

Colorado Greenhouse Gas Pollution Reduction Roadmap 2021
 State of Colorado Technical Appendix
 Colorado Agency GHG Reductions Spreadsheet

2005 Revised Baseline (AR5-100 yr):	139.22 MMT CO2e								
Reduction Needed to Meet HB 19-1261 Targets:				36.20 for 2025				69.61 for 2030	
		2025 Reductions Low End	2025 Reductions High End	2025 Target Reduction	2030 Reductions Low End	2030 Reductions High End	2030 Target Reduction	Regulatory Actions (AQCC actions in BOLD)	Legislative Action(s)
Economic Effects of COVID		0.00	5.00	0.00	0.00	2.00	0.00		
Recent, Ongoing and Near Term Actions									
Electric Generation Sector Transition	Ongoing / Near Term	17.96	19.85	18.90	30.59	33.81	32.20	AQCC 2020 Rulemaking: Regional Haze Phase 1 (Tri State, Colorado Springs, PRPA); AQCC 2020 Guidance Approval: Clean Energy Plan Guidance; AQCC 2021 Rulemaking: Regional Haze Phase 2 (Xcel); 2021 and 2022 PUC and AQCC Coordination: Utility Clean Energy Plan and Electric Resource Plan Approvals	n/a
Ongoing SB19-181 Rulemakings	Priority / Near Term	4.00	8.00	7.00	10.00	15.00	12.00	AQCC 2020 and Beyond Rulemakings; COGCC 2020 Mission Change Rulemaking	n/a
Coal Mine Methane	Ongoing	5.04	6.16	5.60	6.30	7.70	7.00	AQCC 2020/2021 Rulemakings: Regional Haze; APCD permitting	n/a
Transportation: Business As Usual including CAFE and LEV	Ongoing	4.50	5.50	5.00	5.40	6.60	6.00	None - Long term trend modeled by E3 reference scenario in Roadmap process shows ~26 MMT in 2025 and ~25 MMT in 2030. 2005 Baseline was ~31 MMT.	n/a
Comprehensive Transportation Efforts: GHG Planning and Pollution Standard; Vehicle Miles Travelled Reduction; Medium-and Heavy-Duty Strategy; Additional Light Duty Vehicle Standards and Incentives; Indirect Source Rules	Priority / Near Term	1.80	2.20	2.00	4.14	5.06	4.60	AQCC 2021 Rulemaking: GHG Planning and MDV/HDV Rules; AQCC 2022 Rulemaking: Possible New CA LEV/ZEV Rules; AQCC 2022-23 Rulemaking: Indirect Source Rules; Transportation Commission Implementation; Implementation of investment strategy (agency TBD); PUC Tariff and Distribution Network Actions	Potential transportation funding and authority bills; resources needed for APCD staffing and investment programs
Local Action Programs (Denver, Boulder, Ft. Collins, and others)	Ongoing	0.90	1.10	1.00	2.25	2.75	2.50	Local actions to implement climate and energy plans; APCD/AQCC Inventory Efforts to accurately capture and avoid double counting	n/a
Reg 22 Hydrofluorocarbon Phase-Out (May 2020)	Ongoing	0.50	0.62	0.56	1.04	1.27	1.15	AQCC May 2020 Rulemaking [COMPLETE]	n/a
Waste Diversion Programs -- Front Range Waste Diversion Enterprise	Ongoing	0.50	0.61	0.55	0.50	0.61	0.55	Front Range Waste Diversion Enterprise Implementation	n/a
ZEV Regulations and Utility Transportation Electrification Plans	Ongoing / Near Term	0.36	0.44	0.40	1.35	1.65	1.50	AQCC August 2019 Rulemaking: ZEV [COMPLETE]; PUC Approval of Plans; CEO/CDPHE Engagement in PUC Process	n/a
Focus Areas under Comprehensive Economy Wide Program									
Renewable Natural Gas Standard for gas utilities	Priority	0.56	0.68	0.62	1.00	4.50	1.55	Potential legislation, PUC rulemaking; could be AQCC role	Need legislative authority and budget action
Landfill and Wastewater Methane Rulemaking and Investment		0.47	0.57	0.52	0.95	1.16	1.05	AQCC 2021 or 2022 Rulemaking(s)	Legislative renewable natural gas action would support
Refrigerant Management Program								AQCC 2021 or 2022 Rulemaking(s)	n/a
Residential Hydrofluorocarbon High Global Warming Potential Phase-out	Medium Term	TBD	TBD	TBD	0.45	0.55	0.50	AQCC 2021 or 2022 Rulemaking(s)	n/a
Beneficial electrification requirements					0.90	1.10	1.00	AQCC 2021 or 2022 Rulemaking(s); potential legislation and PUC action on utility investments	
Expanded natural gas demand side management requirements	Priority	TBD	TBD	TBD				Potential legislation, PUC rulemaking	Potential building benchmarking and standards bill;
Building Benchmarking and Performance Standards					2.11	2.57	2.34	AQCC 2021 or 2022 Rulemaking(s)	potential bill on natural gas DSM; potential legislation on beneficial electrification. Resources needed for transition programs and APCD staffing and PUC action
Industrial Energy and Emissions Audits and Efficiency Rulemakings								AQCC 2021 or 2022 Rulemaking(s)	
TOTAL Reductions		36.58	50.73	42.15	66.97	86.32	73.95		
Estimated GHG Growth (R-C-I Fuel, Ag, Waste, Industrial Use)		3.26	3.26	3.26	5.09	5.09	5.09	Growth determined by difference between 2015 and target years using the 2019 Action Scenario. Value reported is the	
Overall Change		33.32	47.47	38.89	61.88	81.23	68.86		
CO2e MMT Reduction Needed for 1261 Targets				36.20			69.61		

Other Future, Backup or Yet Unquantified Measures

- Shifting the Incidence of Taxation from Income to Carbon
- Low Carbon Fuel Standard
- Further local actions and code enhancements
- Agriculture and Working Lands
- Added stringency for other measures

- Greenhouse Gas Best Available Control Technology for industrial sources
- Further waste diversion measures
- Abandoned coal mine methane measures
- Federal greenhouse gas efforts