



# Colorado Pathways to Reducing Carbon Pollution from the Transportation Sector

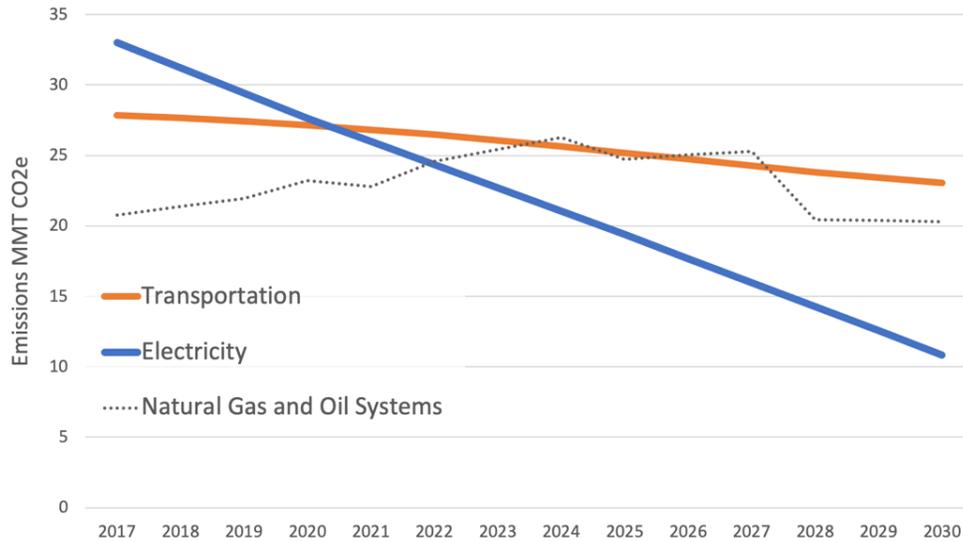
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To meet climate goals, Colorado must rapidly clean up transportation-related pollution.

**Transportation is now surpassing electricity generation as the largest source of climate-changing pollution in Colorado.**<sup>1</sup> (See Figure 1.)

- Transportation is responsible for about one-quarter of climate-changing pollution statewide (largely carbon dioxide pollution from fuel combustion). Including upstream emissions due to the extraction and refining of petroleum, transportation emissions are even larger.
- Almost two-thirds of Colorado's transportation emissions currently come from light-duty vehicles, with a bit more than 10 percent from medium and heavy-duty vehicles, 16 percent from aviation, and 11 percent from off-road vehicles and equipment.<sup>2</sup> (See Figure 2.)
- Under current policies, the transportation sector will continue to be the largest source of GHG emissions and is expected to account for about 22 percent of GHG emissions in the state by 2030 (not including upstream emissions from fuel extraction and processing).

Figure 1: During 2020, transportation will overtake electricity as Colorado's leading source of climate-changing pollution.



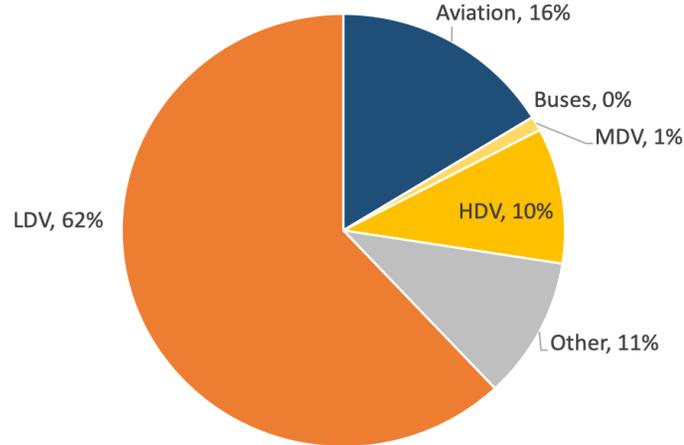
**Even though vehicle fuel efficiency is increasing, those gains are being partially offset by increased driving.**

- For example, pollution from driving in the Denver Metro area has increased more than 100 percent since 1990 – significantly faster than population growth. Per-capita emissions went up 16 percent, despite increases in vehicle efficiency.<sup>3</sup> This is due in part to sprawling development patterns, where destinations have been growing farther apart.

