Innovation at Scale – Making Colorado a global leader in R&D-intensive innovation

1. Synopsis
### A. Description of regional growth cluster

Our Vision

The Colorado Coalition's *Innovation at Scale* initiative will execute a series of bold investments to make our state a top 20 global R&D-intensive innovation cluster by 2030[1].
Through inclusive strategies embedded in every step of our operating model, these critical investments will promote growth in the region and address some of the most pressing challenges of our generation: climate change and threats to public health.

By 2030 we will achieve the following goals:

- **8,000** new direct jobs and **3,200** indirect jobs in the R&D-intensive industries of bioscience and climate tech with an average wage increase of **30%**
- **75%** increase in R&D output measured by the number of business applications and total investments in the sector, including federal, state, and VC funding
- **25%** representation of Black and Latino populations and **50%** women in jobs in the cluster

Target sectors of *Innovation at Scale*
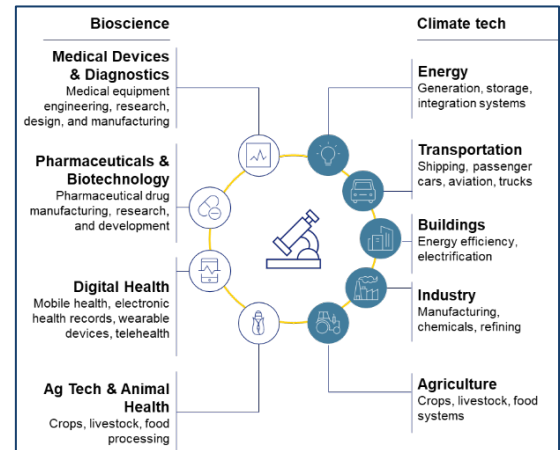
The Coalition has designed 8 interrelated component projects to achieve these goals and deliver economic impact. With this cluster strategy, the annual expenditure in science and engineering R&D in Colorado is expected to be $2B by 2030[2]. Based on extensive research in the U.S., which estimates that each dollar of R&D investment returns $5 in social gains[3], our cluster will generate $10B per year in economic impact. This includes economic gains from increased productivity, job creation, health outcomes, and other spillovers. By creating high-quality jobs to support populations most in need in Colorado, these projects will enable the region to advance **from a top 50 to a top 20 global innovation cluster** based on Global Innovation Index metrics[1].

Our Region

The Colorado Front Range is among the most thriving R&D-intensive entrepreneurial ecosystems in the nation. With nearly 900 climate tech startup and growth companies, more than 720 life sciences companies[4], 33 federal labs, 3 R1 research institutions, and multiple specialized facilities, the region ranks 5th in the country as a cleantech innovation hub[5] and is one of the most dynamic regions for bioscience innovation in North America.[6]

Colorado's R&D-intensive ecosystem builds upon a set of unique assets. With the nation's 2nd most educated population, Colorado receives the 5th highest amount of venture capital dollars as a percent of state GDP and ranks 14th in R&D expenditure per capita.[7] Colorado could become a global leader in R&D-intensive innovation if strategic investments are made.

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[1] The World Intellectual Property Organization (WIPO), a United Nations agency, currently ranks the Denver science and technology innovation cluster as #50 globally based on Global Innovation Index metrics (e.g., number of patent applications, number of scientific publications).

[2] The National Science Foundation reports that higher education R&D expenditures in science and engineering fields in Colorado was $1.57B in 2020. The cluster aims to increase R&D output and investments by 75% by 2030.

[3] A calculation of the social returns to innovation (2020). National Bureau of Economic Research (NBER).

[4] Colorado BioScience Association Industry Impact profile

[5] CO Clean Range Cleantech Ecosystem Analysis (2022). Saoradh Enterprise Partners

[6] Toward a more competitive Colorado (2021). Metro Denver EDC.

Our Challenges

The region has untapped potential to address two of our generation's most pressing and interrelated issues: climate change and threats to public health. Even if all current net-zero commitments and national climate pledges were fulfilled, the average global temperature would still rise 1.5°C above preindustrial levels.[7] Bold actions are required to meet the current US administration's ambitious target of reducing greenhouse gas emissions by 50% in 2030 from 2005 levels. Moreover, the COVID-19 pandemic has exposed vulnerabilities in global health, highlighting the need for strategic investment in bioscience, such as pharmaceuticals, medical devices, advanced product manufacturing, and advancements to treat infectious diseases.[8]

The COVID-19 pandemic also dealt an unprecedented blow to the state's labor market, evaporating 342,000 jobs in a matter of months and disproportionately affecting workers from historically excluded communities.[9] While over one-quarter of white workers in Metro Denver earn above $68,000, only 11.7% of Black workers and 8.9% of Latino workers are in this income band.[10] Inclusive job growth is a challenge as Colorado recovers from the COVID-19 pandemic.

