

AMERICAN
MADE
U.S. DEPARTMENT OF ENERGY

Community Energy Innovation Prize



Metals Innovation Initiative (MI2)

IMPACT REPORT - Submission Template

0. Short Description

List of Team Members & Partners:

MI2 Team for CEI Prize:

- Summer Goldman (COO, MI2) / (Founder, Dixon Strategies LLC)
- Vijay Kamineni (CEO, MI2) / Chief Innovation & Technology Officer, Logan Aluminum)
- Sam Ford (Director of Strategic Communications, MI2) / (Executive Director, AccelerateKY)
- Ruthie Caldwell (Grants & Funding Consultant, MI2) / (Owner, Vision Granted LLC)

Local Community Partners

Floyd County

- Big Sandy Area Development District (Area Development District)
- Mountain Association (CDFI)
- Prestonsburg Economic Development Foundation
- City of Prestonsburg (City Government)
- Floyd County Fiscal Court (County Government)
- Floyd County Schools (K-12 schools)
- TEK Center (trade school)

Muhlenberg County

- Muhlenberg County Judge Executive (County Government)
- Muhlenberg Economic Growth Alliance
- Greater Muhlenberg Chamber of Commerce
- Muhlenberg County Board of Education (K-12 schools)
- Felix E. Martin Foundation

Ohio County

- City of Beaver Dam (City Government)
- Ohio County Fiscal Court (County Government)
- Ohio County Board of Education (K-12 Schools)
- Chamber of Commerce
- Ohio Community Economic Development Alliance

Pike County

- One East Kentucky
- Pike County Fiscal Court (County Government)
- City of Pikeville (City Government)
- University of Pikeville
- Faith Life & New Beginnings Church
- BitSource (software company)

Project Partners:

- All4 (Clean Energy Consulting Company)
- Insitu Energy (Startup Clean Energy Project Siting Software Company)

MI2 Metals Members:

- Kobe Aluminum Automotive Products, LLC
- Logan Aluminum
- North American Stainless
- Novelis
- Nucor
- River Metals Recycling
- Tri-Arrows Aluminum, Inc.

- Wieland
- Toyota Tsusho America, Inc.
- Crown
- Ball
- Bilstein Cold Rolled Steel
- Trace Die Cast
- Century Aluminum

MI2 Value Provider Members:

- Hitachi Vantara
- Blastics
- ElectraMet
- Kentucky Thermal Institute
- Magnar Metals
- Recyera
- Southern Coil Solutions
- Transmission

MI2 Strategic Partners:

- AccelerateKY
- Bowling Green Area Chamber of Commerce
- Commerce Lexington
- Kentucky Association of Manufacturers
- Kentucky Chamber Foundation
- Kentucky Community & Technical College System
- Kentucky Cabinet for Economic Development
- Kentucky Workforce Innovation Board
- Manufacturing Extension Partnership
- University of Kentucky
- Western Kentucky University
- Eastern Kentucky University
- University of Louisville
- CREATE

Brief Summary:

MI2 is an industry-led non-profit actively working with metals and advanced manufacturers and key stakeholders across Kentucky. This project is helping these manufacturers achieve the goals they identified during MI2's annual planning meetings last year, including: (1) to reduce energy consumption and help manufacturers convert to clean energy, (2) investigate ways to develop a circular economy of recycled metal feedstock in Kentucky, and (3) create quality jobs in disadvantaged former coal communities that fill critical demand jobs for manufacturers.

As part of MI2's workforce focus, this prize has been used to plan an innovative strategy called KY-WORCS (i.e., Workforce Optimization and Redistribution Comprehensive Strategy) in four disadvantaged coal communities in the Kentucky counties of: Muhlenberg, Ohio, Floyd, and Pike. Additional information about KY-WORCS can be found in the information for public dissemination which explains the program in detail and provides an outline with templates so other rural communities can plan and implement their own WORCS program.

