Workplan

Section 1: Overall Project Summary & Approach

1.a. Description of GHG Reduction Measures

Project Summary: *Decarbonize DRCOG: A Zero-Emission Building Initiative* aims to transform the built environment and associated markets within the Denver Regional Council of Governments (DRCOG) area (Figure 1) and beyond, with emphasis on low-income and disadvantaged communities (LIDACs). This program directly impacts the 56% of Coloradans (over 3.3M people) living across DRCOG's 58 member jurisdictions, with the goal of achieving a region-wide zero operational emission building sector by 2050. In alignment with the Biden Administration's Justice40 Initiative, 47% of requested funds will be directed to LIDACs. By focusing on building decarbonization, *Decarbonize DRCOG* will address Goal 1 Objective 1.1 of EPA's Strategic Plan to aggressively reduce greenhouse gas (GHG) emissions from all sectors while increasing energy and resource efficiency.

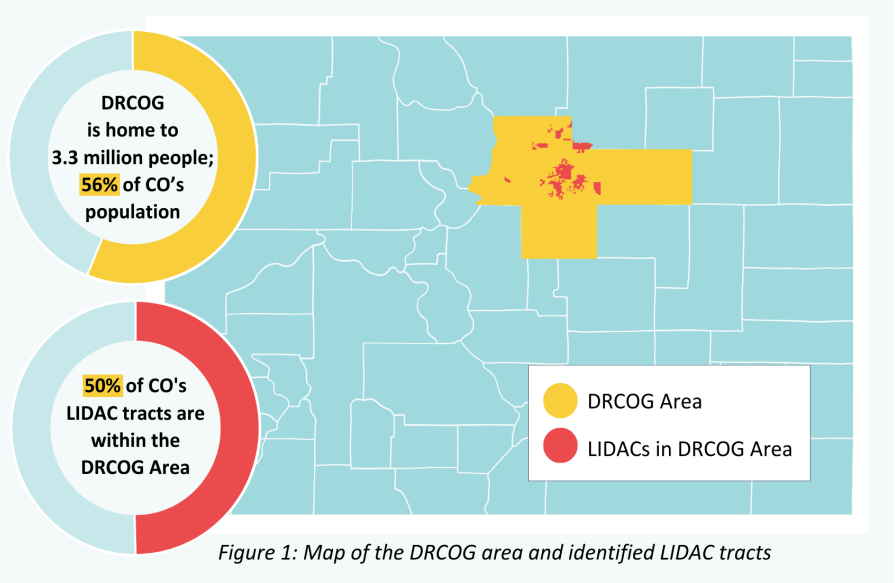

Figure 1: Map of the DRCOG area and identified LIDAC tracts

Decarbonize DRCOG focuses on four key GHG Reduction Measures* (or "Measures"):

- **Measure 1, Full-service Decarbonization for LIDAC Populations:** (or "LIDAC Decarbonization") Free home retrofits and upgrade services from start to finish, designed to meet LIDAC resident needs.
- **Measure 2, Energy Advising:** (or "Advisors") Free, data-driven, client-focused, and vendor-neutral advising to help residential, multifamily, and commercial building owners through decarbonization.
- **Measure 3, Rebates and Incentives:** Funds to mitigate costs, accelerate adoption, and spur market growth.
- **Measure 4, Building Policy Collaborative:** (or "Policy Collaborative") Facilitated support for accelerating and coordinating zero-emissions building policy implementation region-wide; funds to grow municipal capacity.

**Each of these measures is described in detail including the major features, tasks, milestones, and potential risks starting on page 6 of this Workplan.*

These Measures are built on a foundation of three Market Transformation Support Initiatives (or "Support Initiatives"), prioritizing LIDACs: robust **community engagement**; comprehensive **communications**; and high-quality **workforce and industry development**. Each *Decarbonize DRCOG* Measure independently reduces GHG emissions; however, the program's true strength lies in the impact of the Measures and Support Initiatives working together. The collective influence of these cross-cutting, interdependent interventions is critical to transforming the region's building decarbonization market. While Measure 4 will reduce emissions the most (see Table 1), Measures 1-3 and the Support Initiatives create the vital foundation of market, workforce, equity, and cultural forces necessary to realize policy goals. In short, the result of *Decarbonize DRCOG*'s collective programming is greater than the sum of its parts; the total, sector-wide impact is therefore modeled separately throughout this application as "Transformative Impact" alongside each individual Measure modeled as if they were the only program implemented (see Table 1). With this holistic

Table 1: *Summary of Investment and GHG Reductions per Program Measure*

Measure	Investment	Reduction $mtCO_2e$ 2025-2030	Cost per $mtCO_2e$ 2025-2030	Reduction $mtCO_2e$ 2025-2050
1: LIDAC Decarbonization	$48,106,435	12,204	$3,942	94,955
2: Energy Advisors	$17,463,443	367,025	$47.58	3,202,381
3: Rebates and Incentives	$43,063,443	246,141	$174.93	1,935,956
4: Policy Collaborative	$39,209,385	3,811,623	$10.29	106,614,244
Transformative Impact of Total Package	**$199,705,797 from CPRG**	**6,855,776***	**$29.13**	**148,176,499***
In-Kind and Leveraged Funds	*$73,258,343*	*247,613*	*$295.86*	*1,944,582*

*Greater than sum of Measure 1-4 impacts due to transformative impact modeling (see above paragraph).

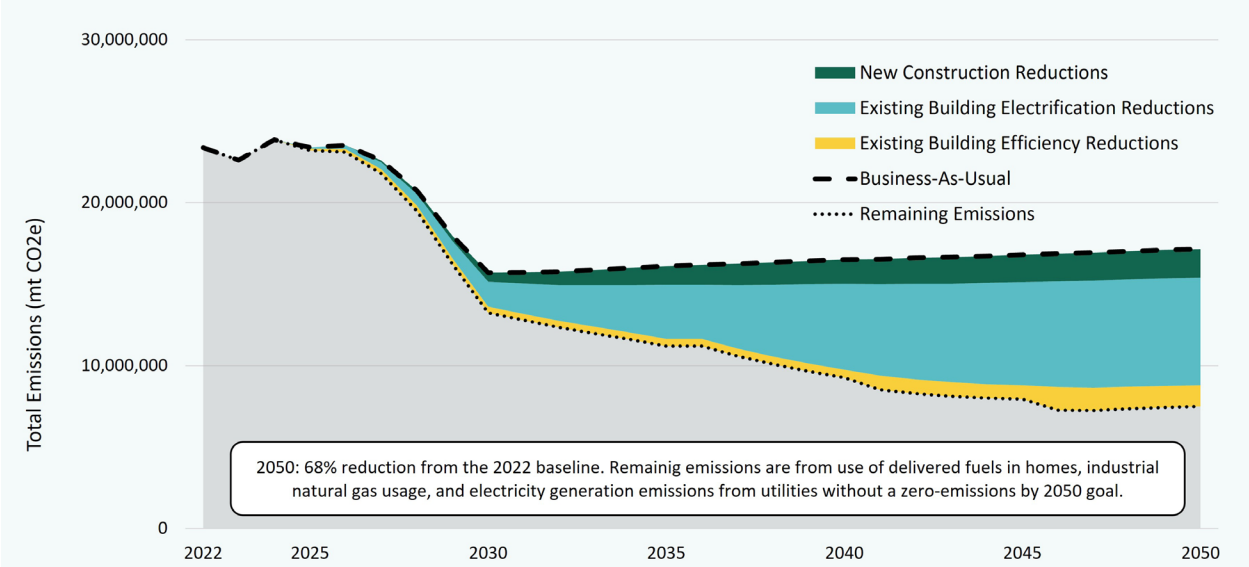

Figure 2: *Decarbonize DRCOG Transformative Impact GHG Reductions through 2050*

approach, *Decarbonize DRCOG* will achieve a cumulative **6,855,776 $mtCO_2e$ of GHG reductions by 2030** ($29.13 of CPRG funding/$mtCO_2e$), and **148,176,499 $mtCO_2e$ by 2050**—reducing cumulative building sector emissions a full third below business as usual by 2050.

This proposal targets total building decarbonization of the region, and if implemented in its entirety the only remaining emissions in 2050 from the built environment will come from delivered fuels, industrial processes, and electricity generation. Member governments will provide additional program funding (or, "Leveraged Funds") and in-kind staff time to augment funds and capacity; associated emissions reductions are tabulated individually throughout this application, as in Table 1.

DRCOG, the country's third oldest council of governments, covers a diverse range of Colorado landscapes and communities, with rural plains in the east and rugged mountains in the west. The Denver region is the largest metropolitan area for over 500 miles in any direction, with a population greater than any Mountain West state except Arizona. The Denver region hosts some of the nation's most significant temperature swings[1] and worst air quality.[2] Its distinct topography at the base of the Rocky Mountains creates air circulation

[1] Tabachnik, S. "Arctic blast triggers 75-degree temperature swing in Denver – second largest on record." *The Denver Post*. 22 December 2022. https://www.denverpost.com/2022/12/22/denver-cold-temperatures-arctic-front/ Accessed March 2024

[2] "Colorado Cities Rank Among Worst in Nation for Ozone Pollution." National Lung Association. https://www.lung.org/media/press-releases/state-of-the-air-colorado Accessed March 2024

patterns that trap pollutants,[3] resulting in a 46-years-long history of ozone nonattainment and associated high-resolution data collection. These unique features create an opportunity to isolate and evaluate the GHG impacts of building decarbonization interventions in a community that serves as a microcosm for the American Interior, both culturally and climatically. Further, the DRCOG area includes 50% of Colorado's LIDAC tracts; both these tracts and the area's broader communities are diverse, each with unique demographic composition, identity, history, and needs. As one example, Aurora Public Schools serve students from more than 130 countries and who speak over 160 languages.[4] With growing population centers across the West already looking to the DRCOG area as a policy and programmatic leader, *Decarbonize DRCOG*'s impact will go far beyond DRCOG, or even Colorado.

DRCOG is strongly positioned to lead this project to success with its deep understanding of and experience serving the region. The organization operates under Articles of Association, governed by a Board of Directors of 58 equally represented member governments who unanimously voted to support this application, many of whom have signed letters of commitment (LOCs) and actively participated in the development of this grant proposal (see **Summary_LOC_DRCOG.pdf** and **Summary_bios_DRCOG.pdf**). DRCOG has successfully administered hundreds of millions of dollars of federal grants over its almost 70-year history and will be responsible for managing contracts, intergovernmental agreements, and grant/fiduciary oversight and compliance of this grant. Given its expansive network, federal program experience, collaborative structure, and regional influence, DRCOG is uniquely qualified to deliver the scope and scale of *Decarbonize DRCOG*. Member governments are committed to continued involvement in program design and implementation, including participation on advisory committees, in-kind staff time, and direct dollars.

Decarbonize DRCOG addresses the highest priority barriers and gaps in climate pollution reduction capacity identified by DRCOG's PCAP—including six of its eight measures—, features building-sector priorities from the State of Colorado's PCAP, and directly addresses several CPRG program goals and objectives (see Table 2).