While Colorado's bioscience and climate tech industries are well-positioned to address the issues outlined above, the scale and complexity of these challenges demand bold investments to truly move the needle and support our nation in its efforts to reduce climate and health risks. A recent report highlights that Colorado has fallen in critical innovation indicators such as R&D per capita and early-stage entrepreneurship in the past four years, increasing the likelihood that Colorado could drop in rank in the coming years if no additional investments are made.[7] This application proposes a series of transformational investments that will leverage our assets to bring not only Colorado but our nation to the forefront of innovation and job creation in bioscience and climate tech… that is what we call **Innovation at Scale**!

B. Coalition Members

The Colorado Coalition consists of stakeholders across public, private, and educational sectors, each bringing unique, complementary strengths to achieve our overarching mission.

Colorado Coalition members	Role
Innosphere Ventures	Lead institution for the Coalition; Regional Economic Competitiveness Officer; lead two non-construction projects and three construction projects (Wet Labs Incubator in Boulder, Wet Labs Incubator in Denver, and Powerhouse 2 Climate Solutions Building)
Metro Denver Chamber/Metro Denver EDC	Lead outreach to local businesses and economic resources across the State of Colorado
Prosper CO	Lead diversity, equity, and inclusion across the cluster through talent development, procurement and community engagement initiatives
State of Colorado/National Renewable Energy Lab	Lead the Global Energy Park/climate tech R&D center
University of Colorado Boulder	Support Wet Labs Incubator in Boulder
Colorado State University	Lead BioMARC 2.0 expansion; support Powerhouse 2 Climate Solutions Building
Colorado School of Mines	Lead Sustainable Infrastructure Center development
University of Colorado Health	Support bioscience cluster by expanding clinical trials capacity
Colorado BioScience Association	Lead specialized cluster support, incubation, and programming for bioscience
Colorado Cleantech Industries Association	Lead specialized cluster support, incubation, and programming for climate tech
Tri-State Generation and Transmission Association	Lead a feasibility study for the Craig Power Plant transition to green hydrogen test and demonstration
Cities of Boulder, Denver, Fort Collins	Support development of Wet Labs Incubators in Boulder and Denver, research & development centers, and incubator programs

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[7] The net-zero transition: What it would cost, what it could bring (2022). McKinsey & Company.

[8] The biosciences economy: Supporting State and Local communities (2020). Biotechnology Innovation Organization.

[9] CU Boulder Economic Forecast (2020)

[10] U.S. Census Bureau American Community Survey (2019)

Innosphere Ventures is a 501(c)(3) organization and long-standing science and technology incubator that has accelerated startup and growth companies through commercialization programs, office and laboratory facilities, and a seed-stage venture capital funding for more than 24 years. The two industry associations, **Colorado BioScience Association (CBSA) and Colorado Cleantech Industries Association (CCIA)** bring together leading public and private sector partners to spark innovation and increase bioscience and climate tech funding. **Metro Denver EDC and Prosper CO** lead equity initiatives to support local businesses and workforce development. The DEI strategies led by Prosper CO will be adopted cluster-wide, with the BBB/Prosper CO Liaison interfacing with component project leads. With support from **UCHealth** and local governments, our 3 elite higher learning institutions, **CU Boulder (CU), Colorado State University (CSU), and CO School of Mines (Mines)**, will serve as R&D hubs, sources of future entrepreneurs, and recruitment pools for talent.
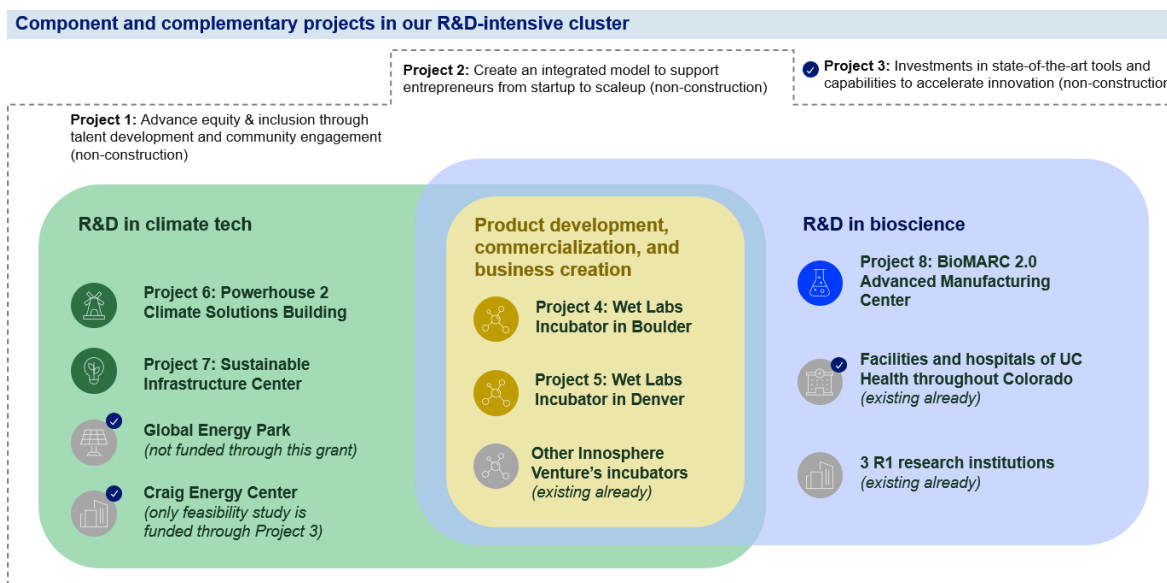
C. Component Projects