Overall, this prize has helped MI2 achieve many of the goals and milestones originally proposed in Phase 1 and has led to exciting ripple effects in Kentucky's manufacturing industry we could not have imagined.

I. Impact Report Criterion #1: Community Engagement & Partnerships

1. Results: Engagement Efforts

Our MI2 team is thrilled with the progress we've made through this prize—it's given us a way to connect deeply with four distinct Kentucky coalfield communities. Partnering with AccelerateKY, who has years of trust in these communities, we identified local leaders to help foster open, genuine conversations. We gathered in familiar, creative spaces: a health department that had just hosted a festive community baby shower, the meeting room of a quirky software company, a co-working space created for growing businesses and remote workers out of what had been a former residential house. These welcoming places encouraged community members to share their challenges and hopes.

Together, we guided each group through the KY-WORCS Outline Planning Tool, empowering them to envision KY-WORCS in their counties. This hands-on work built camaraderie and brought partners together, leading to a collaborative \$12 million Digital Equity grant proposal for three years of sustainable growth in metals manufacturing. If you've ever written a multi-million-dollar grant with dozens of partners, you know the struggle is real! We had some very late nights, but we also made serious friends.

Now, MI2 has connections to local leaders, churches, schools, workforce agencies, and more, creating a powerful network ready to grow. This prize has been transformative, laying the foundation for MI2 to engage these four communities in planning lasting, regional growth in Kentucky's metals manufacturing sector.

2. Identify Community Manufacturing Ecosystem Needs

This prize has highlighted some of Kentucky's biggest manufacturing needs: clean energy, workforce solutions, and—surprisingly—childcare! Through this work, we've gained a deep understanding of four coalfield communities' unique challenges and assets, and now we're connecting them with metals manufacturers in ways that truly meet everyone's needs.

For metals companies, abundant clean energy is a must, especially to meet low-carbon standards in international markets. But Kentucky's grid connection delays of up to seven years have companies urgently needing behind-the-meter solutions. Thanks to this prize, for instance, MI2, Floyd County, and Insitu Energy have identified land for clean energy projects that could make these communities ideal manufacturing partners.

A skilled workforce is the next big need, and luckily, these communities are ready! With many hard-working former coal miners eager for new jobs, metals companies have talent in waiting. While developing the Digital Equity grant application, MI2 found that all four communities were also "childcare deserts," which manufacturers reported as a major workforce challenge. So, we wrote childcare solutions right into our \$12 million grant application, planning for satellite offices with on-site daycares and partnerships with the Bowling Green Montessori School. This final prize would help MI2 renovate these satellite offices, connecting communities with companies eager to hire locally. With this next Prize, we're excited to bring these opportunities to rural Kentucky!

3. Lessons Learned from Local Engagement

One of our biggest takeaways? Stay flexible and let the community lead. While MI2's KY-WORCS Outline offered a solid framework for planning, we quickly learned that we needed to let the conversation flow naturally. Some of our most impactful moments came when we allowed discussions to go “off-outline” and follow the ideas that mattered most to community members.

For example, in Pikeville, the group realized that local businesses, like a fan manufacturer and a truck bed manufacturer, should be part of the conversation. But they also didn't want these businesses to feel like we were there to compete for their employees. Instead, the community team decided to go out and ask local businesses about their most pressing workforce needs. Then, they are planning to work with nearby colleges and trade schools to create training programs, building a skilled talent pool to support these companies and attract similar manufacturers.

This experience taught us the value of an asset-based approach that lets communities grow their team in ways that work for them, with MI2 stepping in to support where needed. It's about creating abundance, not scarcity, and this prize has shown us how powerful that mindset shift can be.