**Preventing future damage from climate change will require major efforts to reduce transportation carbon pollution.**

- Colorado enacted House Bill 1261 in 2019, setting targets to reduce climate-changing pollution statewide 26 percent below 2005 levels by 2025, 50 percent by 2030, and 90 percent by 2050.<sup>4</sup>
- Initial results from the E3 Roadmap analysis suggest that the state will need to reduce transportation emissions by more than 40 percent from 2015 levels by 2030 in order to reach the 2030 economy-wide target.<sup>5</sup>

Figure 2: Sources of modeled GHG emissions from the transportation sector in 2020.



**To reach the HB-1261 targets, the state must shift the vehicle fleet to zero-emission technology and clean fuels, while also reducing overall transportation demand.**

- All new light-duty vehicle sales must be zero emission by no later than 2035, as reflected in the June E3 Roadmap presentation to the AQCC.<sup>6</sup> There's no time to waste. The National Renewable Energy Laboratory estimates that even once we reach the point where every new car or SUV is electric, it will take another 15 years to reach 90 percent electrification of the overall fleet.<sup>7</sup>
- All new medium- and heavy-duty trucks and off-road equipment must be zero emission by no later than 2040.<sup>8</sup> Hard-to-electrify segments (such as air travel) must fully shift from petroleum-based fuels to net-zero carbon alternatives by no later than mid-century.
- Reducing overall transportation energy demand will make it easier for Colorado to achieve emissions targets, reduce required investments in zero emission vehicles and infrastructure, and deliver important social benefits. One recent analysis for achieving U.S. climate targets suggests reducing urban vehicle miles traveled (VMT), and associated fuel consumption and pollution, on the order of 18 percent by 2030, by growing smarter and providing alternative transportation options beyond driving.<sup>9</sup> Colorado should take active steps to improve land-use efficiency (including providing affordable housing with nearby access to employment and consumer necessities), increase active transportation, shift travel from high-emission to low-emission vehicles, invest in more efficient modes (including public transit and shared vehicles), and promote continued telework.
- These targets are consistent with the national trajectory mapped out in the June 2020 Report of the U.S. House of Representatives Select Committee on the Climate Crisis.<sup>10</sup>

## The following principles should guide state action:

### **Increase the cost of polluting and inefficient transportation.**

- Increasing the cost of activities that generate pollution will make climate-friendly transportation options more attractive and directly help lower emissions, while also creating new sources of revenue to invest in solutions.

### **Use new revenue to improve transportation energy efficiency and reduce pollution.**

- Transitioning to electric transportation and smart growth will save society money and deliver large net benefits.<sup>11</sup> However, unlocking those benefits will require up-front investment. For one example, electric buses currently have higher up-front costs than conventional diesel buses, even though the electric technology has a lower overall lifetime cost of ownership.<sup>12</sup> Purchase subsidies can help accelerate new technology adoption in fleets in the near term, until manufacturing volumes reach the point where the up-front cost of clean vehicles are equal to or less than combustion vehicles.
- Colorado’s climate policy should help secure the investment dollars we will need to accelerate progress on the necessary timeframe, by funding infrastructure, expanding incentives, and launching new programs. New investments will be essential to ensure that the benefits of climate action will be shared widely and equitably by all Coloradans.

### **Adopt policies that in combination are sufficient and reasonably certain to achieve emissions targets, including regulation, incentives and both private and public investment.**

- House Bill 19-1261 states: “The commission shall timely promulgate implementing rules and regulations,” [...] “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 Air Quality Control Commission should take action sufficient to reach those targets on time. Decision-makers at all other levels of government should enact supportive policies that will make reaching the targets easier and cheaper, including transportation energy efficiency measures. The Air Quality Control Commission should take into account those supporting measures, but the Commission holds the final responsibility for ensuring that the mandatory targets will be reached.

