse Gas Program would afford certainty that Colorado will achieve its greenhouse gas emission reduction goals, as required by statute.⁹ It would also provide expanded flexibility for sectors and enable the lowest-cost emission reduction opportunities, in whatever sector they exist, to be secured to meet the overall cap.¹⁰

An independent analysis of the costs and benefits of various regulatory approaches confirms that sector-by-sector overall emission limitations would be significantly more expensive than an economywide program.¹¹ To achieve the sector-specific 2030 emissions targets under the "HB1261 Targets Scenario" in the Colorado Energy Office's GHG Pollution Reduction Roadmap, relative to business-as-usual levels in 2030, the electric power sector would face a carbon price of less than \$15 per metric ton; industrial sources, more than \$400 per ton; and the transportation sector, more than \$600 per ton.¹² These abatement costs compare to an allowance price of \$74.43 in 2030 for a Colorado-only program and \$27.24 in 2030 for a program linked to other programs in the Western Climate Initiative.¹³ Because an economywide program would be more cost-effective and not result in

² *Id.* at 3-4.

³ *Id.* at 5-6.

⁴ *Id.* at 8.

⁵ *Id.* at 9.

⁶ *Id.* at 10-11.

⁷ Comments by Environmental Defense Fund on the "Potential Next Step Rulemaking for GHG Reductions" under consideration by GHG Strategy Subcommittee 11-12 (July 2020), <https://drive.google.com/drive/folders/1q1DXIDhefPn-cUKboyNjXm2DGDM3OBOy>.

⁸ *Id.* at 12.

⁹ Comments of Western Resource Advocates submitted to the AQCC GHG Strategy Subcommittee 12 (July 2020), <https://drive.google.com/drive/folders/1q1DXIDhefPn-cUKboyNjXm2DGDM3OBOy>.

¹⁰ *Id.*

¹¹ Marc Hafstead, Resources for the Future, Decarbonizing Colorado: Evaluating Cap and Trade Programs to Meet Colorado's Emissions Targets 28 (July 2020).

¹² *Id.*

¹³ *Id.* at 18, Table 4.

any disparities in abatement costs across sectors,¹⁴ petitioners have selected the proposed Colorado Greenhouse Gas Program over an alternative that imposes separate emissions caps on different sectors of the state's economy.

For the same reasons, petitioners have not proposed a sector-by-sector regulation that does not allow trading of emissions within each sector. The analysis discussed above concluded that the cost-effectiveness values it presented for sector-by-sector overall emission limitations represent a lower bound on the cost of achieving the same emission reductions through direct regulations that do not provide the flexibility to obtain least-cost emission reductions within the sector.¹⁵ Such an approach would also depend on an unrealistic assumption that the Commission could predict optimal pollution-control strategies for each sector over the next decade.¹⁶ A multi-sector cap-and-trade program allows sources to innovate and find the most cost-effective emission reductions over time.

Petitioners also considered varying key features of the proposed Colorado Greenhouse Gas Program, which would have resulted in meaningfully different regulatory frameworks. For instance, petitioners have included a mechanism for Colorado to issue offset credits to a variety of greenhouse gas-reducing projects in a separate section of the proposed regulation, which could be included in or excluded from a final rule. Offset projects do not reduce emissions from covered entities' facilities. Nonetheless, they do afford the same climate benefits as equivalent greenhouse gas emission reductions at covered entities' facilities; they leverage opportunities to reduce greenhouse gas emissions in Colorado through, for example, projects related to natural and working lands; and they improve the cost-effectiveness of the program by securing emission reductions in sectors not covered by the regulatory program. Indeed, the analysis discussed above found that decreasing the percentage of compliance instruments comprising offset credits from 6 percent to 3 percent would increase the price of an allowance in 2030 from \$75 to \$93.¹⁷ Because the statute requires the Commission to consider more-cost-effective emission reductions in its rulemaking¹⁸ and plainly authorizes an offsets component that may credit emission reductions achieved by sequestering carbon in carbon sinks,¹⁹ petitioners elected to include an mechanism for awarding offsets credits in the proposed Colorado Greenhouse Gas Program. However, petitioners chose to prevent usage of offset credits by sources that emit an air pollutant other than GHGs that adversely affects a disproportionately impacted community through localized harmful air pollution or that fails to comply with Title 25, Article 7, C.R.S. These program design features create a framework that provides a greater incentive for direct reductions in greenhouse gas emissions (and associated co-pollutants) at sources affecting disproportionately impacted communities and encouraging compliance with state air regulations more generally.

Finally, and importantly, petitioners considered an option in which the Colorado Greenhouse Gas Program would require a facility that emits or may emit an air pollutant other than greenhouse gases that results in air pollution that adversely affects disproportionately impacted communities to reduce its greenhouse gas emissions proportionately to the decline of the statewide budgets over the previous compliance period, if the facility does not employ best available control technology (BACT) for each

¹⁴ See C.R.S. § 25-7-105(1)(e)(VI) (“[T]he commission shall consider . . . the costs of compliance . . . and whether greater or more cost-effective emission reductions are available through program design.”)

¹⁵ Marc Hafstead, Resources for the Future, *Decarbonizing Colorado: Evaluating Cap and Trade Programs to Meet Colorado's Emissions Targets 28-29* (July 2020).

¹⁶ *Id.* at 29.

¹⁷ *Id.* at 25.

¹⁸ C.R.S. § 25-7-105(1)(e)(VI) (“[T]he commission shall consider . . . whether greater or more cost-effective emission reductions are available through program design.”)

¹⁹ See *id.* § 25-7-105(1)(e)(V) (“The implementing rules and policies may include . . . regulatory strategies that have been deployed by another jurisdiction to reduce multi-sector greenhouse gas emissions.”); see also *id.* § 25-7-103(22.5) (“‘Statewide greenhouse gas pollution’ means the total *net* statewide anthropogenic emissions of” greenhouse gases. (emphasis added)).

such harmful pollutant. Such a requirement would create a meaningful incentive for entities to reduce a wide variety of pollution at facilities that harm disproportionately impacted communities. Petitioners have not included this feature in the proposed Colorado Greenhouse Gas Program. Instead, petitioners have included a more direct provision that would impose the same greenhouse gas reduction requirement (a declining facility-specific limit) on any facility that adversely affects disproportionately impacted communities and that have violated an air pollution standard during the previous compliance period, or any facility that contributed to unacceptable adverse cumulative air pollution impacts on any disproportionately impacted community. It would be straightforward to replace or supplement the included condition with the BACT option if stakeholders and the Commission ultimately conclude that this approach is preferable during the course of a rulemaking process that actively solicits input from residents of communities within this disproportionately impacted designation, as required by statute.

Contact for more information:

Please contact the following with any questions:

- Pam Kiely, Senior Director of Regulatory Strategy, US Climate, EDF, at pkiely@edf.org or 202.572.3284