4. Meeting Local Needs

These communities have faced heavy job losses, with Muhlenberg and Ohio Counties in the western coalfields hit especially hard—Muhlenberg's last coal mine closed this year, laying off 200 of the area's best-paid workers. In Appalachian Floyd and Pike Counties, conditions are just as tough, with both ranking among America's most distressed counties by the Appalachian Regional Commission. But despite these challenges, each community holds powerful assets: a high quality of life, dedicated, hardworking people, and cultural richness like music, food, and exhilarating outdoor activities. Broadband access is improving, too, opening doors to new economic opportunities.

Our KY-WORCS program was designed to match these community strengths with the needs of manufacturing companies. By helping communities identify their assets—like workforce dedication and increasing connectivity—we're connecting manufacturers with a ready workforce who can perform high demand skilled jobs that may otherwise remain vacant.

Plus, both the communities and manufacturers have identified childcare as a major challenge. This prize has already helped spark innovative childcare solutions and new relationships with childcare organizations—connections that might never have happened otherwise. It led to a grant application that, if funded, could create quality jobs with onsite childcare, solving challenges for families and manufacturers alike. This replicable model can inspire other rural communities to tackle workforce needs, while promoting economic growth through asset-based planning.

5. Stakeholder Engagement Summary

MI2 has a unique connection to Kentucky's manufacturers—founded by industry leaders to foster open collaboration across the sector. Unlike government-run workforce programs, MI2 is an independent nonprofit that helps manufacturers tackle shared challenges in a pre-competitive, de-risked space, ensuring all programs truly meet industry needs.

This prize has allowed MI2 to deepen engagement with communities, helping them match their local assets with manufacturing needs. It's been amazing to see manufacturers, community members, and stakeholders unite to plan KY-WORCS locally and develop a Digital Equity grant proposal together.

A major highlight was the Kentucky Industry Conference on Oct. 29-30 in Louisville, where manufacturers, educational institutions, and community representatives gathered to discuss KY-WORCS. AccelerateKY shared the program’s vision, and each of the four communities pitched their assets and opportunities, inviting companies to set up satellite offices. One C-suite executive originally from eastern Kentucky shared how he’d always wanted to bring good jobs to his region and saw KY-WORCS as the answer.

Winning this final prize would allow MI2 to fund these satellite offices, enabling companies to begin hiring within six months. This prize has brought all key players to the table, and now we’re ready to get to work!

6. Trust Building: Success & Failures Summary

This prize journey has been fast, furious, and incredibly rewarding. In less than a year, we’ve built lasting partnerships, learned from local voices, and established a foundation of trust in these communities. But it hasn’t all been smooth sailing—this experience has taught us some invaluable lessons about the realities of partnership and community building.

One of our biggest lessons came during the Digital Equity grant process. After months of preparation, we hit a major roadblock: we realized we needed letters from local workforce agencies, not just state-level support. Suddenly, we were scrambling to connect with each of the four local workforce agencies to get these letters in less than a week, and they all happened to be at an out-of-state conference!

Through some late nights and last-minute meetings, we not only met the deadline but also learned so much more about each community’s workforce challenges. Initially, these local leaders were wary of MI2, worried we might be just another outside group. By the end, we had built real trust and an understanding of how we can work together to support the workforce. This “happy snafu” ultimately made the grant stronger and laid groundwork for future collaboration.

On the next page, see a graphic with quotes and photos of speakers from these communities who participated in the Kentucky Industry Conference KY-WORCS Panel.

KY-WORCS Panel

Kentucky Industry Conference

October 30, 2024



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Our community has survived through years of employment ups and downs associated with the coal industry. City leadership has worked tirelessly over the past decade to make Beaver Dam vibrant where people want to live, work and play. Now, we're doing everything in our power to bring in jobs so our citizens can stay in our community to work.

– Mayor Paul Sandefur
Ohio County



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KY-WORCS is helping Floyd County move forward by creating jobs. Moving forward is not about forgetting the past but embracing the lessons it taught, stepping boldly into the unknown with hope, resilience, and purpose.

– Steve Bailey
Floyd County



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The last coal mine in Muhlenberg County closed this year, laying off 200 people. MI2 is helping us build relationships with manufacturers to bring quality jobs to our people.