The Colorado Air Quality Control Commission (AQCC) should consider the following policy options to achieve the necessary GHG emissions reductions:

**Fuel Distributor Emissions Permits and Caps:** *Establish a revenue-generating limit on transportation global warming pollution.*

- The AQCC should require fuel distribution companies to acquire a permit for every kilogram of carbon dioxide equivalent of transportation fuel distributed for sale in Colorado, applied at the wholesale level. Under this rule, fuel distribution companies would be required to acquire permits before delivering fuel to any kind of fueling station, public or private.
- The AQCC should limit the available number of permits to constrain greenhouse gas pollution from fuel combustion. Further, the AQCC should annually reduce the number of available permits, gradually cutting the number of permits to the equivalent of 17 million metric tons of CO<sub>2</sub>e by 2030, limiting emissions to the trajectory described by the E3 Roadmap estimate of transportation emissions in a HB19-1261 compliance scenario.
- The AQCC should ensure that the permit system is revenue-generating. This is essential to help drive necessary investments in zero-emission transportation. Revenue generation could be accomplished in several potential ways:
  - The AQCC could auction permits, letting market demand set the price. This method would ensure that all fuel distribution companies have an equal opportunity to acquire fuel distribution permits. If the AQCC chooses this route, it should establish a price floor to ensure a minimum amount of revenue. (For example, a price floor of \$2.50 per metric ton of carbon dioxide equivalent would generate at least \$500 million from 2022 through 2030, based on the E3 HB19-1261 compliance emissions trajectory. For context, at the social cost of carbon used in PUC proceedings under SB19-236, baseline transportation emissions would cause more than \$11 billion in damages over that same time period). The AQCC, should it so desire, could also establish a cost containment mechanism to prevent prices from rising above a certain level – for example, the 2020 social cost of carbon (which is \$42 per metric ton). If the AQCC does create a cost containment mechanism, it should take care to maintain the integrity of the overall limit on emissions.
  - Alternatively, the AQCC could distribute available permits between fuel distribution companies in proportion to their historic Colorado sales, and set a fixed permit fee.

- Resulting revenue should be handled in a way designed to have minimal TABOR consequences.<sup>13</sup> Ideally, the state could collect and manage revenue as a climate impact fee. However, the AQCC could also set up the program as a consignment auction, where fuel distribution companies simply put the revenue required to purchase permits aside in a separate bank account within the business, with rules governing how the company must spend the money in that account for public benefit. In the consignment auction case, the government would never handle any of the funds.

**Transportation Emissions Reduction Program:** *Fund initiatives within the sector that will increase energy efficiency and reduce GHG emissions.*

- The AQCC should invest revenues generated by fuel distribution permit sales into measures that increase transportation energy efficiency and reduce pollution. This will make the limit on pollution easier to achieve and magnify the public benefits of the transition to a clean mobility system.
- Ideally the AQCC could put out a request for proposal and hire a third party to manage the funds generated by the program. For example, in the 1980s in Vermont, policy-makers decided to set up a third party administrator for electric utility energy efficiency programs (called [Efficiency Vermont](#)). Funded with a monthly fee on electricity and gas bills, the organization helps customers across the state save energy and money through energy efficiency programs and incentives. Similar operations exist in other states, such as [Energy Trust of Oregon](#). In Colorado, some precedent for this approach also exists - for example, [Energy Outreach Colorado](#) manages certain low-income energy efficiency programs for Xcel. Colorado could hire a company to administrate revenue from transportation carbon permits for public benefit, perhaps in a program called “Clean Transportation Colorado.”
- If TABOR complications would make such an arrangement difficult, the AQCC could set rules governing how regulated fuel distribution companies must use money set aside in a consignment account, directing those resources to emission reduction measures, including transportation energy efficiency. This arrangement would be analogous to the electric and gas utility efficiency programs currently overseen by the Public Utility Commission. In this case, the AQCC should require regulated entities to develop transportation energy efficiency and emissions reductions plans, describing how consignment revenues would be used. The AQCC should require companies to submit plans to the Commission for approval or modification, analogous to Demand Side Management plans that investor-owned utilities regularly submit to the Public Utilities

Commission.<sup>14</sup> The AQCC should also require regulated entities to publish regular reports demonstrating the actual results of program spending compared to initial goals.

- With either approach, investments should include subsidies for zero emission vehicle planning and deployment; clean fueling infrastructure; subsidies for VMT reduction measures; efficient transportation infrastructure, including transit service and operations, micro-transit, active transportation; and programs to drive efficient land-use. The AQCC should set criteria for prioritizing investments, including equity, effectiveness at reducing emissions per dollar invested, geographic diversity, and ensuring that everyone can equitably access co-benefits, such as healthier air quality and transportation cost savings.

