SYNOPSIS

Regional Growth Cluster

The vision of the Illinois Clean Tech Economy Coalition (*CTEC*) is to grow Illinois' regional economy by becoming a national leader in energy infrastructure products, components, and services, and advancing clean energy efficiency through a modernized grid. Historically disinvested and coal-impacted communities will co-create and drive growth as business owners, employees, decision-makers, and consumers to ensure the virtuous innovation lifecycle fully aligns economic, equity, and climate goals.

Grid modernization is a global priority that addresses an aging power system ill-equipped to meet current and future energy demands. To achieve grids of the future, energy from distributed sources needs to be created, stored, integrated, and managed across a network of points, requiring new infrastructure.

Illinois is poised to lead the Midwest and the country in energy infrastructure. It is the first major coal-producing state in the nation, as well as the first Midwest state, to commit to a carbon-free future by 2045. It also has a key advantage with two U.S. Department of Energy (DOE) national labs, a thriving entrepreneurial ecosystem, and the third-largest manufacturing economy in the country.

A 2022 study commissioned by CTEC partners validates that Illinois has the key industries and workforce required to innovate and produce products and services to support the energy infrastructure cluster. This includes energy storage, transmission and distribution, and grid and energy management sub-clusters. Illinois has manufacturing strengths in electronics, metals, chemicals, and renewable energy hardware such as wind turbines. It has high *location quotients* in core and related industries: environmental controls (6.2), battery storage technologies (1.8), hydrogen fuel cells (1.1), wind energy generation (2.5), solar energy generation (1.9), lighting (2.0), and appliances (1.6). CTEC will coordinate the creation, scaling, and deployment of solutions that enable grid modernization globally and grow the cluster in Illinois.

Coalition Members and Component Projects

There are six essential component project investments led and supported by 19 CTEC partners. They will focus on the development of next-generation grid technologies and manufacturing capacity of energy infrastructure-related products. CTEC aligned the six projects against three strategic pillars that address the critical barriers to market-driven growth of the cluster in Illinois. Every project focuses on equity and inclusion and drives the vision of CTEC.

Pillar 1: Innovation & Entrepreneurship will create intentional products from research to commercialization, and provide equitable access to support, lab equipment, and capital for entrepreneurs.
Project 1: mHUB (lead), Evergreen Climate Innovations (ECI), Greater Englewood Chamber of Commerce (GECC), and Elevate Energy will create an innovation network for product developers and construction industries including an incubator, makerspace, and community programming targeting BIPOC and women.
Project 2: University of Chicago (UChicago) (lead) will create a cleantech incubator focused on energy programs, commercializing breakthrough innovation from research conducted by Argonne National Laboratory (Argonne), and partner with Emerald South Development Collaborative (ESDC) for community programming in their new entrepreneurship center.

Pillar 2: Production Capacity will determine supply chain and workforce gaps and help manufacturers and workers transition into the cluster.
Project 3: Cook County Government (lead), Illinois Manufacturing Excellence Center (IMEC), and Climate Vault will conduct a supply chain needs assessment, target specific manufacturers for retooling for growth, and provide technical assistance while reducing the carbon footprint of manufacturers.
Project 4: Southern Illinois University Edwardsville (SIUE) (lead), the Illinois Innovation Network, Daley College, College of Lake County (CLC), Bright Star Community Outreach, and Argonne will convene industry and community partners to assess workforce needs, design industry-led training programs and expanding training capacity throughout the state.

Pillar 3: Well-Planned & Equitable Deployment will build Illinois' capability in energy storage, distribution, and management across urban and rural settings through grid research, testing, and infrastructure development.

Project 5: Southern Illinois University Carbondale (SIUC)(lead) will conduct microgrid research and testing, create electric vehicle (EV) and microgrid programs, and study the impact of EV deployment in rural settings. Northwestern University and Argonne will research microgrid testing and deployment in Opportunity Zones (OZs).

Project 6: Northwestern University (lead), Cook County Government, Center for Neighborhood Technology, and Argonne will install 115 EV chargers in disinvested communities in south suburban Cook County as well as test feasibility of EV buses and car-share programs in transportation deserts.