– Alyssa Manning
Muhlenberg County



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By partnering with KY-WORCS and MI2, Pikeville will provide manufacturers with access to a skilled, dedicated workforce that they are more likely to retain by allowing employees to stay home and build long-term careers, ultimately strengthening both our economy and community.

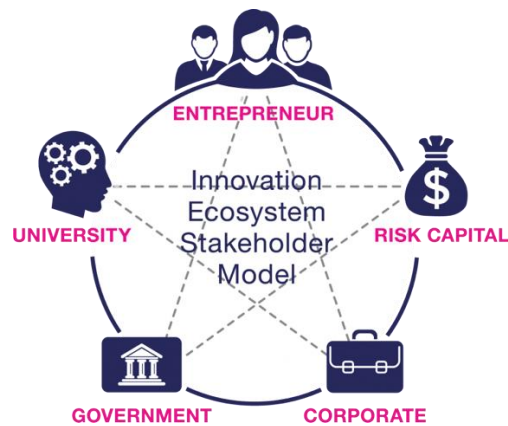
– Brad Slone
Pike County



II. Impact Report Criterion #2: Fostering a Clean Energy Manufacturing Ecosystem

1. Stakeholders

Thanks to this prize, MI2 has connected all the right people in a way that feels both powerful and inspiring. Our work draws on MIT's Regional Entrepreneurship Acceleration Program (REAP) Innovation Ecosystem Stakeholder Model (see diagram below), which brings key stakeholders together with MI2 serving as a neutral liaison, ensuring every group is heard and valued. This builds on Kentucky's distinction as the first mainland U.S. region to complete the MIT REAP program (2018–2020), a process that inspired the creation of AccelerateKY and, ultimately, MI2. In fact, for their Regional Innovation Engines program, the NSF and MIT REAP team has highlighted MI2 itself as a national example of how this model can come to life.



In alignment with the MIT REAP model, we've teamed up with:

- (1) *Government* partners, like Kentucky's Cabinet for Economic Development and local Mayors and county Judge Executives.
- (2) *Corporate* partners, from major metals companies and local businesses.
- (3) *University & Education* partners include community colleges, K-12 schools, and trade programs, all eager to fuel a skilled workforce.
- (4) *Entrepreneurs* who pitched workforce ideas at the Kentucky Industry Conference.
- (5) *Risk Capital* groups, including regional banks, funders, and state funding through KY Innovation, are all-in on supporting local businesses.

This prize also allowed us to identify missing partners and invite them to the table. Now, we're also working with:

- (6) *Energy Experts*, like All4, who is developing a Clean Energy Plan for manufacturers, Gateway for Accelerated Innovation in Nuclear (GAIN) offering advanced nuclear insights, and Insitu Energy, who's been in Floyd County testing a new software analyzing land parcels to help with siting clean energy projects that could attract manufacturers.
- (7) *Local Community Partners*—from chambers of commerce to nonprofits supporting vulnerable populations like veterans and people in addiction recovery programs.

Together, these stakeholders form a strong network, with MI2 as the bridge, to foster sustainable manufacturing growth in these four communities.

2. Resources

MI2's greatest resources are our people and the strong relationships we've built in Kentucky's manufacturing world. We're blessed with an active Board made up of industry leaders who support our work financially and with connections that keep us plugged into the heart of Kentucky's manufacturing sector. Thanks to this board and supplemental state government funding, we have a solid operational base—covering our CEO, COO, CFO, and Project Leads across tech innovation, workforce, and clean energy Strategy Groups.

This operational support lets us focus on growing special projects like KY-WORCS, which help advance the domestic manufacturing innovation ecosystem in these four disadvantaged coal communities. With a contracted grant writer constantly seeking funding opportunities, MI2 can actively seek resources to expand. Our partnerships with organizations like the Kentucky Association of Manufacturers, University of Louisville, University of Kentucky, and Western Kentucky University have led to exciting collaborations on NSF Engines and EDA Tech Hub grant applications, positioning us for long-term impact.