**Low-Carbon Fuel Standard:** *Establish a limit on the carbon-content of transportation fuels.*

- The AQCC should supplement a limit on overall transportation carbon pollution (as described above) with a Low Carbon Fuel Standard to help drive further innovation and investment in clean fuels, including electricity, hydrogen and biofuels. This will be important to accelerate pollution reductions across the transportation sector, but will be particularly important for hard-to-electrify applications (such as aviation).
- The AQCC should limit the average carbon content per unit of energy of all transportation fuel in Colorado, and reduce the allowed carbon content limit each year by an amount sufficient to reasonably guarantee an overall transportation sector GHG emission reduction of 40 percent by 2030, as part of a suite of complementary policies.
- The AQCC could model a Low Carbon Fuel Standard based on successful programs that currently operate in [California](#) and [Oregon](#). (For example, California is currently aiming to reduce the carbon intensity of transportation fuel 20 percent below 2011 levels by 2030, working in concert with an overall economy-wide emissions limit and other policies designed to reduce transportation sector emissions in service of achieving a required statewide GHG emission target of 40 percent below 1990 levels by 2030).
- By providing transportation fuel with carbon intensity lower than the target, fuel suppliers would generate credits. Fuel suppliers that provide fuel with higher carbon intensity would generate deficits. Under the rule, each fuel supplier would be required to generate enough credits to offset its deficits – or acquire sufficient credits from other entities at market value. This would create an additional revenue source to support the deployment of clean fuels. Since state agencies would never directly handle funds, the policy should have no TABOR consequences.

**Enhanced Clean Cars Program:** *Work with allied states to improve the Clean Cars Program.*

- California will be updating the Low Emission and Zero Emission Vehicle Standards (aka the Advanced Clean Cars Program) in the next year or so. Colorado should join with other participating Clean Cars States to jointly advocate for improvements, with a minimum goal of achieving 80% light-duty ZEV sales by 2030, consistent with analysis of what will be required to hit emissions targets.<sup>15</sup> Colorado should consider, alongside California and other states, the feasibility of a 2030 target of 100 percent ZEV sales, as California Air Resources Board Chairwoman Mary Nichols recently suggested.<sup>16</sup> Colorado should also advocate for strengthening carbon emissions standards for internal combustion engines via the Low Emission Vehicle Program.
- As a reminder, Colorado must adopt the same rules as other Clean Cars states. The federal Clean Air Act only allows two emission standards - the advanced Clean Cars Program, or federal rules. Colorado cannot act independently of California and the other Clean Car States.
- The Air Quality Control Commission should plan to update Colorado's Clean Cars Program (Regulation 20) after California does so, and before the end of 2022. That timing will ensure at least two years lead time for auto manufacturers before the next compliance period begins in Model Year 2026, as required by the federal Clean Air Act.

**Advanced Clean Truck Rule.** *Adopt the recently finalized Advanced Clean Truck Rule.*

- In June 2020, California finalized the Advanced Clean Truck Rule, which requires vehicle manufacturers to deploy zero emission trucks as an increasing percentage of their sales. By 2030, the rule requires 30 percent of sales for class 2b-3 and class 7-8 tractors, and 50 percent of sales to ZEV for class 4-8 trucks, to be zero emission. By 2035, the rule requires 40% of class 7-8 tractors, 55% of class 2b-3 trucks, and 75% of class 4-8 truck sales to be zero emission.<sup>17</sup> Through 2040, California regulators estimate that the rule will save the public \$8.9 billion in health costs, save industry \$5.9 billion in transportation costs, prevent \$1.7 billion worth of carbon pollution, create more than 7 thousand jobs, and add \$280 million to the state GDP.<sup>18</sup>
- The Air Quality Control Commission should adopt the Advanced Clean Truck Rule in Colorado, which it can do under federal Clean Air Act authority. We anticipate that this rule would prevent on the order of 5 MMT of carbon dioxide pollution relative to business as usual through 2040 in Colorado (assuming the benefits in Colorado will be roughly proportional to California, with Colorado using about 18 percent as much diesel fuel as California in 2018).<sup>19</sup>

**Clean Transit Rule.** *Adopt a rule requiring transit agencies to purchase zero-emission vehicles.*

- The Air Quality Control Commission should adopt a rule requiring all transit agencies to gradually transition to a 100 percent zero-emission fleet. The rule could be modeled after a similar regulation adopted by California in 2018.<sup>20</sup> It should require an increasing fraction of buses purchased in a given year to be zero emission, reaching 100 percent of new purchases by 2029 with a goal for full transition to zero-emission buses by 2040. This policy should be undertaken in concert with robust financial support for transit agency infrastructure and operations, as well as increased community focus on transit-oriented development and convenient first-last mile connections.