The CTEC Center will provide strategic direction and coordination across projects. There are seven additional entities that will support the six projects with personnel, expertise, and resources: City Colleges of Chicago, World Business Chicago, City of Chicago, Civic Consulting Alliance, Chicago Metropolitan Agency for Planning (CMAP), P33, and the State of Illinois. CTEC will leverage Argonne, Fermilab, MxD, and several universities and research institutions. CTEC will also work with representatives from over 270 city, county, and regional governments, community-based organizations, energy providers, workforce investment boards, research centers, manufacturing and industrial commissions, colleges and universities, accelerators and incubators, chambers of commerce, BIPOC organizations, and major corporations.

Alignment with Local, Regional, and State of Illinois CEDS

CTEC aligns with the plans of the State of Illinois, CMAP *ON TO 2050* regional plan, Cook County, the City of Chicago, and the CEDS of the 12 EDDs located in central, western, and southern Illinois. The Blackhawk Hills Regional Council, North Central Illinois, Two Rivers, South Central, Southeastern, and Bi-State Region CEDS call for investments in renewables and grid modernization. These plans support CTEC's vision for the energy infrastructure cluster, and its workforce development, economic equity, and climate justice goals. CTEC also creates solutions for the energy, workforce, and industry goals of the State of Illinois 2021 Clean Energy Jobs Act (CEJA) and Reimagining Electric Vehicles Illinois Act (REVA).

Additional, Complementary Initiatives Outside of the Component Projects

In addition to the $29.5 million from the state and $3.4 million from Cook County to expand CTEC's scope, Cook County has also allocated an additional $9.25 million to support manufacturing programs and a metals hub. CTEC members have engaged in complementary projects including ECI's $4.5 million Illinois Climate Innovation Fund, a $30.0 million workforce development center at CLC focused on manufacturing and clean energy, and a collaboration between UChicago and other universities on programs related to the Bronzeville community microgrid. IMEC will direct its operating funds to support manufacturer retooling.

Metrics of success and outcomes

Time period	Revenue Generated (Billions)	Investment Attracted (Billions)	# Businesses /Products Launched	# Workers Trained	Direct Jobs Created	Indirect Jobs Created
Grant period (Oct 2022 - Sept 2027)	$4.0	$2.6	1,381	4,208	8,201	40,667
5 years post-grant period (Sept 2032)	$7.7	$3.7	1,342	5,579	14,461	66,993

The average salary in this industry for each *direct* job created is expected to be $93,000 with 59% going to BIPOC and women. The average salary for each *indirect* job created is expected to be $62,000 with 80% going to BIPOC and women. CTEC will engage more than 222,000 community members across the state and place 283 EV charging stations in disinvested communities.

General Timeline for Implementation – 10/1/22 to 9/30/27

- **Year 1** (10/1/22 to 9/30/23): Start construction projects, engage community to refine programs and recruit entrepreneurs prioritizing BIPOC and women, small-to-medium enterprises (SMEs), conduct supply chain and workforce assessments, design initial training programs, assess regional grid research and design, identify sites for EV charging, conduct evaluations of all six projects.
- **Year 2** (10/1/23 to 9/30/24): Complete construction projects, continue startup, SME, workforce, and manufacturer recruitment and programming, continue grid research and design, plan for EV charging, conduct car sharing feasibility study, evaluate progress including air quality and EV assessment.
- **Year 3** (10/1/24 to 9/30/25): Continue research and entrepreneur/SME programming, assist retooling of manufacturers, continue job training, place EV charging stations, prototype EV charging stations for agricultural use, plan for additional scope opportunities for CTEC, conduct evaluations of all six projects. Expand access to venture capital and build investor relationships.
- **Year 4** (10/1/25 to 9/30/26): Continue programming, cleantech SMEs launch their companies, continue engagement of manufacturers and workforce, expand use of EV charging stations throughout Illinois, plan for additional funding opportunities for CTEC, conduct evaluations of all six projects.
- **Year 5** (10/1/26 to 9/30/27): Collect final data, generate, and disseminate reports to EDA, CTEC partners, State of Illinois, counties, cities, and local governments as required.