Table 2: *Decarbonize DRCOG Alignment with PCAP Measures and CPRG Goals and Objectives*

***Decarbonize DRCOG* Activity**	**Connection to PCAP Measures**	**Connection to CPRG Goals and Objectives**
All Measures	Commercial, multifamily, municipal, university, school, and hospital building electrification and efficiency upgrades (DRCOG p. 47); Multifamily property owners building decarbonization (DRCOG p. 53); Residential building electrification and energy audits (DRCOG p. 60); Support large buildings decarbonization (CEO p. 25)	▸ Implement ambitious measures that will achieve significant cumulative GHG reductions that are long-lasting and certain ▸ Achieve substantial community benefits, particularly in LIDACs/benefits LIDACs through improved indoor air quality and quality of life ▸ Complement and leverage other funding sources to maximize GHG reductions and community benefits ▸ Pursue innovative policies and programs that are replicable and can be scaled ▸ Stimulate transformation toward a decarbonized economy ▸ Incorporate high labor standards, emphasize job quality, and support equitable workforce development.
Measure 1	Free home weatherization and energy efficiency services for low-income disadvantaged communities (DRCOG p. 66)	
Measure 2	Building energy advisors program (DRCOG p. 37)	
Measure 3	Provide incentives and financing for energy efficiency, electrification, and on-site renewable energy (CEO p. 43)	
Measure 4	Adopt building energy codes and performance standards that exceed state requirements (CEO p. 41)	
Support Initiatives	Workforce Development (DRCOG page 41)	

[3] McKee, S. "Denverites breathe some of America's worst air and the stunning landscape is to blame." *The Denver Gazette.6* Sept 2023. https://denvergazette.com/outtherecolorado/news/denverites-breathe-some-of-americas-worst-air-and-the-stunning-landscape-is-to-blame/article_417c8fb8-4cea-11ee-a70a-9f471832c8f6.html Accessed March 2024

[4] "Demographics. Aurora Public Schools." Aurora Public Schools. https://www.aurorak12.org/about/fast_facts/demographics Accessed March 2024

Decarbonize DRCOG is built on insights from over a dozen stakeholder and public meetings in DRCOG's PCAP development process and collaboration between DRCOG and member government staff. It is also greatly influenced by member government experience administering successful building decarbonization programs, including those of the City and County of Denver, Boulder County, and the City of Boulder, referenced throughout this grant. *Decarbonize DRCOG* will equitably distribute CPRG funds and resources across the region, based on factors such as size, LIDACs, need, and location to ensure a unified and streamlined development of the region-wide supply chain and workforce—critical to achieving the program's intended market transformation.

Decarbonize DRCOG is designed to achieve the CPRG program goals (see Table 2) while complementing existing programs and funding streams; this includes $73.3M of Leveraged Funds and in-kind staff time local governments will provide over the next five years for direct management by *Decarbonize DRCOG*, in addition to federal, state, and utility investments. The program pursues innovative, replicable, and scalable policies and actions, and already has strong regional industry, workforce, utility, and community buy-in. Together, DRCOG, its member governments, and committed community partners (see **Summary_LOC_DRCOG.pdf**) will achieve *Decarbonize DRCOG*'s ambitious and necessary aspirations.

1.b. Demonstration of Funding Need

Buildings account for over 52% of the DRCOG region's GHG emissions (30% from commercial properties and 22% from residential[5]) making building decarbonization the region's greatest pollution mitigation and adaptation tool. DRCOG communities are particularly susceptible to extreme heat, "severe" ozone pollution (EPA downgraded the Denver Metro/North Front Range nonattainment area in 2022),[6] and suffocating wildfire smoke, all further compounded by climate change. The area often has some of the worst air quality in the world,[7] with one in twelve children having asthma diagnoses statewide.[8] Rocky Mountain Institute (RMI) calculates that air pollution in Colorado costs upwards of $2B annually in health care costs.[9] Only 57% of Colorado households have central air conditioning,[10] and temperatures in Denver have already risen by 2.6°F since 1970; the average number of 90+ degree days has doubled in the last decade.[11] On hot summer days, vulnerable populations must choose between shutting windows and facing heat stress, or opening them to hazardous air.[12] At the same time, building owners and occupants are facing rapidly rising and volatile gas prices in a built environment highly reliant of natural gas appliances due to historically low rates. Therefore, in addition to emissions reductions, *Decarbonize DRCOG* will also alleviate air quality hazards (including criteria and hazardous air pollutants, or CAPs and HAPs), stabilize energy costs, and increase climate resilience, especially in LIDACs.

The region is progressing towards remedying these issues through building decarbonization: nearly half of DRCOG member governments have adopted the most recent 2021 International Energy Conservation Code, with many going further. However, even with strong potential for community buy-in, most local governments lack the staff capacity and financial resources to enforce ambitious policies, implement sufficient programs,

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[5] "DRCOG Priority Climate Action Plan." DRCOG, p. 33. https://drcog.org/sites/default/files/Final%20PCAP%20Document%20-%20Feb%202024.pdf Accessed March 2024

[6] Osborn, B. "EPA says Colorado Front Range now a 'severe' air quality violator: Here's what it means." *The Fort Collins Coloradoan*. 22 September 2022. https://www.coloradoan.com/story/news/local/2022/09/20/epa-downgrades-colorados-front-range-from-serious-to-severe-air-quality-violator/69503980007/ Accessed March 2024

[7] Nicholson, Kieran. "Denver ranks No. 1 in list of international cities for air pollution Saturday." *The Denver Post*. August 2021. https://www.denverpost.com/2021/08/07/denver-air-pollution-ranking/ Accessed March 2024

[8] "Addressing Asthma and Respiratory Health." Children's Hospital Colorado. https://www.childrenscolorado.org/community/community-health/respiratory-illness/ Accessed March 2024

[9] "What is the health impact of buildings within your state?: Outdoor air pollution from buildings harms public health across the United States." RMI. https://rmi.org/health-air-quality-impacts-of-buildings-emissions/#CO Accessed March 2024

[10] Residential Energy Consumption Survey. US Energy Information Administration. https://www.eia.gov/consumption/residential Accessed March 2020.

[11] Stein, A. "Why are Colorado's summers getting hotter? It's climate change." The Denver Post. 8 July 2021. https://www.denverpost.com/2021/07/08/climate-change-colorado-summer-heat/ Accessed March 2024.

[12] Daley, J. "Colorado is getting hotter, but many residents lack access to indoor cooling." *Colorado Public Radio*. 12 June 2023. https://www.cpr.org/2023/06/12/colorado-is-getting-hotter-but-many-residents-lack-access-to-indoor-cooling/ Accessed March 2024

quantify pollutant reductions, or facilitate equitable community engagement. While several DRCOG member governments currently host successful building decarbonization programs, many others are hesitant to take action. As a result, electrification is dragging: only 2-3% of Colorado homes currently have a heat pump,[13] and Xcel Energy (the region's largest gas and electric utility) heat pump rebate participation data suggests only 0.4% of metro Denver units adopted a heat pump between 2020-2022. Successful market transformation will require a more holistic, regional strategy that cannot be solely dependent on actions by individual jurisdictions.

Additionally, regional Heating, Ventilation, Air-Conditioning (HVAC) and plumbing workforces do not have the awareness, training, or capacity to retrofit the region's buildings at the necessary scale. Messaging around decarbonization technologies can be confusing and is often outdated, which only accentuates the need for strong community engagement, marketing, and design that is consistent yet adaptable to be tailored to audiences across the region. To meet climate goals, the HVAC, plumbing, and construction industries need both clear market signals and the right support to ensure that heat pump technology and other critical electrification measures are being universally installed by 2035. This can only happen with substantial, coordinated, region-wide investment in building decarbonization, making the *Decarbonize DRCOG* program critical for transformative change.

DRCOG intends to leverage several significant sources of funding beyond the CPRG program to decarbonize buildings. Most visibly, the Inflation Reduction Act (IRA) HOMES and HEEHRA rebate programs provide $140M to Colorado for building electrification. Home and building owners may also qualify for the federal Energy Efficient Home Improvement Tax Credit and the Colorado Heat Pump Tax Credit. Utilities are actively investing in decarbonization programs, most prominently Xcel Energy's proposal to spend ~$500M over the first three years of CPRG implementation on demand side management and beneficial electrification across their Colorado territory.[14] Select municipalities are applying for IRA Assistance under the "Latest and Zero Building Energy Code Adoption" program from the U.S. Department of Energy (DOE). In addition, the City and County of Denver, the City of Boulder, and Boulder County have collectively pledged $3M of in-kind staff time —5.1 full time equivalents (FTE) annually—and $70.3M of supplemental local government funds to grow *Decarbonize DRCOG* impact over its first five years. These supplemental, programmatic funds are designated as "Leveraged Funds" or "Leveraged" throughout the application. Additional services and GHG reductions above those directly funded by CPRG dollars are calculated independently.

While these funding resources are substantial, achieving the needed scale and speed of transformation requires additional investment and an integrated approach that combines this diversity of resources to set residents and businesses up for success. Locally, the average residential-sized air-source heat pump installation costs $21,000, which is more than double the average cost for a furnace.[15] Further, the state plans to limit most of the $70M of HOMES funds to large multifamily properties; with an estimated average incentive of $10,000, the remaining $70M from HEEHRA will only reach 7,000 residences across the state. Even with $2,000 in federal tax credits, $500 from the state, and up to $2,200 from their utility (whose programs consistently fall short of participation and energy savings targets[16]), there remains a substantial up-charge of ~$7,300 for single family homeowners to install a heat pump.

Cost is not the only barrier to electrification. Public awareness of heat pumps and other electric technologies is low, local contractors are often hesitant to install them, and installations are not always done correctly. The region learned this the hard way; in the aftermath of the December 2021 Marshall Fire (1,000+ structures burned, $2B+ in damages), policy and financial incentives successfully increased building decarbonization

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[13] Kolwey, N. "Benefits of Heat Pumps for Colorado Homes." Southwest Energy Efficiency Project. 7 February 2022. https://www.swenergy.org/directory/co-heat-pump-study-feb-2022/ Accessed March 2024

[14] "2024-2026 Demand Side Management & Beneficial Electrification Plan." Xcel Energy. https://www.xcelenergy.com/staticfiles/xe-responsive/Company/Rates%20&%20Regulations/Regulatory%20Filings/CO-DSM/HE%20101_Attachment%20NCM-1.%202024-2026%20DSM%20BE%20Plan_without%20header.pdf Accessed March 2024

[15] EnergySmart records 2022-2023. https://docs.google.com/spreadsheets/d/1gPs0N3cdxrffOjCFw-BovSIirDjJ7A60/edit#gid=1741543172

[16] "2022 Demand Side Management Annual Status Report." Xcel Energy. https://www.xcelenergy.com/staticfiles/xe-responsive/Company/Rates%20&%20Regulations/2022%20Colorado%20DSM%20Annual%20Status%20Report.pdf Accessed March 2024

rates (over 11% of new homes went all-electric[17]), but the workforce wasn't ready to conduct quality electric equipment installation, leaving rebuilding families rightfully frustrated.

With CPRG funding, DRCOG will directly tackle these building decarbonization challenges all at once, which is the only way that a market transformation can happen on the needed timescale. Together, the proposed Measures and Support Initiatives will help building owners navigate complex technologies and financing, decrease upfront costs, and build a workforce that competently installs quality, affordable electric technology. This suite of services will ensure assistance is directed where it's most needed, provide comprehensive communications to raise awareness and educate audiences, and pave the way for the implementation of consistent, high-performance building requirements across the region.