**Clean Off-Road Vehicle Rule.** *Develop and adopt zero emission vehicle rules covering off-road vehicles and equipment.*

- The Air Quality Control Commission should develop and adopt rules requiring manufacturers to shift an increasing portion of new off-road vehicles and mobile equipment purchases to zero emission technologies, working in collaboration with California and other Clean Car Program states.

**Transportation Planning GHG Conformity Rules.** *Promote efficient land use by requiring local and regional planning organizations to set and achieve emission reduction targets.*

- The Air Quality Control Commission should require local governments, metropolitan planning organizations and CDOT to develop and implement GHG conformity plans, aligning land use and transportation infrastructure decisions with statewide goals to reduce transportation carbon pollution. The AQCC should set transportation-specific GHG targets and require state and local agencies to implement policies and focus investments on projects that will put Colorado on a path to hit those targets. These rules should focus on emissions reductions achieved through mode switching and land-use measures, rather than vehicle electrification – because local governments and planning organizations have most direct authority over development decisions.
- When considering individual transportation projects, government agencies should analyze the projected emissions from project alternatives and require that project-level analysis incorporate the effects of latent and induced demand. To evaluate the impacts of development and infrastructure decisions, transportation agencies and local governments

should use a \$46 social cost of carbon in their planning processes, as electric utilities are required to do for proposals at the Public Utilities Commission under SB19-236.

- Adding road capacity has proven to induce more driving and emissions. Travel demand research shows a 1:1 relationship between new road capacity and new traffic volumes in congested, high-growth areas.<sup>21</sup> Instead of building new road projects, state transportation and planning dollars should be directed toward projects that reduce GHGs by supporting new housing development near available jobs and community necessities (like grocery stores); and increasing funding for active low-carbon transportation options, such as walking, biking, and transit.
- According to a Smart Growth America study, a 10 percent increase in urban density is associated with a 1 percent decrease in household VMT.<sup>22</sup> When paired with complimentary policies and new investments in transit and active transportation, these smart growth policies can deliver even greater VMT and GHG reductions. A Massachusetts study quantified the impact of an integrated policy approach and found that a combination of smart growth policies could reduce state VMT by up to 15 percent by 2040.<sup>23</sup>

## To supplement and support the efforts of the Air Quality Control Commission:

Colorado should **modernize the gas tax** with electrification and the climate in mind, as described in the 2020 SWEEP report [\*Sustainable Transportation Funding for Colorado\*](#).

- Policymakers should raise the gasoline and diesel tax to a level designed to provide enough ongoing funding to build and maintain an effective, clean and efficient transportation system. For example, adding 20 cents per gallon to the state gas tax would return it to the level it would have been at today if the state had indexed it to inflation in 1991. At pre-COVID levels of driving and gasoline consumption, this would generate more than \$500 million per year.
- Policymakers should prepare in advance for future trends in inflation vehicle technology and driving patterns by extending the tax to all transportation fuels on an energy-equivalent basis; indexing the tax to inflation, and then indexing the tax to total fuel consumption. These policy reforms will ensure that all vehicle owners pay fuel tax, regardless of what kind of vehicle they drive. It will also ensure stable fuel tax revenues, even as Colorado implements policies that reduce overall vehicle travel.
- An increase in fuel prices motivates people to drive less and purchase more fuel-efficient vehicles. A meta-analysis of fuel price elasticity studies found that a 10 percent increase in fuel prices would reduce driving by 3.2 percent and improve fuel economy by 6 percent, leading to a 9.2 percent overall reduction in fuel consumption over a 15 year period, the average time required to turn-over the entire vehicle fleet.<sup>24</sup>

Colorado should **set a reduction target for vehicle miles traveled (VMT)** and require state and local agencies to implement policies and focus investments on projects that will put Colorado on a path to hit those targets.