The Coalition has 8 component projects: 3 non-construction and 5 construction. Each project is critical to executing the vision of our cluster:

Project	Lead(s)	Description
Project One: Advancing equity & inclusion through talent development and community engagement (non-construction)	Prosper CO, Metro Denver EDC	Build talent pathways, utilize tools to track DEI metrics, adopt proactive inclusion strategies, and promote procurement from minority-owned businesses across component projects to increase Black/Latino representation in high quality jobs to 25% by 2030
Project Two: Create an integrated model to support entrepreneurs from startup to scaleup (non-construction)	Innosphere Ventures, CBSA, CCIA, Metro Denver EDC	Provide integrated incubation programming for entrepreneurs and early ventures in bioscience/climate tech, incubating 25 new startups annually beginning in 2023 and creating 2,400 new jobs
Project Three: Invest in state-of-the-art R&D tools and capabilities to accelerate innovation (non-construction)	Innosphere Ventures, State of CO, NREL, UCHealth, Tri-State	1) Plan for coal to H2 conversion at Craig power plant; 2) expand capacity for Colorado-based clinical trials; and 3) supply equipment at Glo Energy Park to drive increased R&D output toward 75% target and create quality jobs in the **coal community** of Craig County
Project Four: Wet Labs Incubator in Boulder (construction)	Innosphere Ventures	Construct startup/scaleup BSL-2 wet lab spaces, including offices, meeting rooms, & entrepreneurial incubator services, creating 900 jobs and helping **Boulder** startups attract capital through innovations
Project Five: Wet Labs Incubator in Denver (construction)	Innosphere Ventures	Construct startup/scaleup BSL-2 wet lab spaces, including offices, meeting rooms, & entrepreneurial incubator services, creating 1,500 jobs and helping **Denver** startups attract capital through innovations
Project Six: Powerhouse 2 Climate Solutions Building (construction)	Colorado State University, Innosphere Ventures	Expand existing Powerhouse campus, the nation's first university-based commercialization center dedicated to climate tech, to meet the nation's goal of net-zero carbon emissions by 2050 and create 1,100 jobs
Project Seven: Sustainable Infrastructure Center (construction)	Colorado School of Mines	Construct R&D center for manufacturing, sustainable resource management, advanced energy systems, water, and infrastructure to increase climate tech research awards by 25% and triple the number of Mines graduates trained in sustainable technology
Project Eight: BioMARC 2.0 Advanced Manufacturing Center (construction)	Colorado State University	Expand existing BioMARC facility to create a national asset for infectious disease-related biomanufacturing for human/animal diseases, creating 40 high-paying cluster jobs and training 100+ students.

The Coalition members leading each project are deeply connected to Colorado's R&D-intensive industries and local talent. Several construction facilities in this proposal were designed years ago, so there is strong, coordinated Coalition support for implementation. Many projects have also secured external funding sources (e.g., $150M investment for Glo Park, matching donations and private contributions for Sustainable Infrastructure Center) through proactive fundraising, making this a solid, financially viable cluster strategy. With EDA funding, **we will unite the Coalition and build a cluster greater than the sum of its parts**: By executing the construction of facilities and investments in tools, our R&D-intensive startups can access state-of-the-art equipment and expand more rapidly, creating jobs for diverse talent and opportunities to scale DEI efforts for

cluster-wide economic prosperity. We are dedicated to creating a cohesive cluster, where projects work in tandem instead of operating in silos, by bridging construction initiatives, advanced equipment, DEI strategies, and entrepreneurship together:

Component and complementary projects in our R&D-intensive cluster

Project 2: Create an integrated model to support entrepreneurs from startup to scaleup (non-construction)

Project 3: Investments in state-of-the-art tools and capabilities to accelerate innovation (non-construction)

Project 1: Advance equity & inclusion through talent development and community engagement (non-construction)

R&D in climate tech

Project 6: Powerhouse 2 Climate Solutions Building

Project 7: Sustainable Infrastructure Center

Global Energy Park *(not funded through this grant)*

Craig Energy Center *(only feasibility study is funded through Project 3)*

Product development, commercialization, and business creation

Project 4: Wet Labs Incubator in Boulder

Project 5: Wet Labs Incubator in Denver

Other Innosphere Venture's incubators *(existing already)*

R&D in bioscience

Project 8: BioMARC 2.0 Advanced Manufacturing Center

Facilities and hospitals of UC Health throughout Colorado *(existing already)*

3 R1 research institutions *(existing already)*

D. Alignment with CEDS Equivalent

The Colorado Coalition's vision and supporting projects align directly with the 2011 Colorado Blueprint, an Approved CEDS Equivalent[11]. The core pillars of the Blueprint are 1) retain, grow, and recruit companies; 2) increase access to capital; 3) educate and train the workforce of the future; and 4) cultivate innovation and technology. Innovation at Scale will cultivate innovation through R&D, accelerate commercialization, and grow businesses in R&D-intensive industries by providing access to capital and training a diverse talent pool. All component projects will adopt DEI strategies from Project One to support the goal of increasing Black and Latino representation to 25% and representation of women to 50% across jobs in the cluster.

This cluster strategy also supports the Colorado Office of Economic Development's (OEDIT) 2021 Strategy[12]. Two pillars of OEDIT's strategy include 1) Global Business Development and 2) Business Support & Rural Prosperity. The Coalition will build this innovation cluster in R&D-intensive industries focused on bioscience and climate tech, which are two of the six core industries in OEDIT's Global Business Development Strategy. The Coalition aims to increase R&D output and total investment by 75% by 2030, aligning with OEDIT's strategy to increase funding and support for early-stage companies in advanced industries.

E. Complementary Projects

The Global Energy Park (Glo Park) is the main complementary project in the application. This development will be a marquee campus where industry, government, and academia gather to lead the global transition toward clean, renewable, sustainable, and equitable energy solutions. The project will receive up to $150 million in funding from a Public-Private Partnership (PPP) with the State of Colorado and the National Renewable Energy Lab (NREL). The 9.3-acre park will be located next to NREL facilities, with capacity for leading companies to explore the future of

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[11] The 9-county Front Range region does not have an active CEDS. EDA representatives have recommended the 2011 Colorado Blueprint as an approved alternative.
[12] Colorado OEDIT Annual Report (2021)

energy. Capabilities developed at Glo Park will support the startup ecosystem, as climate tech ventures in Project Two's integrated incubator program can access this facility for advanced R&D. Coalition members leading Powerhouse 2 and the Sustainable Infrastructure Center will also interface with Glo Park to share best practices and collaborate for climate tech innovation.[13]

F. Metrics of success

The **Innovation at Scale** initiative has four overarching goals, with metrics and key outcomes to measure impact. All component projects support at least one overarching goal.

Overarching goals for the cluster		Metrics to track progress toward goals	Key outcomes for the cluster
Build innovation cluster	**Top 20** Global R&D-intensive innovation cluster	• # of patent applications submitted • # scientific publications published • # SBIR, DOE, and NSF grants awarded • GDP contributions from selected sectors	• Achieve recognition as a top 5 U.S. life sciences cluster by 2030, up from the current rank at #13[1] • Achieve recognition as a top 3 U.S. cleantech cluster by 2030, up from the current rank at #5[2]
Accelerate innovation	**75%** Increase in R&D output and investments	• Total VC funding for seed stage climate tech & bioscience ventures • Graduation rates for startups in incubator program • # startups pursuing clinical development of assets	• Triple the amount of overall early-stage (Series A & B) VC funding to $2.8B by 2030[3] • Increase the number of clinical trials conducted annually at UCHealth by up to 6 by 2025
Promote economic growth and job creation	**8,000** New direct jobs and 3,200 additional indirect jobs with 30% average wage increase	• Total direct and indirect job growth in the region • Unemployment rate in the region • Average wage increase by race, ethnicity, and gender	• Create 2,400 high wage bioscience & climate tech jobs by transitioning startups to R&D wet labs • Create 5,600 high wage jobs across R&D-intensive industries and component projects by establishing new facilities and growing the small business ecosystem
Grow equitably and inclusively	**25%** Black and Latino representation and 50% representation of women	• Black/Latino representation in upskilling programs • % of companies with improvement in employee diversity metrics • % of cluster companies diversifying procurement	• Increase the percentage of Black and Latino workers in bioscience & climate tech positions to 25% by 2030, with an average salary over $45K • Hire at least 10% of new roles for component projects from alternative hiring pools that aim to increase minority/women representation