1.c. Transformative Impact

Decarbonizing the region's buildings is both critical and challenging. While technology solutions exist, they are still nascent in their application locally. Residents and building owners have limited knowledge of these solutions, the workforce requires significant development before widespread implementation can be achieved, and policy makers are hesitant to pursue sufficiently ambitious and necessary policy while these foundational issues remain unaddressed. *Decarbonize DRCOG* brings together a complementary approach that drives market readiness through education, workforce development, and rapid scaling of adoption. Its Measure and Support Initiatives deliver transformative and sustained emissions reduction through regional partnership and policy action, designed equitably and interdependently in recognition of the complex nature of the built environment. This proposal leverages an exceptional amount of expertise, cooperation, and collaboration across the DRCOG region; solidarity among the local governments that make up the region is amplified by strong relationships with and promised commitment from state government agencies, local utilities, industry representatives, labor unions, and trade groups—a rare and critical partnership. Electrification is essential to reach national and Colorado climate targets;[18] with a rapidly decarbonizing grid,[19] emission reductions from efficiency and electrification gains will only compound over time. Zero-emission and electrification-driven policy will lock these changes into place. However, individual local governments cannot achieve building decarbonization alone and need organized collaboration across geographies, sectors, and industries to succeed. *Decarbonize DRCOG* is designed to transform the building sector and associated markets while also building climate resilience that directly benefits all residents and businesses, especially in LIDACs. With CPRG funding, DRCOG intends to achieve a region-wide, zero operational emission building sector by 2050 and direct 47% of its funds to LIDACs. As the region faces escalating climate impacts, *Decarbonize DRCOG* will serve as a strategic, impactful, scalable, and replicable approach that will mitigate future climate impacts, build community resilience, and foster a brighter future for Colorado and the Mountain West.

1.a. Expanded - Detailed Description of GHG Reduction Measures

Measure 1: Full-service Decarbonization for LIDAC Populations

This measure intends to make healthy, decarbonized homes more accessible to LIDACs by offering holistic energy efficiency and electrification measures. At little to no cost to the participant, the measure will facilitate retrofitting and supporting services to mitigate risks to residents, such as bill assistance, community solar subscriptions, and long-term no-cost maintenance contracts. Residents within designated LIDAC census tracts, identified using the Council on Environmental Quality's Climate & Economic Justice Screening Tool (CEJST),[20] EPA's Environmental Justice Screening and mapping tool (EJScreen),[21] and Colorado's

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[17] "Marshall Fire Adoption Rates." Boulder County. https://docs.google.com/spreadsheets/d/1Qll7lmiohd7gPxJmYOcKrhYd687raz2yUzFsSmydT-Q/ Accessed March 2024.

[18] Colorado Senate Bill 2023-016 established a GHG reduction target of zero GHG pollution by 2050. https://leg.colorado.gov/sb23-016-bill-summary Accessed March 2024

[19] Xcel Energy, which provides 79% of the Denver metro region's electricity, is statutorily required to cut GHG emissions from electricity generation by 80% below 2005 levels by 2030 and is aiming for 100% emission reduction by 2050. https://co.my.xcelenergy.com/s/our-commitment/carbon-reduction-plan Accessed March 2024.

[20] "Climate and Economic Justice Screening Tool." Council of Environmental Quality. https://screeningtool.geoplatform.gov/ Accessed March 2024

[21] "EJScreen: Environmental Justice Screening and Mapping Tool." EPA. https://www.epa.gov/ejscreen Accessed March 2024

EnviroScreen,[22] will qualify for service. The LIDAC Decarbonization Advisory Board Subcommittee (see Section 3.c.) and program management may set additional eligibility requirements, such as income caps.

Services and equipment upgrades will be allocated based on household assessment and may include weatherization, insulation, air sealing, window alterations, induction cooktops/cookware, cold climate heat pumps, and heat pump water heaters. These upgrades will reduce emissions, improve indoor air quality, and increase resilience to extreme heat and poor outdoor air quality. Based on need, participants may receive pre-weatherization health and safety repairs to enable effective efficiency and electrification upgrade implementation. Measure 1 takes inspiration from Denver's *Healthy Homes Program*,[23] which provides similar no-cost upgrades to low-income residents with respiratory illnesses, identifying the most impactful home upgrade measures and services, and supporting and tracking the best outcomes for participants.

Measure 1 - Major Features and Tasks

- Program design based on existing, successful local programs from governments and informed through partnership with LIDACs and equity advocates.
- Tasks:
  1. Issue Request for Proposal (RFP) and select implementation contractor; hire DRCOG staff to oversee vendors, lead program development and evaluation, and coordinate implementation.
  2. Community engagement and marketing in English and other locally-relevant languages, targeting LIDAC census tracts to recruit a pipeline of participants for this service.
  3. Open applications for participants; support applicants through application process.
  4. Manage subcontracts with HVAC, plumbing/pipefitting, and other relevant contractors.
  5. Ongoing outreach and support for participating community members.

Table 3: *Measure 1 - Milestones*

Residences Upgraded	Year 1	Year 2	Year 3	Year 4	Year 5	CPRG Total	Leveraged
Single-Family Homes	51	101	103	103	78	436	155
Multi-Family Units	137	271	275	275	207	1,165	313

Table 4: *Measure 1 - Specific Potential Risks and Mitigation*

Risk	Mitigation
Failure to identify and recruit the most at-need households	Target community outreach events in LIDACs; Involve neighborhood community connectors to build trust and understand needs; Train multilingual advisors to verify incomes, provide project oversight, and advocate for the best interests of the participant(s); Incorporate diverse communications and marketing.
Gentrification and displacement	Mitigate through locally specific strategies identified by the Community Advisory Board and community members; Ask rental building owners to sign agreements to protect rent affordability.
Increased utility bills	Include building envelope improvements as part of the comprehensive decarbonization project; Proper heat pump sizing and commissioning; Access to low-income community solar subscriptions. All of which will offset homeowner maintenance costs associated with home electrification.

Measure 2: Energy Advising

Currently, no unified resource guides residents through the complexities of building decarbonization. Even highly motivated customers struggle to navigate the process; local government staff routinely hear from residents whose contractors discouraged heat pump installation or who received highly variable proposals. Essentially, home and building owners must become their own general contractor to navigate complex and

[22] "Colorado EnviroScreen." Colorado Department of Public Health. https://cdphe.colorado.gov/enviroscreen Accessed March 2024

[23] "Healthy Homes Program." City and County of Denver. https://denvergov.org/Government/Agencies-Departments-Offices/Agencies-Departments-Offices-Directory/Climate-Action-Sustainability-Resiliency/Cutting-Denvers-Carbon-Pollution/High-Performance-Buildings-and-Homes/Electrify-Your-Home/Healthy-Homes-Program Accessed March 2024

unfamiliar energy efficiency and electrification topics. Measure 2 aims to provide a one-stop shop that helps residents and businesses understand and access available upgrades and associated incentives. Advisors will help support projects via email, phone, and virtual meeting, focusing first on quality of life improvements rather than solely on technical outcomes. To mitigate costs and maximize residents served, Measure 2 will also offer a self-service website, a model recently implemented by *EnergySmart*[24] (Boulder County's residential energy improvement service) that has already helped scale impacts without adding staff.

Services will be tailored to residents and building owners ranging from small single-family homeowners to large commercial or multifamily property holders, whether they are owner-occupied, landlord-operated, or governed by condominium/homeowner associations. Residents, buildings, and businesses in LIDACs will be prioritized with double the consultation hours available to other properties. Advising and other resources will also be provided in additional locally-relevant languages, such as Spanish, Vietnamese, Arabic, Somali, or Amharic and will comply with federal language access plan requirements.

Measure 2 builds on successful programs like *Partners for a Clean Environment*,[25] which provides sustainability advising services to businesses in Boulder County, and Efficiency Works' home[26] and business[27] energy advising services, offered through its member municipal utilities in the region. These programs have provided energy efficiency and decarbonization navigational services for residents and businesses for 14+ years, simplifying decarbonization with neutral advising and continuously improving offerings.

Measure 2 - Major Features and Tasks

- Program design based on existing, successful local programs from governments and utilities
- Tasks
  1. Issue RFP and select third party vendor for implementation; hire DRCOG staff to oversee vendor, lead program development and evaluation, and coordinate across programs.
  2. Engage community engagement and market in English and other locally-relevant languages, targeting LIDACs to recruit a pipeline of participants for this service.
  3. Develop web resources to effectively scale capacity, feature broad education, rebate application information, contractor recommendations, other regional resources, and more.
  4. Provide advising over phone, email, and virtual meeting.

Table 5: *Measure 2 - Milestones*

Clients Advised	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Single-Family Homes	1,307	1,960	2,614	3,267	1,960	11,108
Multi-Family Units	2,693	4,040	5,386	6,733	4,040	22,892
Businesses	700	1,000	1,400	1,500	1,200	5,800

Table 6: *Measure 2 - Specific Potential Risks and Mitigation*

Risk	Mitigation
Difficulty of meeting needs of different client populations	RFP will require plan for advisors to be trained to tailor services to client needs, whether broad or highly technical, rather than formulaic responses. Utility advising programs often get this wrong, which is why Boulder County's EnergySmart and PACE programs focus on addressing client concerns instead of pushing specific, technical solutions.
Potential inability to meet the scale of demand	The program will also build virtual tools, promote electrification-specialist contractor lists, and provide multiple other process simplifications to extend advice to building owners to extend reach of each individual advisor.

[24] "EnergySmart." Boulder County. https://energysmartyes.com/ Accessed March 2024
[25] "Partners for a Clean Environment." Boulder County. https://pacepartners.com/program-areas/energy/ Accessed March 2024
[26] "Assess your home's efficiency." Efficiency Works. https://efficiencyworks.org/homes/efficiency-audits/ Accessed March 2024
[27] "Advising and assessments for commercial properties." Efficiency Works. https://efficiencyworks.org/business/advising-and-assessments/ Accessed March 2024

Measure 3: Rebates and Incentives

Upfront cost is a major barrier to electrification, as highlighted in Section 1.b. Measure 3 will build on incentive programs from the IRA, utilities, and state and federal tax credits to further reduce upfront decarbonization costs by increasing the amount of incentives available and the types of decarbonization technologies that qualify. Rebates will be available for residential, multifamily, and commercial properties, and will be accessible, timely, and impactful, covering audits, weatherization, electrification, and related necessary upgrades. Incentive levels will be based on community engagement and best practice research, setting sufficiently high rebate amounts while still achieving maximum GHG returns per dollar, as well as equitable income-based distribution and workforce market stability for the workforce. The budget assumes a weighted average spent per year, based on a model of changing incentives levels over the span of the grant, scaling up or down based on engagement. Depending on community engagement outcomes, industry incentives (e.g. contractor installation or distributor stocking bonuses), or incentives for meeting certain green building standards (e.g. LEED, PassiveHouse) may also be considered. Incentives will be reviewed and adjusted annually, targeting consistent net spending and rebate amounts issued.