LOCATION AND REGION

CTEC will serve all 102 counties in the state of Illinois (FIPS: 17). Please see the attachment with this application for a list of the counties and FIPs codes served.

Recent landmark statewide legislation, including CEJA and REVA, calls for 100% clean energy use by 2050, a carbon-free future by 2045, and 1.0 million EVs on its roads by 2030. The 2021 Chicago Recovery Plan proposes to invest $101.3 million in climate resilience infrastructure. CTEC partners will lead the way to invent, manufacture, and commercialize cleantech using alternatives to coal-fired electrical generation, to create equitable solutions for Illinois to achieve these targets. Illinois is second in the nation making significant progress toward modernizing its grid, the third largest manufacturing base in the U.S., has a thriving research and innovation ecosystem, plays key role in national transportation and logistics, a ready workforce, and has a track record of statewide collaboration.

Illinois' over 8,500 manufacturers have concentrations in critical inputs for energy infrastructure including machine tool manufacturing, fabricated metals, and fixtures. 95% of these are small, with fewer than 20 employees, creating a nimble supply chain capable of pivoting quickly to new markets.

Illinois is top-ranked in the science and engineering fields including applied research. Leading research institutions include Argonne and Fermilab, both doing research on next-generation technologies in energy storage, transmission and distribution, and management. Argonne houses the Joint Center for Energy Storage Research, a lithium-ion battery recycling initiative, and has capabilities to 3D print batteries. The Illinois Institute of Technology partnered with ComEd to build the first community microgrid in the Bronzeville OZ of Chicago, and currently leads the region with 15 microgrids.

The state has a thriving ecosystem of innovation and venture capital (VC) around cleantech. Several incubators and accelerators focus on clean energy including MxD, Energy Foundry, and the DOE top-ranked mHUB that has generated $1.0 billion in investments in its first five years. Last year $650.0 million in energy-focused VC funds went to SMEs in Chicago alone.

Illinois has a ready workforce of 5.2 million people statewide in jobs with skills that are transferrable to energy infrastructure with additional training. The state graduates 1.5 to 2 times the number of students relative to the nation in energy-infrastructure-related careers including construction trades, mechanic and repair quality technicians, CNC machinists, computer systems networking, and telecommunications computer sciences, all that require two years of study or less.

Both urban and rural communities throughout the state share a disconnect from thriving industry clusters, first in the steel mills to the north and now the coal economies to the south. Disinvested communities face high unemployment rates of 20% in OZs in the Chicago MSA and racial disparities. Demand for clean tech workers outpaces supply, presenting opportunities to train workers for high-growth, high-paying jobs. Nationally, wages for clean tech careers are 8 to 19% higher than other industries.

Equity and inclusion drive the design of all six CTEC component projects. Illinois has 978 qualifying low-income census tracts and 327 Opportunity Zones (OZs).

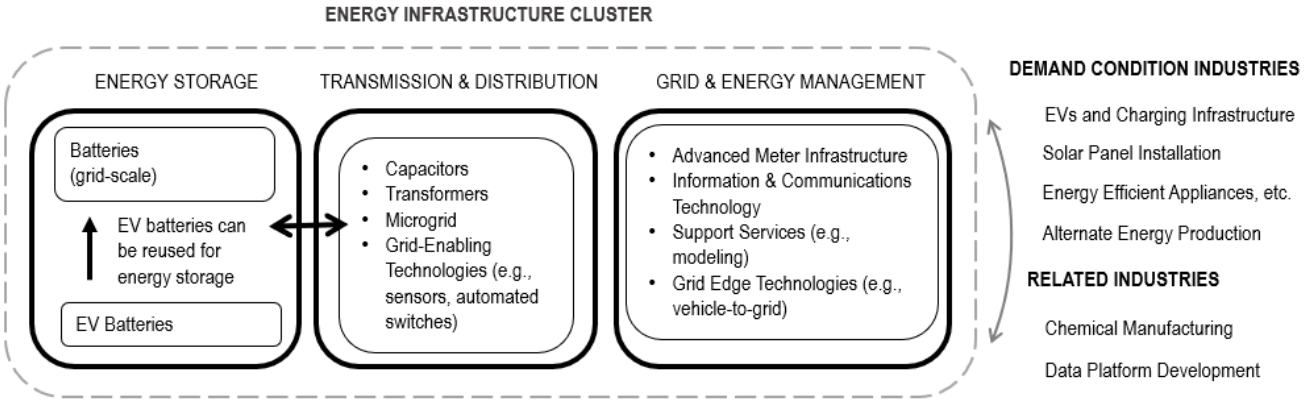
Geography	25 yrs. + w/o High School Diploma	Median Household Income	Poverty Rate
Illinois	10%	$69,000	11%
Illinois OZ Average	19%	$35,000	32%