These partnerships are invaluable; they guide our work to better serve Kentucky's manufacturing innovation ecosystem. And, if we win these final prize funds, we'll be able to launch KY-WORCS pilot offices, ensuring sustainable growth and creating quality jobs across our communities.

3. Activities

MI2's activities are all about building a vibrant manufacturing innovation ecosystem in Kentucky, with industry-leading companies guiding the way. Our innovative structure is membership-based, with Platinum members playing a key role by serving on the Metals Leadership Council (MLC). Every fall we hold our annual meeting, where MLC members review the budget, set goals, and approve initiatives for the coming year. This collaborative process ensures MI2's work directly aligns with the priorities of metals and advanced manufacturing companies in Kentucky.

We've built a few strategic focus areas to meet manufacturers' goals: (1) Energy & Sustainability, (2) Tech Innovation, and (3) Talent & Workforce. The KY-WORCS project embodies all three! Thanks to this prize, MI2 was able to put out an RFP, hire All4, and begin planning to increase Kentucky metals companies' use of clean energy by 10% over five years.

During this prize, MI2 partnered with the Kentucky Association of Manufacturers and the GAME Change consortium working on an NSF Regional Innovation Engines development grant to co-host the Kentucky Industry Conference, which attendees called a "one-of-a-kind event." We even held a pitch competition for innovators developing products to tackle metals industry challenges. These activities are putting Kentucky on the map as a premier destination for metals innovation, showing how MI2 is leading the way toward a strong domestic manufacturing ecosystem.

4. Connections Made

This prize has sparked powerful connections among stakeholders, resources, and activities, strengthening Kentucky's manufacturing innovation ecosystem. It encouraged MI2 to forge strong ties with four communities, aligning workforce needs with manufacturing demands to create quality jobs for rural residents. With essential startup funds, we kicked off projects like All4's Clean Energy Plan, aiming to increase Kentucky metals companies' use of clean energy by 10% over five years.

These new community connections also inspired MI2 to tap into additional resources. Leveraging Floyd County’s work with the Department of Energy’s Capacity Building for Repurposing Existing Energy Assets program, we’re investigating ways to use Insitu Energy’s cutting-edge software to identify prime land parcels for clean energy projects across all four communities—a major asset for manufacturers seeking new facility sites. This innovative software could be transformative, with MI2 on the ground floor testing and applying it to help disadvantaged communities throughout the state, and which could be shared nationwide.

Thanks to this prize, we’ve connected the dots between people, resources, and projects, setting the stage for a thriving manufacturing ecosystem and sustainable growth in Kentucky’s disadvantaged communities.

5. Barriers & Challenges

Our first big challenge came in August when we unexpectedly lost a key Board member, a C-Suite executive from a major copper recycling company, who had been instrumental in guiding our Statewide Recycling Plan project. Without his expertise, the Board decided to pause the project. We plan to resume in May 2025 after hosting roundtables and gaining input from the Governor, key stakeholders, and metals companies interested in recycling.

For KY-WORCS, our primary hurdle is securing startup funds to fully activate the program in each community. MI2 has strong stakeholder relationships, planned activities, and the resources for general operations, but to truly launch KY-WORCS, we need a dedicated consultant or staff member to “own” the project over the next year and keep it progressing across all four communities. We applied for an Energy Communities AmeriCorps VISTA, but were not accepted, so we need Prize funds to onboard a new person.

We also need funds for leasing and preparing satellite offices as hubs. With these resources, we could have three people hired per office by this summer, creating 12+ quality jobs and building momentum. One company from our KY-WORCS panel is already interested, but to attract others, we need proof the program works. Future prize funds will serve as the seed to make KY-WORCS sustainable, attracting private investment and ensuring the satellite offices can operate independently as the offices gain revenue from companies leasing the space.