1. Based on the 2020 U.S. Life Sciences Report by CBRE
2. Based on the 2021 Cleantech Innovation Hubs Survey by Saoradh Enterprise Partners (SEP)
3. Based on the 2021 Crunchbase U.S. VC funding analysis, Colorado early-stage (Series A & B) VC funding was $941M in 2021

In addition to these metrics, the Coalition will support broader U.S. goals in public health and climate change. Technology advances in climate tech can accelerate net-zero initiatives and contribute towards the Biden Administration's goal of reducing greenhouse gas emissions by 50% in 2030 (from 2005 baseline). Moreover, bioscience innovations have potential to improve public health outcomes by developing new solutions to prevent, treat, and manage disease.

G. Implementation timeline

Most construction projects will start by the first quarter of 2023 and will be finalized by the end of 2024 or early 2025 (exception is the Sustainable Infrastructure Center, to be completed in 2026). The implementation of non-construction projects will start as soon as January 2023.
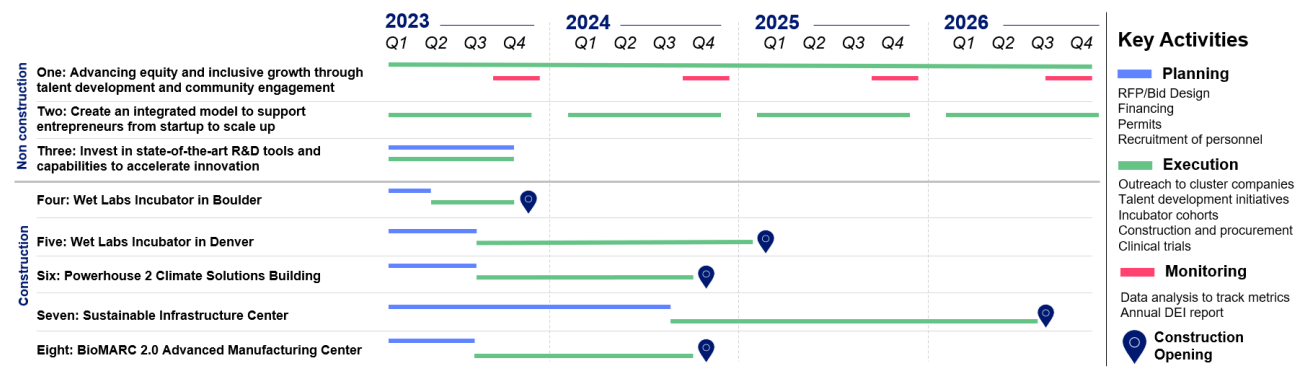
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2. Project Location

A. Communities, Participants Served, and Impact in Coal Communities

The Coalition's focus is the 9-county region of the Colorado Front Range (FIPS codes): Adams (08-001), Arapahoe (08-005), Boulder (08-013), Broomfield (08-014), Denver (08-031), Douglas (08-035), Jefferson (08-059), Larimer (08-069), and Weld (08-123). Our work will have an additional impact on the **coal community of Craig in Moffat County** (08-081).

While Colorado is a national leader in economic progress, the benefit to residents is not uniform. In Denver and Adams counties, where populations of color are larger than the state average, median household income is ~40% lower for Black/African Americans and ~15% lower for Hispanic/Latinos, compared to the county-wide median values.[14] Denver also has the highest poverty rate (12.4%) among the 9 cluster counties, while Adams has the highest unemployment rate (5.5%).[15] These counties lag Colorado overall, with a poverty rate of 9.0% and an unemployment rate of 4.6%.[14] COVID-19 disproportionately affected workers from historically excluded communities, and it is estimated that 380,000 workers are still at risk across industries in Denver.[16] For Colorado's bioscience and climate tech jobs, which traditionally require advanced degrees, minority representation remains under 25% due to educational attainment disparities. Bachelor's degree certification is 23% lower for the Black population and 36% lower for the Hispanic population, relative to the White, non-Hispanic rate[17]. Project One lays the groundwork for local workforce development to address these disparities, redefine talent pathways, and promote inclusive job growth, especially for minority workers without degrees.