The energy infrastructure cluster connects the industrial base and related transportation corridors that define the Illinois region with an innovation ecosystem and workforce to catalyze a high-growth, next-generation cluster inextricably linked with equity and climate justice.

OVERVIEW OF PRIVATE-SECTOR ENGAGEMENT

Engaging industry and the philanthropic community are essential to establish Illinois as a leading cluster in energy infrastructure, energy efficiency, and grid modernization. CTEC will deploy a two-pronged approach for a centralized, coordinated engagement effort. One of the inherent strengths of CTEC is the foundation of established partnerships with industry and the philanthropic community. CTEC will build upon this and leverage public sector investment to expand resources and value proposition to deliver immediate impact and facilitate informed capacity building.

Manufacturers polled to participate in CTEC stated that they could expand into energy infrastructure products by retooling their production lines; they understand that if they want to be at the forefront of this high growth industry, they must adapt to remain competitive. They are located across the state, in disinvested communities and environmental justice zones. They reside along the main transportation routes of I-55, I-57, and the Mississippi River that connect Illinois' production centers to each other and to markets around the nation and world. Below are the sub-clusters of the next-generation energy infrastructure cluster we will seek to harness and grow in Illinois.



The emergent cluster is robust. The state has a long history of manufacturing prowess in communication technologies, renewable energies (e.g., wind turbines), and electronics. Tremendous growth can be captured in climate and clean energy within the energy infrastructure cluster and sub-clusters of energy storage, transmission and distribution, and grid and energy management. CTEC will focus industry engagement across all three pillars of its strategy.

At the governance level, there will be an Industry Advisory Committee composed of 20 companies with three being represented on the Governance Committee. For the Innovation and Entrepreneurship pillar, companies will engage in co-creation of innovation and VC activities; they will also serve as educators and/or mentors for startups/SMEs. In the Production capacity pillar, employers will hire from CTEC workforce development programs, and directly participate in retooling assistance to enter new, high-demand markets. Finally, in the Well-Planned and Equitable Deployment pillar, partners have committed to purchase from the local manufacturing supply-chain. CTEC has commitments from 49 industry partners as described in the individual project component narratives and letters of support. These include Ameren, ComEd, Invenergy, NuMat, Schneider Electric, Ford, Carr Machine & Tool, just to name a few.

CTEC will continue to engage the emerging climate and cleantech VC community to support the fostering of capital markets to provide growth equity to the entrepreneurs. It will build upon the documented relationships in the letters of support with accelerators, angel groups, early-stage and growth-stage VC, and private equity firms. CTEC members will continue to build programs in partnership with the philanthropic community to support the diversity, equity and inclusion, economic development, workforce development, and climate and environmental justice goals of this effort.

SUSTAINABILITY OF THE REGIONAL GROWTH CLUSTER

Each component project and CTEC member will sustain and grow operations upon the completion of the five-year grant period. The largest costs across CTEC, representing 37% of the total budget and 9% of funds requested of the EDA, are for capital investments including the incubators and community makerspaces, a community microgrid, classroom equipment, and the installation of EV chargers.

The second largest costs are the initial program design including supply chain and workforce needs assessments, EV demonstrations and feasibility studies, digital platforms, and curriculum development and program design across the incubators, accelerators, universities, and community colleges. All of these tasks include community engagement to establish trust and open communication channels. This grant, along with complementary and matching investments, will provide the startup funds needed. Each project has an anchor institution with significant cash reserves and, along with the proposed CTEC Center, has demonstrated capacity for fundraising beyond the grant period.