- Reducing VMT is essential to quickly reducing emissions from the transportation sector. The E3 Roadmap modeling made it clear that cutting VMT must be an essential part of Colorado's strategy to reduce transportation carbon emissions. The most efficient way to reduce vehicle pollution is to eliminate vehicle trips altogether, particularly single-occupancy vehicle trips. A VMT Reduction Target would require state and local governments, MPOs and CDOT to report VMT per capita and ensure that future investments align with state goals to reduce VMT. This should be done in alignment and coordination with any potential greenhouse gas accounting requirement in planning. SWEEP suggests a target of 5 percent below 2019 VMT levels by 2030.

- To help get there, state and local governments should **promote efficient land-use**, and compact, transportation-efficient development, reforming transportation spending and land-use rules to conform with state goals. The Transportation Research Board has found that placing key destinations closer together via compact, efficient development could significantly reduce travel demand, on the order of 10 percent below business as usual by 2030.<sup>25</sup>
- The state and local governments should allocate funding to transportation projects on a competitive basis, based on how effectively they move people, and how effectively they reduce the distance people move (by placing things that people need, such as housing and jobs, in locations that are easy and convenient to access).
  - Currently, the state makes major decisions about how to use transportation dollars through arbitrary formulas that are written into state and federal statute. State fuel tax funds above 7 cents per gallon are allocated 60 percent to the State Highway Fund, 22 percent to counties and 18 percent to cities. Most of these funds have historically gone to roads, fueling increased levels of driving. Over the last 50 years, Colorado has spent well over 90% of transportation funding on road projects that increase driving demand and reinforce car dependency. Colorado’s failure to invest sufficiently in transit and active transportation infrastructure and service has prevented these sustainable modes of transportation from becoming viable options for most Coloradans. These funding formulas are outdated and should be reformed.
  - Instead, funding should be allocated to projects best able to achieve state goals, including reducing carbon dioxide pollution. Additionally, transportation spending decisions should be made in conjunction with land-use decisions as a coordinated whole. For example, the National Renewable Energy Laboratory has developed [a way to measure the investment in time, energy, and money necessary](#) for people in a given area to access destinations necessary for a high quality of life, including affordable housing, food, employment, and recreation. Both transportation infrastructure and tools – and land use decisions, such as a new apartment building – factor in. Planners should use a tool like this to predict how well proposed transportation and/or development projects would improve mobility and access to the key elements of life for the public – rather than just looking at vehicle throughput – and prioritize the projects that have the largest positive impacts.
- Additionally, the state and local governments should work together to reform zoning rules – in particular, eliminating exclusive single-family zoning and eliminating parking minimums. Instead, governments should facilitate increased density in targeted locations where it would bring the most benefit, especially near existing or planned transit stations.

The state and local governments should act comprehensively to **shift travel from high-emission to low-emission modes**.

- Shifting travel from high-emission to low-emission modes can help Colorado reduce carbon pollution. For example, rail transports 80 percent as much freight as trucks in the United States with only 8 percent of the emissions.<sup>26</sup> Similarly, transit generates only a third of the emissions as urban and suburban driving per person-trip.<sup>27</sup> And walking and biking (including e-bikes) have practically zero emissions.
- To promote mode-shifting:
  - The state and local government should increase funding for active transportation and public transit, while focusing road funding on maintenance of the existing road network.
  - Local governments should increase the cost of parking and consider congestion pricing mechanisms to help fund transit investments.
  - RTD should establish a region-wide EcoPass program, open to all residents.
  - Local governments should actively seek out opportunities to increase transit use. For example, cities could require tickets to large events, such as football games or concerts, to come with transit validation.
  - The state should create incentives for active transportation, including an e-bike subsidy, support for bike repair for low-income individuals, and support for local governments to build protected bike lanes, trails and other destination-oriented active transportation infrastructure.

The state should **accelerate vehicle fleet turnover**.

- For example, the state should create a generous clean transportation incentive designed to remove the least-efficient vehicles from the road by requiring the scrapping of a qualifying internal combustion car at the time of sale of the ZEV, particularly focusing benefits on low-income households who wouldn't be able to afford an EV otherwise, and focusing on replacing highly polluting vehicles that have remaining useful life. This program could either be run by the state, or by a third-party energy efficiency program administrator under transportation energy efficiency programs that could be required by the AQCC as described above. The incentive should give recipients a choice of benefits, including: an EV subsidy, an e-bike subsidy, shared mobility subsidy, and/or an unlimited transit pass.