Project Three has the potential to **profoundly impact rural communities in the state, particularly <u>coal communities</u> in Moffat and Larimer Counties.** Moffat County, site of the Craig Power Plant, is at risk of significant labor market disruptions as the plant is decommissioned between 2025 and 2029. The plant accounts for 37% of property taxes paid to the county and there are over 365 people at risk of losing their jobs, which represents 5% of the working-age population in the county.[18] By revamping Craig Plant into a test-and-demonstration center for green technologies, we can create new job opportunities for displaced workers. In Project Three, we aim to conduct a feasibility study for the creation of a regional energy research center from the decommissioned Craig Power Plant. By successfully demonstrating large-scale energy storage of green hydrogen at Craig, all 42 utility members of Tri-State will benefit from the clean energy, and 1.3 million rural residents could potentially access cleaner power. As other coal plants in the region also prepare to be retired (e.g., Larimer County's Rawhide Energy station), **this feasibility study could serve as a template for an expanded coal to clean energy transition across the state.**

B. Assets[19]

Colorado Coalition members already have implemented a series of initiatives and programs that will multiply the impact of any investment in the cluster. The **University of Colorado Boulder** hosts nationally-recognized interdisciplinary research institutes in bioscience and climate

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[14] U.S. Census Bureau ACS 1-year Estimate (2019)

[15] U.S. Census Bureau (2019); Colorado Department of Labor and Employment County Report (September 2021)

[16] Brookings Institute estimate (2021)

[17] EMSI Metro Denver Regional Report (May 2021)

[18] Coal in Colorado (2022). Department of Labor and Employment

[19] Sources for fact table exhibit: CO Clean Range Cleantech Ecosystem Analysis (2022). Saoradh Enterprise Partners; Bioscience: Metro and Northern Colorado Industry Cluster Profile (2021). Metro Denver EDC; Toward a more competitive Colorado (2021). Metro Denver EDC.

technologies such as the Bio Frontiers Institute, the Institute of Behavior Genetics, and the Renewable and Sustainable Energy Institute. **Colorado School of Mines** is poised to become a national leader in climate tech innovations through the Global Energy Future Initiative and deep expertise in materials science, renewable energy, water, and critical minerals. The 100,000 square-foot Powerhouse Energy Campus (PEC) of the **Colorado State University** (CSU) serves as the University's Energy Institute headquarters focused on climate tech entrepreneurship. CSU's Foothills Campus is also home to the Infectious Disease Research Center (IDRC), a unique hub of translational biology that integrates academic research, entrepreneurial companies, world-class biomanufacturing operation (BioMARC), and the Regional Biocontainment Laboratory of the NIH/NIAID unified under one roof.

Front Range Region
Nearly **900** climate tech startup & growth companies
More than **720** life sciences companies
3 R1 research institutions
Specialized facilities including federal labs
State of Colorado
Top **10** cleantech startup and growth companies
2nd most educated population
3rd highest concentration of high-tech employees
5th highest VC dollars spent as a % of state GDP
6th highest concentration of SBIR grants
14th highest R&D expenditures per capita
10th most patents granted per capita

Assets from private sector Coalition members also bring this R&D-intensive cluster to life. The **Colorado BioScience Association** and the **Colorado Cleantech Industries Association** convene industry, higher education, and nonprofit members who develop and commercialize bioscience and climate tech innovations. In addition, **Innosphere Ventures** is recognized as a leader in entrepreneurship supporting Colorado and the Mountain Plains region, as evidenced by the DOE-funded energy tech incubator program providing virtual incubation programming in over 14 states. Finally, the **Metro Denver EDC** brings together more than 70 cities, counties, and economic development agencies in the nine-county region to facilitate decision making, while **Prosper CO** has developed a series of proven tools and strategies to create opportunities for inclusive growth among the most vulnerable. The region has the right stakeholders and assets to build a pre-eminent cluster in R&D-intensive innovation.

3. Participation from Private Sector Entities

The stakeholders in the Colorado Coalition will work closely to implement the construction and non-construction projects as described above. In addition, Coalition members have **committed to a total of $24.965 million in matching funds** to implement the Innovation at Scale component projects. Over one-quarter of these matching funds will be from the State of Colorado, while the rest will be sourced from other Coalition members including Innosphere Ventures, Metro Denver EDC, Prosper CO, CBSA, CCIA, UCHealth, Tri-State Generation and Transmission Association, Colorado School of Mines, and Colorado State University.[20] Furthermore, Coalition members have several **industry partners** who are highly engaged in shaping the Initiative's programs. The Colorado Coalition has defined three actions to leverage the industry partnerships and strengthen the impact of the component projects:

Forming growth cluster-focused advisory boards: CBSA, CCIA, and MDEDC have strong industry relationships, and these partners can support ongoing cluster building. CBSA has deep ties to companies across the bioscience ecosystem (e.g., AGC Biologics, Medtronic, SomaLogic). CCIA works closely with equipment suppliers and manufacturers (e.g., AMP Robotics, General Motors, Toyota). MDEDC/Prosper CO engages with foundations (e.g., Colorado Health Foundation, Rose Community Foundation).