Sustaining programs after the five-year period will become a part of the core operating model of each coalition member. Projects 1 and 2 focus on spaces and programs for innovators and entrepreneurs. Ongoing revenue will be generated through membership fees, services, and corporate sponsorships to use facilities and resources. Fees could be charged for courses and workshops for certain audiences if needed.

Ongoing costs for Projects 3 and 4 include technical assistance for manufacturers to retool and the recruitment of students into workforce programs. In each of these cases, the partners will continue recruitment activities through manufacturing associations and training programs to engage manufacturers. In addition, as more manufacturers and workers find growth opportunities in clean energy infrastructure, the cost of outreach and enrollment will decline. For Projects 1, 2, 4, and 6, the partners will develop virtual platforms and courses to serve additional audiences. The creation of these additional modules will be relatively low to produce and leverage existing investments.

Projects 5 and 6 will achieve their goals within the span of the grant. Outside of university coursework that will be sustained through ongoing operations, the partners will install EV chargers in disinvested communities that will justify the business case for private companies to add additional charging capacity over time. In addition, the results of the grid research and EV pilots will be presented to private sector partners to develop business plans driven by private investment.

CTEC will continually scan the landscape for additional partnerships and funding opportunities to scale the projects. The broad reach of CTEC members, affiliate partners, and partners across industry, universities, economic development agencies, research centers, and civic institutions, as well as the

breadth of state legislation supporting the clean energy sector indicates the likelihood of a growing funding base to continue the impact started through this grant.

ENGAGEMENT OF COMMUNITY-BASED ORGANIZATIONS AND LABOR UNIONS

Each CTEC component project has committed to extensive engagement with community residents through an identified network of community partners, particularly in the OZs throughout the state. The project plans incorporate a variety of strategies including townhalls, listening sessions, educational webinars, virtual outreach, and community-informed programming.

All six component projects include partnerships with community-based organizations that will help facilitate outreach activities to their constituents as well as through their networks. Each CTEC project has identified strategies to recruit, train, and hire BIPOC and women entrepreneurs, students, the unemployed, and the underemployed. CTEC strategically includes community organizations as partners in Projects 1, 2, 4, and 6 that represent residents from disinvested communities that suffered disproportionately from the impact of COVID-19. Project 6 will use an innovative civic platform developed by the Center for Neighborhood Technology that will allow 225 residents to crowdsource real-time climate and air pollution data as well as helping to decide the location of the new EV charging stations. The CTEC Industry Advisory Committee will also include community-based organizations who will provide perspectives alongside industry partners and anchor institutions.

CTEC is also committed to incorporating strong labor participation and protections during the execution of the component projects. The Chicago Federation of Labor will collaborate with CTEC and hold the initial seat allocated for labor on the Industry Advisory Committee. In addition, Project 4, focused on workforce training programs will ensure alignment with its partner, IBEW 9, an electrical workers union.

Each project containing construction or equipment installation will adhere to prevailing wage and hiring standards. In Project 1, mHUB will accept tax-increment financing (TIF) funds from the City of Chicago and will develop a community benefit agreement (CBA) in accordance with City requirements. This agreement will include wages at or above the prevailing rate and hiring commitments at or above CTEC benchmarks. In Project 2, UChicago has a goal of 35% of the contracts awarded to minority business enterprises (MBEs) with 40% of the workers from the city of Chicago. In Project 5, SIUC must follow State of Illinois requirements including minimum labor wages and diversity in procurement practices. Northwestern University will commit to 25% of construction and 50% of education in Project 5 and 50% of construction costs in Project 6 on MBE and woman-owned businesses. In Project 6, Cook County requires payment of prevailing wages and targets 35% of spend to MBEs and woman-owned businesses.

ENGAGING EQUITABLY ACROSS ALL COMPONENT PROJECTS

CTEC has centered equity within every element of its project design since its formation. These include Process, Outcomes, and Governance Equity.

Process Equity: mHUB led a broad-based, open-call request for proposals (RFPs) to more than 500 organizations to participate in shaping the clean energy vision in Illinois. A committee of CTEC members directly engaged over 100 organizations, received 42 applications from 38 entities representing a wide cross-section of community- and locally-driven activity across the state. These proposals were evaluated and scored by 27 independent organizations. This crowdsourcing formed the basis for the overall concept and thematic areas of the project teams. A requirement was to pair the project lead with community-based institutions to shape programs to community priorities and engage residents.