Three DRCOG communities (City and County of Denver, City of Boulder, and Boulder County) currently provide decarbonization incentives on top of utility, state, and federal programs. Each locality, however, has distinct rebates and qualifying criteria, leaving contractors, homeowners, and businesses to face a complicated landscape, and leaving two-thirds of DRCOG's population with no municipal decarbonization support. If EPA funds *Decarbonize DRCOG*, these three communities will end their separate rebate programs and instead redirect those dollars to supplement Measure 3 (see **Budget Narrative** page 8). This reorganization would not increase rebate amounts allocated per recipient, but rather would serve more units, eliminating confusion and equalizing rebates across the region. Other DRCOG communities have provisionally expressed interest in contributing additional local funding.

Measure 3 - Major Features and Tasks

- Program design based on existing successful local programs from governments and utilities.
- Engagement with contractors and distributors.
- Iterative updates to ensure rebates meet community needs and market realities.
- Tasks:
    1. Issue RFP and select third party vendor for implementation; hire DRCOG staff to oversee vendor, lead program development and evaluation, and coordinate across programs.
    2. Engage community engagement to identify gaps and needs over time.
    3. Streamline processes and administration to minimize barriers associated with funding delays.

Table 7: *Measure 3 - Milestones*

Clients Advised	Year 1	Year 2	Year 3	Year 4	Year 5	CPRG Total	Leveraged Over 5 Years	
							Clients	Dollars
Single-Family Homes	2,000	2,000	2,000	2,000	2,000	10,000	8,655	$14.8M
Multi-Family Units	3,200	3,200	3,200	3,200	3,200	33,891	16,000	$19.0M
Commercial Sq. Ft.	830k	830k	830k	830k	830k	4.15M	7.30M	$15.0M
Rebate Dollars	$8.61M	$8.61M	$8.61M	$8.62M	$8.62M	$43.1M	-	$44.8M

Table 8: *Measure 3 - Specific Potential Risks and Mitigation*

Risk	Mitigation
Rebates going to high-income buildings	Include income-based incentives that exclusively serve low-income (0-80% of area median income (AMI) and moderate-income (80-120% of AMI) categories.
Contractor/rebate application fraud	Decades of municipal and utility rebate programs in Colorado have had very little fraud; however, at least 5% of all projects will be audited.
Program complexity discouraging participation	Unify and standardize the rebate programs currently existing throughout the region. Design simple and efficient rebates. Provide comprehensive and accessible educational and promotional resources (web, communications toolkit, etc.).
Rebates not driving targeted adoption rates	Revise rebate amounts, implement mid-stream incentive strategies, identify barriers and implement mitigation strategies based on those barriers.

Measure 4: Building Policy Collaborative

Colorado is one of eight states that constitutionally delegates municipalities the authority to self-govern building codes. As such, each city and county adopts and implements building codes individually, resulting in an inconsistent and hard-to-monitor landscape. The Building Policy Collaborative will assess what each jurisdiction needs to advance ambitious building policies and will develop collaborative solutions, maximizing regional consistency, easing permitting and compliance for trades and industry, and catalyzing successful implementation of policies needed to reach a region-wide zero-emission built environment by 2050, using three primary approaches:

1. Convening local government officials in a peer-to-peer network to evaluate, advance, and implement building policies;
2. Supporting DRCOG jurisdictions with $35M in capacity building and compliance assistance; and
3. Commissioning research to track and evaluate data across the region and publish reports jurisdictions can use to inform and advocate for improved policy.

The Collaborative will implement transformational policies like new building energy codes and performance standards, equipment replacement requirements, permitting reform, embodied carbon standards, and professional licensure requirements. Measure 4 will provide subawards for new staff capacity and resources, helping local governments achieve pollution reduction through process improvements and achieving high compliance rates. These awards may fund hiring and training plan reviewers, inspectors, and other staff or vendors to ensure new buildings are built to code and retrofits are permitted and built up to standard, and supporting technological and analytical capabilities to measure compliance and GHG reductions. Jurisdictions will also be able to request funding for capacity to lead sustainability and climate action endeavors city- or county-wide. This need exists across DRCOG, even in large cities like Aurora (pop. 390,000 with no dedicated decarbonization staff). With collected and commissioned research, the Collaborative will quickly solve implementation issues in a supportive, locally-attuned environment. This will increase policy effectiveness in and beyond the DRCOG region and support community engagement and best practices dissemination.

If CEO's Policy Accelerator proposal is also awarded CPRG funds, *Decarbonize DRCOG* will parse out priorities with CEO to eliminate any potential redundancy.

Measure 4 - Major Features and Tasks

- Program design based on existing networks, collaborating with state government, and supporting local governments that lack sufficient capacity.
- Tasks:
    1. Issue RFP and select facilitator; hire DRCOG staff to oversee vendor, lead program development and evaluation, liaise with local governments, and coordinate across programs.
    2. Define local governments' highest priority policy and programmatic needs.
    3. Negotiate alignment of building policy across the region.
    4. Identify and troubleshoot implementation issues region-wide.
    5. Establish and implement local government grant program and reporting requirements.

Measure 4 - Milestones

- ***End of 2024*** - Jurisdictions have identified priority implementation needs.
- ***End of 2025*** - Jurisdictions have co-developed a region-wide roadmap towards zero emission buildings; individual jurisdictions have identified their policy priorities through 2030; first two rounds of jurisdiction support funds awarded (continued semi-annually).
- ***End of 2026*** - Participating jurisdictions are implementing state low carbon and energy code.
- ***End of 2027*** - Communities representing 65% of regional population are implementing zero-emission building policy for new construction.
- ***2030 Goal*** - Entire region operates under zero- or near-zero emission building policy for new construction; communities representing 65% of regional population implementing enhanced appliance requirements; communities representing 33% of regional population have advanced energy efficiency requirements for buildings 10,000 to 50,000 sq ft.
- ***2050*** Goal - Nearly 100% of region's buildings are operating at zero emissions.

Table 9: *Measure 4 - Specific Potential Risks and Mitigation*

Risk	Mitigation
Political risk aversion impedes policy adoption	Meet communities where they are with support to maximize ambition of improvements that resonate locally while maintaining alignment with neighboring jurisdictions.
Noncompliance or broad exemption-seeking	Leverage other program elements to relieve cost barriers; streamline permitting and administration; consistent policies ensure easier compliance.
Limited permitting and inspection capacity	Simplify permitting across the region to prevent delays in building construction.
Community and industry pushback	Inform timeline decisions with community/industry engagement; partner jurisdictions through the adoption/implementation process to share regional examples; connect concerned community members to other Decarbonize DRCOG measures; work with industry stakeholders to identify potential region-wide standards/practices.

Market Transformation Support Initiatives (or "Support Initiatives")

Three Support Initiatives build the foundation for the success of the four *Decarbonize DRCOG* Measures:

Community Engagement

The four Measures will have their own unique community engagement strategies but will be broadly managed by centralized administration to ensure cohesive operations, messaging, outreach, community input strategies, and equitable resource distribution. The engagement process will be inclusive, offering participation options such as workshops, surveys, and public comments, accommodating participants through diverse scheduling and attendance options, accessibility via public transit, and provision of services like language assistance and childcare. Feedback from community members and stakeholders will be actively sought and integrated, with follow-up detailing how feedback was incorporated. Direct collaboration with established local leaders, community based organizations (CBOs), and other community partners will enhance outreach effectiveness and delivery, especially in LIDACs (see Section 4.b.).

Communications

Decarbonize DRCOG's success depends on empowering community members with foundational awareness of the benefits of energy efficiency and electrification, and motivating them to participate in programming. The Measures will be supported by a unified, centrally managed communications campaign that integrates universal design principles and prioritizes the development of messaging for LIDACs as the core audience. This primary messaging will then be adapted and expanded to engage a broader audience. This approach guarantees inclusivity, effectively broadening the campaign's reach while maintaining focus on the key needs of LIDACs.

The communications strategy, message content, and delivery will be informed by a series of focus groups, surveys, and other outreach that transforms traditional top-down advertising into a dynamic exchange which evolves based on continuous feedback and marketing analytics. Deep engagement with LIDACs ensures that messages not only resonate on a personal level but also motivate action through value propositions such as health, savings, and quality of life. In addition to these engagement strategies, the program will rely on DRCOG's 40 years of experience in successfully driving behavior change through regional campaigns, including the nation's largest SchoolPool program and second largest Bike to Work Day.

The communications campaign will deliver coordinated messaging and branding across platforms, from traditional media like broadcast advertising to innovative digital and grassroots strategies. Optimizing messaging for clarity, inclusivity, and local cultural resonance, materials will surpass accessibility standards and will be available in locally-relevant languages that meet the needs of target audiences. The campaign will also provide customizable content toolkits for local stakeholders, including engagement specialists, local government communications teams, and trusted community partners, to ensure relevance at every level.

Workforce and Industry Development

This initiative includes four strategic workforce programs to address existing workforce and market gaps: (1) an Innovation Pilot Program that supports entrepreneurial businesses and technologies with high potential to accelerate electrification and energy efficiency adoption; (2) six Green Workforce Hubs that provide paid training for new and upskilling existing workers (tradespeople and professionals) with wraparound service support to mitigate barriers to participation; (3) Contractor Navigation Hubs that coach and assist building decarbonization workers including mechanical, electrical, and plumbing contractors in starting or expanding businesses, and navigational services for utilizing regional building decarbonization programs like *Decarbonize DRCOG*; and (4) Renewable Access Programs that support recruitment, preparation, and employment success for prospective LIDAC, youth, and previously incarcerated workforce entrants. DRCOG's established partnerships with regional labor organizations, unions, educational institutions, and CBOs (see attached LOCs, **Summary_LOC_DRCOG.pdf**) will facilitate community-informed program design and implementation. *Decarbonize DRCOG* anticipates that this initiative will train 3,800 new workers, upskill 1,000 existing workers, and award up to 30 awarded innovation grants (see Budget Narrative page 5-6). These programs take inspiration from the Illinois Climate and Equitable Jobs Act Workforce Programs[28] and TECH Clean California Quick Start Grants.[29]

Program-Wide Risks

In addition to Measure-specific risks identified above, broader risks that could delay or interrupt the development, implementation, or effectiveness of the program are outlined in Table 10, along with their potential GHG reduction impacts, and mitigation strategies.