Developing training programs and securing hiring commitments: Project One will design training programs to build talent pipelines that the cluster will demand. We will work with industry

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[20] Letters of commitment from Colorado Coalition members are included in this application

partners, local universities, and nonprofit training providers to create upskilling programs, establish internships and apprenticeships, and share skill-based and fair chance hiring practices with employers for robust workforce development, especially for diverse talent.

Implementing a comprehensive inclusion strategy with industry partners: Inclusive growth is at the core of all Innovation at Scale component projects. We will engage with existing industry partners like the Black Business Initiative, and She's in Power to reach 25% representation of Black and Latino community members and 50% women for jobs in the industry.

4. Sustainability Plan

Colorado Coalition members have extensive expertise managing successful nonprofits, advanced research & development centers, technology centers, and nonprofit/governmental organizations. We have high confidence in our demonstrated ability to execute programs and operate the proposed component projects following the EDA funding. In addition, Coalition members have committed to sustaining ongoing funding and operations beyond the grant performance period.

- Project One: Advancing equity & inclusion through talent development and community engagement. **Prosper CO**, an initiative of the Metro Denver Chamber of Commerce and the Metro Denver Economic Development Corporation, is sustainable through investment from the Chamber and the 43 industry members from all three sectors. Those entities will continue funding the program beyond the life of the EDA grant to secure sustained impact.
- Project Two: Create an integrated model to support entrepreneurs from startup to scale up. **Innosphere Ventures, CBSA, CCIA, and Metro Denver EDC have committed to continued funding** beyond the performance period.
- Project Three: Invest in state-of-the-art R&D tools and capabilities to accelerate innovation. **The Tri-State Generation and Transmission Association** will assume additional costs and funding efforts from the feasibility study to convert the retiring Craig Power Plant into a hydrogen test and demonstration facility. The **State of Colorado** and the **National Renewable Energy Laboratory** will oversee the use of equipment secured from the EDA grant for the Global Energy Park. **UCHealth** will sustainably fund ongoing clinical trials.
- Project Four: Wet Labs Incubator in Boulder. **Innosphere Ventures** will assume ongoing operational funding utilizing leasing income as its principal funding source.
- Project Five: Wet Labs Incubator in Denver. **Innosphere Ventures** will assume ongoing operational costs utilizing leasing income as its principal funding source.
- Project Six: Powerhouse 2 Climate Solutions Building. **Colorado State University** will assume ongoing operational costs utilizing lease income as its principal funding source.
- Project Seven: Sustainable Infrastructure Center. **Colorado School of Mines** will fund the completion of the building and assume ongoing operational costs.
- Project Eight: BioMARC 2.0 Advanced Manufacturing Center. **Colorado State University** will assume ongoing operational costs through the program income streams generated by the facility.

Finally, for the governance of the Innovation at Scale initiative, we will establish the Colorado Coalition Advisory and Implementation Board by 2024, led by the Regional Economic Competitiveness Officer (RECO). The board will also include Coalition members leading each component project and will meet monthly to discuss progress. **The RECO position will be filled by Mike Freeman, who plans to step down from his day-to-day role as CEO of Innosphere Ventures to dedicate time and resources to the development of the cluster fully**.

5. Community engagement

Colorado Coalition members developed a comprehensive strategy to offer fair labor standards to workers in the cluster and partner with local community-based organizations to engage with underserved communities and track progress in the implementation of equity initiatives. **Metro Denver EDC** and **Prosper CO** will lead community engagement through two fronts:

Collaborate with community-based organizations that are part of Coalition members' networks: Prosper CO's leadership council includes organizations that work closely with underserved communities, such as the Black Business Initiative, the Boettcher Foundation, Habitat for Humanity, and the Latino Leadership Institute, which maintain close ties to communities that could benefit from the training and job creation opportunities that the cluster will offer. For example, the Coalition plans to collaborate with the She's in Power program of the Colorado Clean Energy, Energy and Empowerment Initiative, which aims to match young women trainees in the climate tech space with mentors, projects, and sponsors.

Embed strong labor standards for fair wages and fair hiring in Coalition members' recruiting practices: The Coalition will collaborate with community-based organizations to develop guidance on fair hiring across the cluster. Prosper CO has already partnered with Fair Chance Hiring Coalition, to implement fair hiring practices. The Coalition will work with similar organizations to expand the job opportunities for minorities and women. As described in Project One, Prosper CO will also publish reports to track DEI progress in the region and develop guidance on fair wages and fair hiring practices for Coalition members.