Every project team has a community-based partner, a network of local partnered organizations, and a planned approach for bi-directional engagement with residents. Residents in each community where CTEC will support new facilities, equipment, or programming will be able to engage through townhalls, community surveys, and tiered on-boarding to programs. Workforce efforts in Project 4 will develop jobs and career pathways attainable at all education levels; the educational partners will work with local service

organizations for wrap-around services for participating students as well as provide virtual programming to ensure participants can equitably access services. EV charger placement in Project 6 will be determined through an innovative civic engagement platform that sources air quality and traffic information from residents alongside data modeling. The community voice is embedded and valued equally in the CTEC decision-making process alongside data analysis.

Outcomes Equity: All six component projects focus on serving residents from OZs and EDDs across the state. The demographics in each of these areas differs; what unites them is a shared need for local community engagement to draw them into a broader ecosystem that connects them to resources, creates wealth for those communities, and grows local economies.

Each project team has made a commitment to an inclusiveness target both ambitious and appropriate for its location. Project 1 has an outcome to reach 50% BIPOC and women for its entrepreneurship and workforce training programs while GECC will recruit 90 to 100% BIPOC from the communities it serves. In Project 2, UChicago and Argonne will target serving 40% BIPOC and women entrepreneurs for high-growth, high-investment business, whereas historically only 2.6% of VC dollars flow to Black innovators. Projects 3 and 4 will seek to harness the inherent interconnectedness across Illinois to enable new supply chains, flows of goods and services, and employment pathways, serving 60 to 90% of disinvested communities, BIPOC, and women depending on the program site. Project 5 will focus on creating new opportunities for coal-impacted southern Illinois where there are high poverty rates and low median household incomes, as well as limited prospects for young people beginning their careers.

Governance Equity: CTEC will embed equity in the fibers of the cleantech economy through efforts that supersede any one component project. Its Governance Committee structure has two seats designated for community organizations including affiliate groups outside of the coalition. Seats for industry partners and coalition members also have allocations for geographic representation from outside the Chicagoland MSA and for SMEs, ensuring all of these voices are at the table together shaping priorities.

Simply being at the table does not mean that space will be given to all voices. CTEC will engage the coalition and stakeholder groups in selecting or co-creating an equity framework to inform and assess project work, and to adopt a coalition-level shared language around equity and inclusion. Process and outcome equity goals are embedded in the vision statement for the coalition, serving as a north star for considering new opportunities for CTEC over time.

EXPECTED MEASURABLE OUTCOMES

The evaluation of CTEC will be based on measured metrics and outputs over the five-year grant period and five years post-award. Progress will be measured against the goals, objectives, and outcomes of each component activity. The evaluation plan aligns metrics across component projects, and achieves outcomes related to each barrier to organic growth for the energy infrastructure cluster. The outcomes and outputs selected support a continuous improvement management approach; project partners will collect and process appropriate data with the support of CTEC Center on a regular basis to provide critical feedback to make specific program modifications and enhancements.

Metrics: Outputs and Outcomes	Grant period (Oct 2022 - Sept 2027)	5 years post-grant period (Sept 2032)
$ Revenue generated through new cleantech products/services	3,997,655,000	7,654,515,000
$ Investment attracted to support cleantech products/services	2,579,120,304	3,718,297,893
# businesses/products launched	1,381	1,342
# of individuals trained for cleantech jobs	4,208	5,579
# of individuals placed in high-quality cleantech jobs	2,466	3,608
# SMEs engaged to create/supply energy infrastructure	1,544	1,647

Metrics: Outputs and Outcomes	Grant period (Oct 2022 - Sept 2027)	5 years post-grant period (Sept 2032)
$ new income generated	3,718,297,893	783,438,754
# Direct jobs created	8,201	14,461
# Indirect jobs created	40,667	66,993
$ Investment attracted to underserved BIPOC/women	783,438,753	1,315,789,863
# businesses/products launched by underserved BIPOC/women	986	974
# underserved BIPOC and women trained for cleantech jobs	3,038	4,053
# of individuals placed in high-quality cleantech jobs who are underserved BIPOC/women	1,698	2,518
# Community members directly engaged	222,957	228,468
# Direct jobs created for underserved BIPOC/women	4,817	8,494
# Indirect jobs created for underserved BIPOC/women	23,887	39,351
# new EV charging stations	283	345
# metric tons carbon reduced	2,310,000	3,000,000