Table 10: *Program-wide Risks, GHG Impacts, and Mitigation Strategies*

Risk (Level)	GHG Reduction Impacts (Level)	Mitigation Strategies
Insufficient workforce, Incorrectly selected or low-quality installation (High)	Insufficient workforce would prolong building decarbonization timelines, decreasing GHG reduction success for both 2030 and 2050 timelines. Low-quality or incorrect installation would decrease public trust in electric technology and in *Decarbonize DRCOG* activities, which could create additional barriers for decarbonization. Exact scale of impacts depends on the scale of delay and frequency/severity of equipment issues. (High)	All Measures will significantly increase demand for decarbonization, spurring new market entrants. The Workforce and Industry Development Support Initiative will provide free/paid electrification training, increase LIDAC workforce entrants, and offer business development services to support the launch and growth of decarbonization businesses. *Decarbonize DRCOG*-trained contractors can be directly placed with subcontractors performing LIDAC Decarbonization projects; all LIDAC Decarbonization projects will be audited for install quality. Energy Advising will have strict performance requirements

[28] "CEJA Workforce Training Programs." Illinois Department of Commerce and Economic Opportunity. https://dceo.illinois.gov/ceja/workforce-training-programs Accessed March 2024

[29] "Quick Start Grants." TECH Clean California. https://techcleanca.com/quick-start-grants/ Accessed March 2024

Table 10: *Program-wide Risks, GHG Impacts, and Mitigation Strategies (Cont'd)*

Risk (Level)	GHG Reduction Impacts (Level)	Mitigation Strategies
Insufficient workforce, Incorrectly selected or low-quality installation (High) *(Cont'd)*	-	for referred contractors. Contractors must be registered to participate in Rebates and Incentives, and a certain amount of each participating company's jobs will be audited. Repeat low-quality installation will result in removal from Energy Advising recommended contractor list and the Rebates and Incentive program.
Lack of community participation in programs, particularly in LIDACs (Medium)	Achieving maximum GHG reduction for LIDACs will require significant awareness and participation from all targeted communities. (High)	Start with a "market softening" public relations (PR) campaign that provides broad education on building decarbonization and primes customers for program rollout. Community engagement alongside program development will ensure that programs meet community needs. Widespread marketing campaigns will continue for the CPRG duration. Community engagement efforts will establish a referral network through CBOs.
Political or industry pushback (Medium)	*Decarbonize DRCOG* was designed with industry and political collaboration across the region. As it is largely designed with "carrots" rather than "sticks," it is less likely to receive pushback compared to more regulatory approaches. However, delays in code updates/ enforcement do pose significant risk in scale of GHG reduction quantity (based on amount of delay), but low likelihood of occurring. (High)	The Building Policy Collaborative will meet challenges and pushback from the local level up and to link program with climate and health obligations. The program already has broad support from local workforce and industry players (see LOCs). Political risks are largely mitigated by the overwhelming participation and support local governments have shown through the joint development of this application.
Limited availability of quality equipment and material, Supply chain bottlenecks (Medium)	Counties in the Denver metro area all have a heating design temperature between 0 and 5F.[30] Limited availability of cold climate performance HVAC equipment and other electrification technologies would significantly delay Measure implementation. (High)	Industry representatives will be recruited to Advisory Boards to keep up to date on current supply chain and stocking habits, while supporting direct communication between industry and *Decarbonize DRCOG* initiatives. In addition to communication and relationship strategies, midstream incentives like distributor stocking bonuses will be implemented as needed.
Price escalation, Inflation (Medium)	Cost-effectiveness could be impacted by nominal construction and equipment cost escalation. Limited supply and high demand could result in pricing escalation and project delays, resulting in lower impact per dollar spent. (Medium)	All programs are designed to expand the market on the supply and demand sides, where increasing competition and higher volume of equipment sales should put downward pressure on nominal costs.
Negative publicity or misinformation (Medium)	Electrification and its cost-effectiveness face a significant barrier in misinformation and the financial realities of changing markets. This risk of GHG impacts is higher at the beginning of the program and is likely to decrease as mitigation strategies roll out. (Medium)	Early-stage PR campaigns will focus on dispelling electrification misinformation and "market softening." As programs take off, communications and engagement teams will collect and disseminate success stories, including studies on cost-effectiveness and health benefits, and adjust programs to mitigate negative outcomes going forward.
Language/ culture barriers to participation (Medium)	Achieving maximum GHG reduction for seriously impacted LIDACs requires multicultural and multilingual communications. (Low)	Advising, workforce development, and public resources will include locally-relevant languages. Community engagement and communications will include cultural sensitivity and values-based research that will be incorporated into each Measure's design and communications.

[30] "ENERGY STAR Certified Homes County-Level Design Temperature Reference Guide." EPA. https://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/County%20Level%20Design%20Temperature%20Reference%20Guide%20-%202015-06-24.pdf Accessed March 2024

Roles and Responsibilities

Project Design: *Decarbonize DRCOG* was designed by DRCOG in strong partnership with its member governments, many of which provided in-kind staff time towards crafting this proposal (see **Summary_bios_DRCOG.pdf**). The proposal contents were approved by a unanimous vote of DRCOG Board members, which includes representation from each of the 58 member governments.

Existing member government-run programs that successfully address building decarbonization serve as key inspiration and were developed through iterative community engagement with residents, CBOs, businesses, and industry stakeholders. These local programs work closely with utility incentive, workforce, and customer education efforts, but need more scale and capacity to induce a market transformation. *Decarbonize DRCOG* program will benefit from ongoing communication and feedback from these stakeholders, many of whom have provided LOCs (see **Summary_LOC_DRCOG.pdf**).

Project Implementation: *Decarbonize DRCOG* will be implemented and administered by dedicated DRCOG staff and contractors selected through competitive RFP processes. Implementation will be governed by an Advisory Board, and community members, local governments, and industry representatives will also participate in Measure-specific subcommittees (see Section 3.c.).

Section 2: Impact of GHG Reduction Measures

2.a. and b. Magnitude of Reductions 2025-2030 and 2025-2050

Below, Tables 11 and 12 demonstrate the anticipated GHG reductions that directly result from CPRG funding. Methodologies and assumptions for these calculations can be found in the **Technical Appendix**.

Table 11: *Summary of Cumulative Decarbonize DRCOG GHG Impacts (2025-2030 and 2025-2050)*

Measure	GHG Reductions 2025-30 ($mtCO_2e$)	GHG Reductions 2025-50 ($mtCO_2e$)	Durability of Reductions
1: LIDAC Decarbonization	12,204	94,955	Most upgrades implemented and financed by these programs have a useful life of 15+ years. These will result in permanent GHG reductions as the expectation is that at end-of-life, a given appliance will be replaced with an even more efficient model. Reductions will compound over time as the electric grid becomes cleaner.
2: Energy Advisors	367,025	3,202,381	
3: Rebates and Incentives	246,141	1,935,956	
4: Policy Collaborative	3,811,623	106,614,244	Policy implementation is expected to result in significant, permanent GHG reductions. Implementation support will ensure anticipated savings are achieved and verified.
Transformative Impact*	**6,855,776**	**148,176,499**	-
Leveraged Funds	*247,612*	*1,944,582*	-

Table 12: *Cumulative GHG Reduction from Decreased Natural Gas Usage, by GHG and Measure*

Measure	CO_2 (metric tons)		CH_4 (metric tons)		N_2O (metric tons)	
	2025-2030	2025-2050	2025-2030	2025-2050	2025-2030	2025-2050
1: LIDAC Decarbonization	8,645	68,786	17	132	2	13
2: Energy Advisors	324,230	2,377,723	624	5,149	62	515
3: Rebates and Incentives	191,726	1,469,902	369	2,827	37	283
4: Policy Collaborative	2,467,020	78,729,467	4,744	151,403	474	15,140
Transformative Impact*	**4,613,4467**	**109,238,031**	**8,872**	**210,073**	**887**	**21,007**
Leveraged Funds	*195,426*	*1,499,155*	*376*	*2,836*	*38*	*289*

*Greater than sum of Measure 1-4 impacts due to transformative impact modeling (see page 1)

2.c. Cost Effectiveness of GHG Reductions

The Measures result in sustained emissions reductions that last far beyond the initial 5-year term of the grant. For example, a heat pump installed in 2030 will realize GHG emission reductions through the entirety of its 15+ year lifespan and is more likely to be replaced by a heat pump than a gas-powered furnace at its end-of-life. A new building constructed under a zero-emission building code will realize deep embodied carbon savings during the construction phase and realize operational savings for decades. Calculating savings to the 2050 horizon better accounts for the entire savings over the lifetime of actions taken. See Table 13 for Measure cost-effectiveness.

Table 13: *Summary of Decarbonize DRCOG Cost Effectiveness (2025-2030 and 2025-2050)*

Measure	Cost Effectiveness ($/mtCO₂e)	
	2025-2030	2025-2050
1: LIDAC Decarbonization	$3,942	$506.62
2: Energy Advisors	$47.58	$5.45
3: Rebates and Incentives	$174.93	$22.24
4: Policy Collaborative	$10.29	$0.37
Transformative Impact	**$29.13**	**$1.35**
Leveraged Funds	*$295.86*	*$37.67*

LIDAC Decarbonization is the least cost-effective Measure per $mtCO_2e$ reduced, but warranted as it supports equity and yields long-term cost savings regionally through associated health benefits and improved social and economic resilience. The Policy Collaborative is a counter-balance, providing highly cost-effective emissions and co-pollutant reductions that create more equitable conditions across the region. The growing Denver metro area economy and expanding number of contractors, equipment providers, and investment in decarbonization technology will mitigate cost escalation when demand grows to support the cost-effectiveness of all Measures.

The actual cost effectiveness of program implementation will be affected by a number of factors. For Measures 1-3, the key to cost effectiveness is the specific number and type of resulting efficiency and electrification upgrades, which will be greatly impacted by the energy performance of installed equipment; this depends on the performance of appliances available in the local market, what equipment contractors are trained to install, as well as consumer choice between product options. Consumer choice is expected to correlate with the degree of awareness generated by communications and community engagement work. Cost effectiveness of the Policy Collaborative will be impacted by the ambition, implementation timeline, and compliance rate—and ergo timing and quantity of the GHG emission reductions—in each jurisdiction. This includes workforce and industry preparedness. The realized total Transformative Impact of *Decarbonize DRCOG* will be affected by all factors listed above, as well as the ultimate synergy between Measures and Support Initiatives.

2.d. Documentation of GHG Reduction Assumptions

GHG reduction modeling support was provided by Lotus Engineering and Sustainability (Lotus), with additional contributions from Rewiring America (the Nation's leading building decarbonization nonprofit). Calculations and assumptions for this application are based directly on the models Lotus developed for both the DRCOG and CEO PCAPs. See the **Technical Appendix** for more detail.

Section 3: Environmental Results

3.a. Expected Outputs and Outcomes

Table 14 summarizes the outputs and outcomes of each Measure; "buildings" refers to homes, multi-family units, and commercial properties, ● marks direct outcomes, and ○ marks indirect outcomes and outputs.