Colorado should **enact a Mandatory Commute Trip Reduction Program.**

- A Commute Trip Reduction Rule would require big employers in heavily populated areas to implement programs that reduce single-occupancy vehicle (SOV) commuting by their employees and incentivize more efficient, low-carbon alternatives. Such public-private partnerships are a cost-effective way to reduce transportation emissions and save employers money through avoided parking costs.
- Washington adopted a [Commuter Trip Reduction Law](#) in 1991 and since its adoption, the State has experienced significant reductions in SOV commuting with a 66% higher non-SOV trip rate than the national average. In Seattle, the program contributed to a 20% reduction in SOV commute trips between 2000 and 2015. In 2017, [Washington spent \\$3.1 million](#) on Commute Trip Reduction programs, which were responsible for a 33,500 metric ton reduction in GHGs. For every dollar Washington invests in Commute Trip Reduction, employers commit roughly \$20 more to support their employees.
- The requirement gives employers the flexibility to develop programs that best fit their employees' needs. Employer TDM programs in Washington include flexible work and telecommute options, parking fees for SOV commuters, enhanced transit pass programs with subsidized fares, bike storage and showers, carpool incentives, vanpools, and more innovative solutions like mortgage discounts to move closer to work, money to furnish a home office, and parking cash-outs to stop driving. A Colorado program might also include micro-mobility subscriptions, electric bike incentives, and workplace EV charging stations to displace gas-powered vehicle trips.
- Colorado should supplement the trip reduction program requirement with a feebate to encourage and reward Colorado businesses for maintaining a high level of telework for office workers during the economic recovery and post-pandemic periods. Doing so would lead to a reduction in driving and thus lower CO2 emissions from reduced gasoline consumption. SWEEP suggests applying the policy to all businesses with at least 25 full-time equivalent (FTE) office workers in Colorado. The policy would impose a fee or provide a rebate to covered businesses annually, depending on the level of telework the business achieves each year. Businesses with telework below a base value (say, less than 20 percent of total hours via telework), would pay a fee, with higher fees for less telework. Businesses with higher levels of telework would get an incentive payment. The neutral point could be adjusted to keep the program close to revenue-neutral, minus administrative costs. SWEEP estimates that increasing telework by 144,000 FTE would prevent roughly 500,000 metric tons of emissions per year (or about 2 percent of transportation sector pollution).

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- <sup>7</sup> U.S. Department of Energy, National Renewable Energy Laboratory, *Electrification Futures Study: Scenarios of Electric Technology Adoption and Power Consumption for the United States*, 2018; available at <https://www.nrel.gov/docs/fy18osti/71500.pdf>.
- <sup>8</sup> See for example: John Podesta, Christy Goldfuss et al., Center for American Progress, *A 100 Percent Clean Future*, 10 October 2019; available at <https://www.americanprogress.org/issues/green/reports/2019/10/10/475605/100-percent-clean-future/>
- <sup>9</sup> Ibid.
- <sup>10</sup> U.S. House of Representatives Select Committee on the Climate Crisis, *Solving the Climate Crisis: The Congressional Action Plan for a Clean Energy Economy and a Healthy, Resilient, and Just America*, June 2020, available at <http://climatecrisis.house.gov/report>.
- <sup>11</sup> For example, a study by Vibrant Clean Energy found that electrifying vehicles is the single largest step Colorado can take to reduce climate changing pollution – cutting emissions more than 40 percent below 2018 levels by 2040. See: David Roberts, “Colorado’s most powerful climate tool isn’t what you think: Electric vehicles can reduce the state’s emissions more than anything else,” *Vox.com*, 12 August 2019.
- <sup>12</sup> For details, see: Bloomberg New Energy Finance, *Electric Vehicle Outlook 2020*, available at <https://about.bnef.com/electric-vehicle-outlook/>
- <sup>13</sup> SWEEP recommends that CEO, CDPHE and the AQCC consult with TABOR experts to design an optimal permit revenue system.
- <sup>14</sup> For example, see: Colorado Public Utilities Commission, Proceeding No. 18A-0606EG.
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