6. Equitable distribution of benefits

Equity is a major driver of the Coalition's vision, and we will ensure that the benefits of our initiative are shared with the community. As described in Project One, the strategy to ensure equitable distribution of benefits will follow three pillars:

Build talent pathways that support skills training and job growth for historically excluded groups: The Coalition will collaborate with partners to build workforce development training programs to address skills gaps among historically excluded populations in the region, thus increasing their access to job pathways that promote labor mobility and career progression.

Utilize tools to improve and track employer engagement with minority populations – Prosper CO has already made great strides to promote career advancement and small business support for women and BIPOC residents with two proprietary tools: 1) **Compass**, a diversity benchmarking tool to compare a company or industry's employee diversity metrics to the region's demographics by income, and 2) **ShopBIPOC**, a procurement platform to source goods and services from BIPOC-owned businesses.

Embed inclusion strategies into the operating model of each component project: The Colorado Coalition will bring inclusion strategies for talent development, procurement, and community engagement to component projects in the cluster. This will enable component projects to 1) attract a diverse talent pipeline of qualified individuals from historically excluded populations, 2) recruit and hire equitably for bioscience and climate tech roles in the cluster, 3) retain a diverse workforce in an inclusive environment, and 4) promote diverse talent by ensuring equity in review processes.

Finally, the cluster strategy is likely to have widespread benefits beyond the Front Range and its urban metros. For example, CSU invites students across Colorado for its BioMARC 2.0 program to receive training in a nationally-leading research facility. This will empower students from rural communities to build advanced skill sets, creating the workforce of tomorrow. The Coalition also

projects BioMARC 2.0 will deliver broad societal impact by developing technologies that address diseases like African Swine Fever. These diseases threaten the agricultural industry in Colorado, especially for small family farms in rural settings. Solutions developed by the cluster can be adopted in rural towns nationwide.

7. Outcomes expected from the cluster

There are four overarching outcomes, each with unique markers of success. The expected outcomes were estimated based on historical data on job creation, wages, employment, and R&D outputs for the past 10 years in the region. The Coalition is confident that the goals are both ambitious and achievable. *See Metrics of Success (page 5) for additional details*.

Building an innovation cluster: We aim to be recognized as a **top 20 global innovation hub** in the fast-growing bioscience and climate tech sectors. Progress toward this goal will be tracked by the number of jobs in R&D-intensive sectors, patent applications submitted annually, scientific publications published annually, and GDP contributions from selected sectors.

Accelerating innovation: Achieve a **75% increase in R&D outputs and investments** in target industries by 2030. We will measure R&D output by total VC funding, graduation rates from incubator programs, and the number of startups pursuing clinical development.

Creating economic growth: We aim to increase the number of **direct jobs** in the bioscience and climate tech spaces **by 8,000 with additional 3,200 indirect jobs**. With a detailed analysis of historic trends in job creation and wages, the Coalition set the goal of an **average increase of 30% in wages** among the population that benefits from the jobs created in the cluster.

Increasing equitable and inclusive growth: We aim to increase the representation of **Black/African American and Hispanic/Latinos, and women** employees across our workforce **to 25% and 50%, respectively**. Prosper CO tools will help track progress against this goal.

8. Progress Made Between Phase 1 and Phase 2

Since Phase 1, the Coalition has made significant progress in developing Glo Park: a marquee campus where industry, government, and academia will gather to lead the global transition toward sustainable energy solutions. This project is now in the RFP stage. The Coalition also secured a $6.2M match commitment from the Colorado Office of Economic Development and International Trade, which is included in the total match reported earlier in the document.

9. Changes Between Phase 1 and Phase 2

The Colorado Coalition has made two major changes since Phase 1:

Refined overarching goals: The Coalition reviewed historic data for relevant metrics outlined in this narrative to revise our overarching goals. Historical trends and comparative analyses with other states helped refine goals for job creation, wages, and R&D outputs.

Restructured Components Projects: The Coalition restructured the non-construction component project of the application. This was consolidated as one non-construction project in the first phase of the application and now consists of three separate projects. Project One is focused on advancing equity and inclusive growth, Project Two aims to create an integrated incubator model, and Project Three will invest in state-of-the-art tools and capabilities. In addition, Global Energy Park is no longer a component project in the application. The project will be executed through a Public-Private Partnership (PPP) in collaboration with the State of Colorado. This EDA grant application includes the purchase of equipment for Glo Park in Project Three.