Table 14: *Summary of Decarbonize DRCOG Cost Effectiveness (2025-2030 and 2025-2050)*

	LIDAC Decarb	Energy Advising	Rebates & Incentives	Policy Collab.	Support Inits.
Outputs					
Buildings partially or fully weatherized and/or electrified. Over 60,000 homes and buildings 2025-2030.	●	●	●	○	○
Buildings with new air filtration, purification, or cooling.	●	●	●	○	○
Leveraged state, federal, utility, and in-kind local gov. funds.	●	●	●	●	●
Training and job placement opportunities, particularly for LIDAC members.	○	○	○	○	●
Rebates and incentives issued. Over 40,000 issued 2025-2030.			●		○
Community members served. Over 1M total 2025-2030.	●	●	●	●	●
LIDAC members served.	●	●	●	○	●
Municipal staff hired and/or trained to support Measures.				●	
Regionally-standardized ambitious building energy and carbon codes/ standards implemented quickly.				●	○
Updated and streamlined digital permitting systems and requirements.				●	
Increased quality assurance checks, data collection and analysis, and results follow-up.				●	○
Outcomes					
GHG Reductions: 2025-2030: 6,855,776 $mtCO_2e$ reduction GHG Reductions: 2025-2050: 148,176,499 $mtCO_2e$ reduction.	●	●	●	●	○
Cumulative GHG emissions avoided over equipment life.	●	●	●	●	○
Building energy savings and reduced energy bills.	●	●	●	○	○
Improved indoor air quality and thermal comfort (increased climate resilience).	●	●	●	○	○
Improved outdoor air quality incl reduced CAP/HAP emissions.	●	●	●	●	○
Reduction in aggregate emergency department visits related to acute respiratory illness/distress.	●	○	○	○	○
Higher quality and appropriately sized equipment installations.	●	●	○		
Lowered upfront electrification costs.	●	●	●		
Increased access to incentives and rebates.		●	●		○
Increased workforce capacity and transformed electrification market.	○	○	○	●	●
Increased availability of electrification technology.	○	○	○	○	●
Increased speed, ambition, and consistency of building policy implementation.				●	○
Increased compliance of building retrofits and new builds.				●	●
Increased number of high-performing buildings.	●	○	○	●	○
Increased community empowerment, knowledge, and behavior change regarding decarbonization of buildings.	○	●	○		●

3.b. Performance Measures and Plan

DRCOG will develop a *Decarbonize DRCOG*-specific Performance Tracking Plan (or "Plan") that includes all outputs, outcomes, performance measures, and timelines. DRCOG will use this Plan to track progress against proposed results and will build a dashboard for viewing impact over time for each Measure, Support Initiative, and local jurisdiction. The Plan requirements and EPA terms and conditions will be incorporated into third party vendor contracts and subcontractor and subawardee agreements to ensure transparency and accountability across the *Decarbonize DRCOG* supply chain. Performance will be reported to the EPA on a semi-annual basis, with the addition of a full annual report on *Decarbonize DRCOG* activities. All Measures and Support Initiatives will report financial performance. DRCOG has a longstanding commitment to meticulous performance tracking, including analyzing long-term performance measures outlined in Metro Vision (DRCOG's guiding regional plan),[31] implementing federal performance-based planning and programming requirements in transportation planning,[32] and analyzing and reporting emissions reductions from projects funded with federal Congestion Mitigation and Air Quality dollars. As the designated Area Agency on Aging, DRCOG produces quarterly progress reports detailing grant milestones, ensures compliance with units of service requirements, tracks the number of clients served, and oversees subawards through monthly reimbursement processes. DRCOG will also develop a plan for dissemination of progress and results, which will be shared publicly to inform broader efforts. Key results will include aggregate modeled GHG emissions reductions, number of structures affected, impact of jurisdictional support funds, and recommendations for scaling zero emissions policy.

Direct Service Performance: Measures 1-3

Contractors implementing these three Measures will be required to utilize a unified customer management system like Salesforce or Touchstone to track and report monthly to DRCOG the following metrics:

- Number of homes, units, businesses, and LIDAC residents served.
- Specific measures and services implemented in each property, including number of consultations, quote reviews, rebates issued, and other relevant services provided.
- Rebate applications and invoices.
- Calculated savings in GHGs, energy use, and energy bills.
- Website visits and virtual tool utilization, as identifiable.
- Additional sources of funding leveraged (e.g. utility, federal, state).

Additional key performance metrics will be subsequently derived from these data; these may include the rate of projects completed against individuals marketed to, cumulative GHG savings, and GHG savings per dollar invested. Participation will be tracked by customer, recognizing that each customer may interact with multiple *Decarbonize DRCOG* programs over the duration of the grant performance period.

Measure 4: Building Policy Collaborative

The Policy Collaborative will track performance based on data reported directly from participating local governments. Depending on the identified priorities, information collected may include:

- Policy specifications and adoption status, including number of properties affected.
- Compliance rate of building projects.
- Number of projects meeting energy standards (e.g. Zero Energy Ready Home, Passive House).
- Time between application and permit issuance.
- Number of additional certified policy implementation workforce (internal staff or contractors).
- Expenditure of jurisdictional support funds (administered via subaward process and supporting additional staff training, capacity, etc.).

These and other metrics will be used to model $mtCO_2e$ reductions due to policy implementation.

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[31] "Metro Vision Performance Measures." DRCOG. https://metrovision.drcog.org/in_practice/performance_measures/ Accessed March 2024

[32] "Performance-based Planning and Programming." DRCOG. https://drcog.org/planning-great-region/transportation-planning/performance-based-planning-and-programming/ Accessed March 2024

Support Initiatives

Workforce & Industry Development: Performance will be tracked by total credentials attained, new entrants trained, employment numbers, percent of HVAC workforce installing heat pumps, union apprenticeship enrollment, and success of businesses and technologies supported through the Innovation Pilot Program.

Community and Stakeholder Engagement: Tracking measures will include community feedback through direct program engagement, iterative workshops, surveys, and public comment opportunities. Summaries of engagement activities will be provided along with key findings and recommendations for action.

Communications: Evaluate impact by reach, such as impression counts for digital and print content, including video and audio ads, social media content, and emails and newsletter reads. Direct service Measures will track whether participants self-attest to engaging with *Decarbonize DRCOG* marketing materials.

3.c. Authorities, Implementation Timeline, Milestones

Measures 1-3—Full-Service Decarbonization for LIDAC Populations, Energy Advising, and Rebates and Incentives—are programmatic in nature. These Measures, as well as the Support Initiatives (engagement, communications, and workforce and industry development) will be implemented by third-party vendors, selected through a competitive RFP process and overseen by DRCOG staff funded by the CPRG (see Figure 3).

DRCOG has full authority as a regional planning body to host direct staff, solicit RFPs, and administer third party vendors to provide the services described in Section 1.a. Similarly, DRCOG has the authority to provide sub-awards to local governments and facilitate peer-to-peer policy collaboration and research, the core programmatic elements of Measure 4, the Policy Collaborative. Notably, in Colorado, municipal jurisdictions bear the power to enact building decarbonization policies and regulations—the Policy Collaborative is not intended to impose regulations at the regional level, but instead aims to explore and advance items within the individual authority of each of DRCOG's 58 member governments, fostering collaboration and consistency across boundary lines. Such items may include changes to building codes and permits, building performance standards, or HVAC technician and construction professional licensure requirements.

Stakeholder participation and partnership will also be critical in achieving the transformative impact envisioned under this proposal. Support and buy-in from the mechanical, electrical, and plumbing contractors; building design and engineering professionals; HVAC and other appliance equipment manufacturers and distributors; workforce training centers; DRCOG's member local governments; and community members are requisites for this program to be a success. The Advisory Board—in partnership with program-specific subcommittees—will ensure effective communication and collaboration between programs and community members, and will support hiring, RFP development, and operation of the four Measures and three Initiatives.

Implementation timeline for all Measures and Support Initiatives can be found in Table 15. Key actions needed to meet the project goals and objectives by the end of grant period are **bolded**.

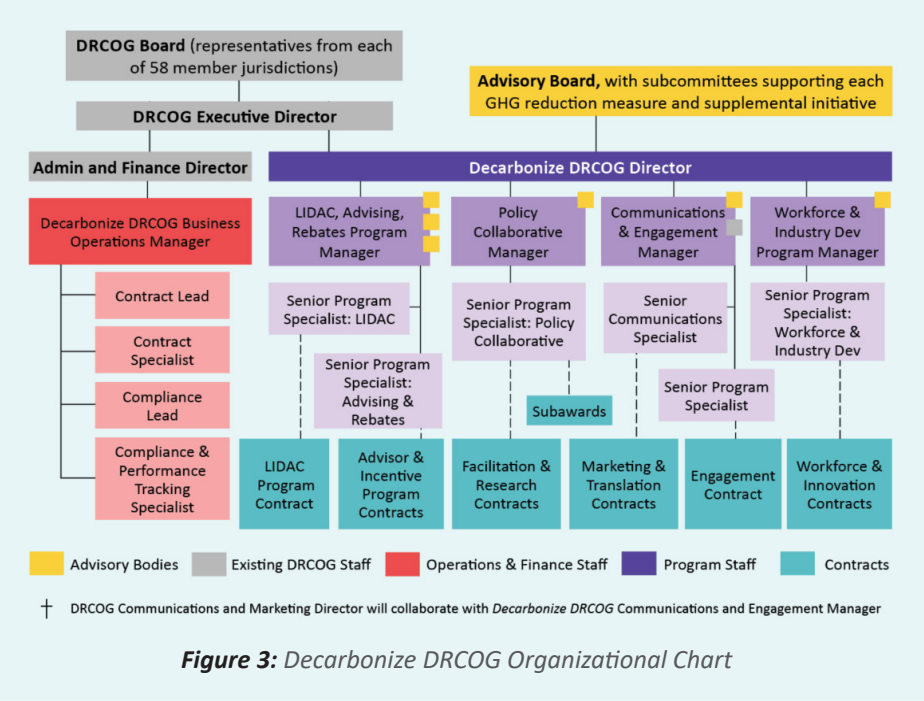

Figure 3: *Decarbonize DRCOG Organizational Chart*

Table 15: *Implementation Timeline*

Activities	Year 0 (July 1 - Dec. 31, 2024)											
	J	F	M	A	M	J	J	A	S	O	N	D
Form advisory board and identify programmatic priorities for 2025.												
Develop RFPs, project management and performance tracking plans for third party vendor contracts.												
Issue RFPs with phased deadlines.												
Initiate hiring process for onboarding of Director and Program Managers.												
Host community and stakeholder centered workshops to inform engagement and program design.												
Develop a dashboard to share information with stakeholders and the public. Create CPRG compliance and Performance Tracking plans to establish progress and metrics monitoring system and process.												
Hire and onboard program specialists.												
Evaluate RFP bids and select vendors.												
Develop community engagement and marketing plan; conduct broader industry market research.												

Activities	Year 1 (Jan. 1 - Dec. 31, 2025)											
	J	F	M	A	M	J	J	A	S	O	N	D
Develop a dashboard to share information with stakeholders and the public. Generate project evaluation criteria (cont.).												
Evaluate RFP bids and select vendors (cont.).												
Develop community engagement and marketing plan; conduct broader industry market research (cont.).												
All vendors selected and in program design phase.												
First Semi-Annual report issued to EPA.												
Launch "market softening" PR campaign.												
Policy priorities identified, begin facilitated workgroups.												
Conduct Measure-specific market research.												
Continue community engagement; incorporate into program design. Iterate on communications plan.												
Applications open for local government and innovation grants, rolling basis.												
Program Launch – all Measures and Support Initiatives live.												
Launch Measure-specific marketing & communications campaign.												
First award of local government & innovation grants. Repeat semi-annually.												
Submit Semi-Annual report to EPA.												
Synthesize lessons learned from Year 1 to update any relevant program strategy, evaluation, and process improvement. Repeat annually.												

Activities	Years 2-5 (Jan. 1, 2026 - Dec. 31, 2029)											
	J	F	M	A	M	J	J	A	S	O	N	D
Semi-Annual report issued to EPA.												
Bring results of prior annual report to community engagement sessions and appropriate Advisory Board subcommittees for feedback.												
Issue program change notice with 30-day public comment period.												
Round of local government & innovation grant awards.												
Ongoing Measure and Support Initiative program activities.												

Section 4: Low Income and Disadvantaged Communities

At its core, *Decarbonize DRCOG* embodies Justice40 and prioritizes LIDACs, aiming to achieve transformative change and establish accountability mechanisms to ensure equitable and effective investments with $94,817,856 (47%) of the $199,705,797 budget going towards these communities.