Following are the projected key performance indicators:

	Metrics
Outputs	# of individuals trained for cleantech jobs # SMEs and entrepreneurs engaged to create/supply energy infrastructure # business/product opportunities identified # of community members engaged # of mentorship/training sessions # of organizations engaged (community-based, affiliate, industry) # EV charging stations installed in disinvested communities # of investors engaged
Outcomes	Total amount of revenue generated through new cleantech products/services Total amount of investment attracted to support cleantech products/services Total # businesses/products launched Total # of individuals placed in cleantech jobs Total # of new cleantech related patent registrations in Illinois Total # of metric tons of greenhouse gases (GHGs) reduced/removed from atmosphere Total # EV charging stations in disinvested communities
Equity Lens: <u>All</u> outputs and outcomes data will be collected with appropriate demographic information to ensure a consistent and continual focus on accessibility and equity goals, including income level, educational attainment, race/ethnicity, and gender identity, zip code, and more.	

Input-output analysis indicates that startups have an average of 1.8 entrepreneurs, hire 2.35 employees, create 2.89 supplier jobs, and 4.55 indirect jobs. Each durable manufacturing job supports 2.89 additional supplier jobs and 4.55 induced jobs as determined by the Economic Policy Institutes in 2019.

Project partners will compile data from their respective engagement, research, business assistance, and workforce efforts to share the CTEC Center. Each project team has identified traditional data sources as well as community-generated data to be collected alongside. Qualitative evaluation and continuous improvement tools include surveys, townhalls, focus groups, and interviews. Quantitative information includes direct program outputs and appropriate demographic information.

Impact assessment for each project will be supplemented by follow-up surveys to program participants at intervals appropriate for each component project. All data will be integrated and evaluated on a quarterly basis and reviewed by project partners, shared with the CTEC Governance Committee, and working groups semi-annually and reported annually.

WORK CONDUCTED IN PHASE 1

During Phase 1, from December 2021 to the present day, CTEC created a strategic plan to guide coalition and energy infrastructure cluster development. Over this period, the partners refined the original scope-of-work in each project component. It also completed the following activities:

Clarified priority cluster and sub-clusters for growth: R.W. Ventures and Mass Economics, leading economic development, and data firms, conducted a cluster analysis that validated the cluster focus and further highlighted areas within cleantech where Illinois has emerging strengths and market momentum to achieve national leadership. Honing in on specific energy infrastructure allowed CTEC to select the technologies to target at the two incubators, identify manufacturers that will retool their production lines to create clean energy products, and build the focus for the workforce programs.

Created coalition-building structures: CTEC assembled an advisory committee from key institutions across sectors to provide help formulate the vision for this effort. Meanwhile, CTEC members conducted several coalition convenings to build a shared identity, workshopped the strategic framework, established long-term governance, broaden the coalition partners, activated the public sector, and strengthened statewide linkages across the component projects based on needs and connections identified.

Updated strategic framework (intended impact and theory of change): CTEC clarified the role of each of component project to create an equitable innovation lifecycle around energy infrastructure for Illinois. It aligned the projects around three strategic pillars (innovation & entrepreneurship, production capacity, and deliberate deployment) to further strengthen their interconnectivity. Together, CTEC will allow Illinois to harness its assets and become the leader of energy infrastructure.

Refined the scope of each component project: Each project team went through a series of facilitated discussions to understand their role in CTEC and how they would work together. Projects 1 and 2 engaged S.B. Friedman to conduct feasibility studies for the incubators to understand the potential to serve cleantech entrepreneurs in differentiated but complementary ways. All of the component project narratives and budgets aligned their activities to the strategic framework of CTEC.