4.a. Community Benefits

All of the 313 identified CEJST and EJScreen Census block groups may be affected by the four Measures (see **Areas_DRCOG.xlsx** for tract IDs). Nearly $95M of funding will directly provide resilience and quality of life improvements through home upgrades, financial assistance, energy savings, enhanced navigational services, and more (see Section 1.a. Expanded, pages 6-12, for more details per Measure). *Decarbonize DRCOG* also provides environmental and public health benefits: building upgrades will improve indoor and outdoor air quality, particularly by reducing ozone precursor co-pollutants, NO_x and VOCs (especially critical due to the Denver region's near half-century history of ozone nonattainment).[33] By 2030, *Decarbonize DRCOG* is estimated to reduce NO_x emissions region-wide by 6,757mt, PM2.5 by 384mt, and VOCs by 213mt; by 2050, NO_x will be reduced by 153,344mt, PM2.5 by 8,898mt, and VOCs by 5,049mt (see **Technical Appendix** Table 7, page 10).

CEJST-identified LIDAC tracts also highlight concerns like legacy pollution, housing inequality, and health disparities, which *Decarbonize DRCOG* aims to reduce by improving comfort, air quality, and home value. Additionally, in a warming climate, indoor climate control is critical. Only 57% of Colorado homes have central air conditioning[34] (less in LIDACs), putting individuals—especially youth and older adults—at greater risk for heat-related illness. By replacing furnaces with heat pumps that provide both heating and cooling, *Decarbonize DRCOG* improves comfort and safety of living conditions. As LIDACs are more likely to experience compounded impacts of climate change and insufficient infrastructure, *Decarbonize DRCOG* will meaningfully improve health and quality of life, within identified census tracts and also across the broader region.

Electrifying buildings has the additional benefit of stabilizing utility costs, since electric rates are less volatile than natural gas. Gas rates have increased dramatically in the last three years and are expected to continue to grow, though in the near term it is still possible that electrifying buildings could result in increased utility bills for participants.[35] However, investing in efficient and electric equipment reduces exposure to future price hikes and volatility, and clients serviced by Measure 1 will have access to community solar subscriptions to reduce electricity bills during any potential near-term cost increases.

In addition to the above benefits and avoided disbenefits, *Decarbonize DRCOG* has substantial planned economic benefits for residents, including the creation of high-quality jobs, professional training, and business development opportunities through the Workforce and Industry Development Support Initiative. This work has a heavy focus on LIDACs and other individuals that face barriers to employment. DRCOG has strong union support—e.g., IBEW Local 68 (electricians), Pipefitters Local 208 (HVAC technicians), and SMART Local 9 (sheet metal)—to recruit, train, and employ job seekers from underserved communities. Additionally, workforce centers for the seven largest DRCOG counties and the Colorado Community College System have signed LOCs to support workforce development (see **Summary_LOC_DRCOG.pdf**). DRCOG also seeks to develop Community Benefit Agreements in line with DOE's recommended model[36] with large new commercial construction and retrofit projects requesting direct incentive dollars, including a focus on workforce training and fair wage requirements.

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[33] "History of ozone in Colorado." Colorado Department of Public Health & Environment. https://cdphe.colorado.gov/ozone-and-your-health/history-of-ozone-in-colorado/ Accessed March 2024.

[34] "Residential Energy Consumption Survey, 2020." US Energy Information Administration. https://www.eia.gov/consumption/residential/ Accessed March 2024

[35] "10 Year Rate History - Electric." Xcel Energy. https://www.xcelenergy.com/staticfiles/xe-responsive/Company/Rates%20&%20Regulations/24-01-511_CO-10YearRateTrend_Table-Electric_P02.pdf Accessed March 2024 / "10 Year Rate History - Gas." Xcel Energy. https://www.xcelenergy.com/staticfiles/xe-responsive/Company/Rates%20&%20Regulations/24-01-511_CO-10YearRateTrend_Table-Gas_P01.pdf Accessed March 2024.

[36] "Community Benefit Agreement (CBA) Toolkit." US Department of Energy Office of Energy Justice and Equity. https://www.energy.gov/justice/community-benefit-agreement-cba-toolkit Accessed March 2024

Decarbonize DRCOG will track direct and indirect benefits of its programming (see Section 3.b.), particularly for LIDACs. DRCOG staff administering Measures 1-3 and relevant local government staff participating in or funded by Measure 4 will directly track relevant data for all implemented home and building energy upgrades, including whether participants are LIDAC residents. DRCOG Workforce and Industry Development staff will track the impacts of workforce initiatives, including additional support to LIDAC residents. Regional air quality, including co-pollutants (CAP and HAP), are already tracked by 20 monitoring stations[37] throughout the DRCOG region (and 23 additional stations throughout the rest of the state); this data will continue to be collected and reported throughout the duration of the CPRG grant period and analyzed against expected CPRG outcomes. Cumulative, quantitative reporting of environmental, public health, economic, workforce, and other benefits for LIDACs will be separately analyzed and summarized in each semiannual report to EPA. In addition to local air quality benefits, it is likely that air quality improvement will benefit geographies beyond DRCOG. The broader Mountain West is severely impacted by ozone pollution,[38] and the ozone in the region often gets transported eastward towards Kansas; minimizing local pollution will therefore in turn benefit areas downwind of the DRCOG area.

When directing dollars to any area, especially LIDAC tracts, it is critical to mitigate the risk of unintended, negative consequences on local residents and businesses. In addition to engagement and co-creation with community members, *Decarbonize DRCOG* will address potential risks with the strategies in Table 16.

Table 16: *LIDAC-specific Risks and Mitigation Strategies*

Risk	Mitigation
Increased utility bills due to electrification	Always pair electrification with efficiency, especially in Measure 1. Provide community solar subscriptions and other bill assistance options. Leverage utility programs, such as levelized billing. Provide customer education.
Gentrification of neighborhoods due to increased home value	Tackling building decarbonization on a regional scale, unlike other programs that target specific streets/neighborhoods, will lift up all areas, especially LIDAC designated tracts, rather than singling out a handful of neighborhoods in a siloed approach. Measure 1 will also mitigate this risk through locally-specific strategies identified by the Advisory Board Subcommittee and community members. Rental building owners will be asked to sign agreements to protect rent affordability.
Not reaching sufficient populations, especially LIDACs	Spread marketing across broad spectrum of channels that target diverse audiences (see Section 4.b.). Consistently re-evaluate communications based on quantitative measures. Inform communications strategies with lessons learned from community engagement. Partner with CBOs that have existing, trusted relationships with target communities.
Contractor fails to meet expectations	Comprehensive RFP review process with iterative review and feedback and regular audits of program participants. Dedicated staffers to keep projects on track.

4.b. Community Engagement

Continuous engagement with LIDACs: DRCOG prioritizes meaningful community engagement and recently updated its public engagement plan,[39] which will guide all *Decarbonize DRCOG* engagement efforts. The program further commits to community engagement by (1) scaling up existing, successful programs that have been designed and continuously improved alongside community members, including LIDAC residents, and (2) incorporating early, meaningful, and iterative community engagement as a part of developing each Measure's implementation. This combination ensures incorporation of institutional knowledge and the current perspectives of broader DRCOG community members, with programs designed by and for the people of the Denver region.

[37] "2023 Ambient Air Monitoring Network Plan." Colorado Air Pollution Control Division. https://apcd.state.co.us/aqidev/tech_doc_repository.aspx?action=open&file=2023AnnualNetworkPlan.pdf Accessed March 2024

[38] Robbins, J. "Ozone pollution is on the rise in the West." *High Country News.* 9 November 2021. https://www.hcn.org/articles/pollution-ozone-pollution-is-on-the-rise-in-the-west/ Accessed March 2024

[39] "People-Centered Planning, Projects, and Services." DRCOG. https://drcog.org/sites/default/files/resources/CAM-RP-PUBLICENGAGE-19-05-15.pdf Accessed March 2024

Several of DRCOG's member governments are successfully conducting decarbonization programming with deep input from community members, including LIDAC residents and CBOs, on topics ranging from rebate amounts to collaborating with qualified contractors. These governments have been deeply involved in *Decarbonize DRCOG*'s program design, are committed to continued support of this effort, and are eager to see lessons learned scaled across the region through this grant. However, history alone is insufficient for the scope of *Decarbonize DRCOG*. Along with the engagement processes that helped develop DRCOG's PCAP, the four Measures all include intentional flexibility that will allow the programs to evolve alongside community needs. For example, the exact scope of and eligibility requirements for Measures 1 and 3 will be informed by community engagement in the earliest stages of program development and will be continuously reassessed based on relative impact and feedback collected from both past and prospective participants.

Communications, described in-depth on page 11-12, are critical to the success of this proposal, and play a large role in successful community engagement. Communications and community engagement staff will work closely together to ensure broad, meaningful reach of all Measures, with a focus on developing communications and marketing strategies that target representative and diverse participation. For both Measure design and implementation, this includes but is not limited to: language- and culturally-diverse collateral design, accessibility, diverse advertisement placement, participation incentives for engagement events and stipends for Advisory Board participation, and easily accessible translation and interpretation services. To ensure this broad-reaching engagement and communications starts early and stays consistent, dedicated DRCOG staffers and associated contractors will be brought on as early as possible, with support from existing DRCOG and municipal communications staff as programming ramps up.

Input from LIDACs: An Advisory Board will oversee the development and implementation of all Measures and Support Initiatives, with a subcommittee consisting of stakeholders (including community members and CBOs) dedicated to each individual programmatic element. These stakeholders will include organizations like Energy Outreach Colorado, the statewide weatherization provider; the Colorado BlueGreen Alliance; and Habitat for Humanity of Metro Denver, to target outreach, inform program design, and measure progress (see Summary_LOC_DRCOG.pdf). DRCOG has budgeted $800,000 per year as part of its Engagement Contract to fund community members and CBOs that participate in an advisory capacity or become part of a referral network (see Budget Narrative page 5), with priority for organizations based in or serving LIDACs. Integration of organizations like the African American Trade Association and Mi Casa Resource Center into program design, evaluation, and implementation will enhance the reach of community engagement efforts.

Finally, 90 LOCs are attached, summarized in **Summary_LOC_DRCOG.pdf.**

Section 5: Job Quality

Direct DRCOG Employees, Vendors, and Subcontractors

Decarbonize DRCOG will employ 16 staff members at DRCOG will oversee 12 vendors to implement programs (see **Budget Narrative** pages 3-6). The vendor implementing Measure 1 will be the only vendor with building decarbonization trade subcontractors. DRCOG employees will receive competitive wages with full benefits including health insurance and retirement contributions. The *Decarbonize DRCOG* Director will be responsible for establishing an inclusive team culture where all workers feel respected and safe. Advisory Board members, managers, and staff will be trained in the Department of Labor's 8 Good Jobs Principles[40] of recruitment and hiring; benefits; diversity, equity, inclusion and accessibility; empowerment and representation; job security and working conditions; organizational culture; pay; and skills and career advancement.

RFPs for program implementers will incorporate labor and job quality standards, requiring vendors to make clear commitments to paying at least the median area income for all workers; provide family-sustaining benefits; have an established no-tolerance policy for harassment, discrimination, and retaliation in the workplace; and have benchmarks and goals to hire individuals from disadvantaged communities. The LIDAC Decarbonization program will require the same standards from all potential subcontractors when practicable, in addition to showing compliance with job security and working conditions under OSHA 10 & 30 standards.

[40] "The Good Jobs Initiative." U.S. Department of Labor. https://www.dol.gov/general/good-jobs/principles/ Accessed March 2024

Workforce and Industry Development Initiative

Decarbonize DRCOG's Workforce and Industry Development Initiative will establish and expand upon a variety of high-quality, life-sustaining jobs in the building decarbonization trades. Highest in-demand occupations in the metro Denver decarbonization industry include electricians, HVAC/R technicians, plumbers and pipefitters, and insulation workers.[41] DRCOG has a goal that 28% of all workforce dollars will serve individuals directly living in LIDACs, but intends that a far greater share—closer to 75%—of funds will support a broader Justice40 commitment. Similar targets will be written into the language of RFPs for Green Workforce Hubs and Renewable Access Programs (see **Budget Narrative** page 6). Recruitment to training programs will prioritize youth and individuals with existing and prior justice-system involvement, and provide wraparound services like childcare and transportation to mitigate barriers to participation. Job placements out of *Decarbonize DRCOG* training programs will prioritize employers that have collective bargaining agreements and provide family-sustaining wages and benefits. As part of Contractor Navigation Hub business development coaching, current and future small business employers will be explicitly trained on the importance of fair labor practices and the Department of Labor's 8 Good Job Principles.

Section 6: Programmatic Capability and Past Performance

6.a. Past Performance

DRCOG has an established track record of managing and administering large-scale funding. Additionally, this proposal is rooted in existing, historically-successful local government programs within the region. Table 17 lists four federally-funded grants within the last three years where DRCOG is the direct recipient of the managed and administered funds.

Table 17: *Recent Federal Grants Received by DRCOG*

Federal / Passthrough Grantor	Title & Listing #	Project Description	Spending	Contact Info	Reporting Summary
U.S. Dept. of Transportation/ Colorado Dept. of Transportation	Highway Planning and Construction (20.205)	As the federally-designated Metropolitan Planning Organization for the Denver metro region, these grants support regional transportation planning, traffic coordination, and air quality mitigation.	$8,154,498	Marissa Gaughan, marissa.gaughan@state.co.us John Marcantonio, John.marcantonio@state.co.us	All programs have been deemed compliant through the annual singular audit (conducted by an outside auditor), including submission of interim and final reports.
Federal Transit Administration/ N/A	FTA Section 5310 Program (20.513)	DRCOG directly receives FTA funds. These grants support mobility programs to vulnerable populations throughout the Denver region by providing capital, operating, and programming resources.	$1,852,467	Emma Belmont, emma.belmont@dot.gov	
Federal Transit Administration/ Colorado Dept. of Transportation	Regional Vision Zero (20.616)	This award is aimed to reduce traffic fatalities in the Denver region.	$98,991	Christopher Vokurka, christopher.vokurka@state.co.us	
Department of Health and Human Services/ Colorado Dept. of Human Services	Special Program for the Aging (93.041, 93.042, 93.043, 93.044, 93.045)	A block grant designated from the Federal Older Americans Act that provides services to enable older Americans to remain in their homes and avoid nursing home care.	$9,431,872	Kara Harvey, kara.harvey@state.co.us	

[41] "Beneficial Electrification Workforce Development Ecosystem 2023: Analysis and Recommendations." Brendle Group. Pg 52. https://brendlegroup.wpenginepowered.com/wp-content/uploads/2024/02/Beneficial-Electrification-Workforce-Development-Ecosystem-Analysis.pdf Accessed March 2024

6.b. Reporting Requirements

DRCOG has a successful history of administering state and federal grant funds since 1955. Under the nine-year tenure of Director of Administration and Finance, Jenny Dock, DRCOG's Administration and Finance Division has administered hundreds of millions of dollars of grants. Every program has been deemed compliant through DRCOG's annual singular audit conducted by an independent auditor, including submission of interim and final reports. For all of these agreements, DRCOG has timely reported outputs and successfully achieved the proposal project outcomes. DRCOG is also subject to a quadrennial review and certification by the Federal Highway and Transit Administrations (FHWA and FTA) to certify that the metropolitan transportation planning process is carried out in accordance with federal law. DRCOG has a 100% successful certification rate through this process.

DRCOG abides by federally-approved procurement procedures to secure contracts, issuing RFPs and selecting contracts through a scoring process with diverse selection panels. DRCOG's Fiscal Management Control Policy establishes the standards for processing a contract and making procurements, ensuring integrity and concurrence with state and federal regulations.[42] This includes policies around vendor agreements, expenses paid by a third party, and request for proposal (RFP) protocol; bid process specifics like the RFP timeline, scope of work, and post-bid procedures; and contracting details like required expenditure forms and project cost/budget. Sufficient DRCOG staff will be hired through the grant award to meet all EPA reporting and compliance requirements. *Decarbonize DRCOG* will adhere to both Davis Bacon Prevailing Wage requirements and Build America, Buy America. If supply chain issues arise, DRCOG will follow the Best Practice Guide for Procuring Services, Supplies, and Equipment Under EPA Assistance Agreement.[43]

6.c. Staff Expertise

Douglas Rex, the Executive Director of DRCOG, will oversee *Decarbonize DRCOG* and its Director (see Figure 3, page 18). Mr. Rex has nearly 30 years of experience in transportation planning, policy, and operations and has served as Executive Director of DRCOG since 2017. Under his leadership, the organization has redefined the process by which federal transportation funds are allocated, launched innovative programs and services in the aging division, and adopted Metro Vision, the region's plan for growth and development through the year 2040. Jenny Dock leads a team that manages dozens of federal, state, and local grants with excellent compliance, and will oversee the *Decarbonize DRCOG* Business Operations Manager.

This program will also rely on the collective staff expertise of DRCOG's government members. Key personnel include: Elizabeth Babcock, Executive Director, Katrina Managan, Director of Buildings & Homes, and Shanon Jahn, Green Workforce Lead of the Denver Office of Climate Action, Sustainability, and Resiliency; Susie Strife, Director of Sustainability, and Zac Swank, Deputy Director, of the Boulder County Office of Sustainability, Climate Action, and Resilience; Jonathan Koehn, Director, and Carolyn Elam, Sustainability Senior Manager, of the City of Boulder Climate Initiatives Department; as well as Amy Jiron, Director of Building Decarbonization, and Stephanie Insinna-Sahondo, Director of Weatherization, at the Colorado Energy Office. Resumes for these specific individuals are attached, as is a listing of all 73 DRCOG, municipal, county, and state government employees who have contributed to the development of the *Decarbonize DRCOG* project (attached **Summary_bio_DRCOG.pdf**).

Section 7: Budget and Timely Expenditure of Grant Fund

Decarbonize DRCOG will transform markets and set the path to achieve a zero-emission residential and commercial building sector by 2050. This holistic approach requires funding of $199,705,797 over five years to lay the groundwork for true market transformation of the greatest contributor to GHG emissions in the Denver metro area. If EPA decides to partially fund *Decarbonize DRCOG*, DRCOG will adjust accordingly. DRCOG will adjust initiatives accordingly and strive to maximize impact of a partial award.

[42] "Fiscal Management Control Policy". DRCOG. October 2022. https://drive.google.com/file/d/197_hYVGTvrkiQIIAYe6mt0MRLGEoffrF/ Accessed March 2024.

[43] "Best Practice Guide for Procuring Services, Supplies, and Equipment Under EPA Assistance Agreements." EPA. November 2022. https://www.epa.gov/sites/default/files/2021-03/documents/best-practice-guide-for-procuring-services-supplies-equipment.pdf Accessed March 2024

Table 18: *Decarbonize DRCOG Budget Summary*

Decarbonize DRCOG Budget	Total Cost	% of Total	Impact 2025-2030
Central Program Administration*	$32,478,705	16%	Over 1.6M people engaged
Measure 1: LIDAC Decarbonization	$48,106,435	24%	1,600 residences retrofit
Measure 2: Energy Advising	$17,463,443	9%	Over 50,000 clients advised
Measure 3: Rebates and Incentives	$43,063,443	22%	Over 40,000 rebates issued
Measure 4: Policy Collaborative	$39,209,385	20%	58 jurisdictions supported
Workforce and Industry Development	$19,384,385	10%	4,800 workers trained
Total CPRG Funds	**$199,705,797**	**100%**	-
CPRG Funds Dedicated to LIDACs	**$94,817,856**	**47%**	-
In-Kind Local Staff TIme	*$3,008,343*	-	-
Leveraged Funds	*$70,250,000*	-	See **Budget Narrative** Table 9
Total Local Contributions	***$73,258,343***	-	-

* Includes Communications and Community Engagement

7.a. Budget Detail

DRCOG utilized EPA's Budget Narrative and Spreadsheet (**Budget_DRCOG.pdf**, **Budgetcalcs_DRCOG.xlsx**), which include a detailed breakout by funding type, budget category, and activity for each measure. *Decarbonize DRCOG* adheres to the allowable costs which include, but are not limited to, staffing and contractual costs necessary to implement the Measures; programs to disburse funds to home and building owners and other parties in the form of incentives; subawards to municipalities; studies, assessments, and data collection needed to develop and implement Measures; evaluation and metrics-tracking activities; planning and implementing meetings, workshops and convenings to foster collaboration among and between levels of government, the public, LIDACs, and other key stakeholders; outreach and education for stakeholders and members of the public; and training and staff capacity-building costs to implement Measures. Itemized costs related to personnel, fringe benefits, contractual costs and other direct costs are detailed in the budget spreadsheet. See Table 18 above and **Budget Narrative** Figure 1 for a budget overview.

7.b. Expenditure of Awarded Funds

DRCOG successfully manages an internal annual budget of over $50M with over 25 funding streams and allocates over $90M annually for the region. DRCOG's financials are reviewed by multiple federal and state agencies, as well as external auditors. DRCOG will develop RFP language and job descriptions immediately upon notice of award, intending to onboard the Director and Managers by September 30, 2024 and program specialists/operations staff by December 31, 2024; evaluate RFP bids and select vendors by January 31, 2025; and launch programs between April 1 and July 31, 2025, to ensure programs are operating and expending funds as soon as possible. See Section 3.c. for a detailed implementation timeline and Table 2 of the **Budget Narrative** for more annual expenditures by cost category.

7.c. Reasonableness of Cost

The allocation of the $199,705,797 budget is described in depth on pages 3-9 of the **Budget Narrative**, with a detailed approach in the **Budget Spreadsheet**. These files detail itemized costs, how each budget item's cost relates to the proposal, and resulting emission reduction activities. More details can be found on each tab of the **Budget Spreadsheet** with all cost categories itemized and rounded to the nearest U.S. dollar. Subawards, contracts, personnel, fringe benefits, travel, equipment, supplies, contractual, indirect charges, and all other costs found in the NOFO Appendix A can be found in the **Budget Narrative**.

Personnel costs are directly tied to DRCOG's existing classification system for positions with equivalent responsibilities. Programmatic budgets are directly based on model programs currently being implemented, including Denver's Healthy Homes Program (Measure 1); Boulder County's EnergySmart and PACE for energy advising and rebates (Measure 2 and 3); the Northwest Metropolitan Regional Energy Code Cohort (Measure 4); and the Illinois Climate & Equitable Jobs Act Workforce Programs and TECH Clean California Quick Start Grants (Workforce and Industry Development).