Expanded the reach and partnership of CTEC across Illinois: CTEC has already spent considerable time conducting outreach with several hundred nonprofits, community-based organizations, colleges and universities, national research labs, local and regional governments, labor unions, BIPOC and women's associations, and industry leaders to develop the clean energy ecosystem across the state. This includes soliciting entities not already engaged in CTEC to participate at some level. CTEC launched an Affiliate Program for organizations not seeking funding from this proposal to provide pro bono services, sit on advisory committees and work groups, and benefit from the learnings from this effort. A townhall for prospective affiliates attracted over 90 attendees; Senator Tammy Duckworth and a representative of Senator Dick Durbin gave remarks. The awareness of CTEC has grown exponentially since the announcement of the Phase 1 award. The CTEC *chief regional competitiveness officer* at mHUB continually receives inquiries from groups all over the state asking how they can get involved.

Secured State of Illinois and Cook County funds: CTEC secured bipartisan support with the State of Illinois General Assembly for a commitment of $29.5 million via a capital appropriation to fund construction related investments in Projects 1 and 2. These funds are over and above the 20% required match from project applicants. Representatives from both sides of the aisle and every quadrant of the state sponsored the bill in a strong display of bipartisan, statewide support. Cook County has also provided $3.4 million to CTEC, over and above its 20% project commitment.

DETAILED CHANGES FROM PHASE 1 CONCEPT PROPOSAL

As described in the above section, CTEC has grown exponentially in a few short months. Interest in the six projects led to refinements to the overall programmatic design, construction plan, component projects, and funding sources.

Overall Scope and Programmatic Changes

- Refined strategy around the energy infrastructure cluster and related sub-clusters to focus on energy storage, distribution, and management as identified through extensive stakeholder engagement and rigorous economic analysis to build an equity-centered energy infrastructure cluster.
- Realigned Argonne as a cross-cutting technical partner across all three strategic pillars to provide technical expertise and enable alignment in each pillar. Argonne has expanded its scope to directly engage in four CTEC projects, rather than solely Project 5.
- The creation of the CTEC Center has been added as a separate project application to manage and support the coalition's current and future scope toward its vision for the cluster.
- Established a networked governance model to provide ongoing strategic planning, program management and evaluation, conflict resolution, and expand coalition participation.

Construction Plan Changes

- Project 1: GECC added a community makerspace to serve the Englewood OZ in the South Side of Chicago. A scan of the entrepreneurial pathway from GECC to mHUB and similar programs revealed a gap in access to equipment and support for the Englewood community.
- Project 2: UChicago has moved its planned lab and incubator to a Hyde Park campus building where it is a master lease holder. This allows Emerald South Development Collaborative to open a second, community facility in the Washington Park OZ that was identified for the lab in the Phase 1 proposal.

Component Projects Programmatic Changes

- Project 1: Elevate Energy will no longer subaward to Greenwood Archer Capital (GAC) for a revolving loan fund. GAC has secured an outside partner for the funds and will continue to be a non-funded, programmatic partner for business support services for the project.
- Project 3: Manufacturer support will focus on supplier retooling to capture revenue and job creation potential of new markets in energy infrastructure products with support for GHG emissions reduction as a value-added service through project partners.
- Project 4: Bright Star Community Outreach has expanded its role to not only engage its local Bronzeville community on workforce pathways in energy infrastructure, but also to share best practices for engaging local communities in recruitment across all component projects. The change was made to amplify and transfer community-based strategies as well as to have both institutional and community-based leaders shaping statewide priorities.
- Project 6: Center for Neighborhood Technology has moved to this project team to directly support the site election of EV charging stations using its civic engagement platform.

Funding Sources

- Total funds sought from the EDA are $75.85 million, a reduction of $23.49 million from the Phase 1 proposal. The total cost of proposed project investments is $189.61 million, a reduction of $11.35 million. CTEC has increased its proportion of matching funds in a show of commitment from stakeholders and sharpened construction and program funds to focus on the highest-impact work, increasing the return-on-investment for the EDA.
- CTEC has secured a capital appropriation of $29.5 million from the State of Illinois, $13.1 million from Cook County in cost share and complementary investments, and up to $15.0 million match investment from the City of Chicago for the mHUB facility, in addition to $30.9 million in matched funds from CTEC.