Another challenge is rural energy access, which limits traditional manufacturing. For KY-WORCS, we’re exploring jobs that can traditionally be performed remotely (like IT, HR, and CAD design) and, with Insitu Energy’s software, investigating if it would be possible to recruit manufacturers to start satellite production sites in coal communities with on-site clean energy. To guide manufacturers in evaluating these sites, MI2 needs funding for that Project Lead dedicated to moving KY-WORCS forward.

6. Tangible Next Steps

Here are MI2’s next steps to advance a community-based clean energy transition. If this Final Prize is funded, MI2 will:

- **January 2025:**
 - *Hire KY-WORCS Consultant* – Bring on a consultant to guide the KY-WORCS program, helping each community set up its satellite office and partner with local employers for pilot implementation.
 - *MI2 Clean Energy Project Kickoff* – Launch the first project from ALL4’s 5-year plan to boost clean energy in Kentucky’s metals manufacturing by 10%.
- **February 2025:**

- *Talent Pipeline Management Cohort 2 Kickoff* – Partnering with the Kentucky Chamber, MI2 kicks off a second cohort of the Metals Talent Pipeline, building on the success of Cohort 1 and connecting metals companies to KY-WORCS communities to hire for positions in satellite offices.
- *Kentucky Metals Industry Energy Working Session* – Host a strategic session with partner companies, state government, and others to map energy infrastructure projects and coordinate plans for 2030.
- **March 2025:**
 - *KY-WORCS Pilot Launch* – Publicly announce the pilot phase for satellite offices in Floyd, Muhlenberg, Ohio, and Pike Counties.
- **April 2025:**
 - *Executive Roundtable with Gov. Andy Beshear* – MI2 partner executives and government leaders set collaborative goals for Kentucky’s next budgeting cycle, focusing on clean energy, workforce, innovation, and infrastructure.
- **May 2025:**
 - *KY-WORCS Satellite Offices Open* – Establish satellite offices with at least three hires in each community.
 - *Recycling Project Kickoff* – Launch the first project to increase Kentucky’s recycling feedstock by 10%, based on a new feasibility plan.
- **Fall 2025:**
 - *Expand KY-WORCS* – The Project Lead will recruit additional companies to establish offices on the satellite properties, hiring more employees in the four communities.

III. Impact Criterion #3: Program Implementation & Results

1. Use of Prize Awards

MI2’s CEI project has fully embraced the goals of the CEI Prize by advancing clean energy, circular economy development, and workforce growth in disadvantaged communities. Funding from the CONCEPT and PROGRESS phases has been essential in setting up these initiatives. We used the awards to hire consultants who developed the foundation for a Clean Energy Conversion Plan and a Statewide Metals Recycling Initiative, both key steps in our project mission. See a graphic of a one-page summary of the draft clean energy report on the next page.

Through this prize, we also partnered with AccelerateKY, who worked closely with our four focus communities to build local KY-WORCS plans and develop a comprehensive approach for the \$12-million Digital Equity Grant application. And we organized a special panel at the Kentucky Industry Conference, paying for their admission, and giving these communities a platform to present the KY-WORCS program and pitch why companies should open satellite offices in their towns. Additionally, prize funds enabled us to hire All4, who is now close to completing the foundation for the Clean Energy Conversion Plan.

These funds have laid a solid foundation for our initiatives, pushing Kentucky’s metals manufacturing sector toward sustainability while supporting workforce development and economic resilience in our communities.

Draft Summary: MI2 Clean Energy Report

The membership of the Metals Innovation Initiative (MI2) recognizes the historic significance of the availability of fossil fuels to the establishment of a thriving metals industry in Kentucky. Coal serves a critical input to the manufacture of steel and as a source of abundant and cheap energy across the energy intensive metals industry. The membership also recognizes global trends changing the economic viability of fossil fuel derived energy while the demand for energy across the grid is increasing significantly. The Kentucky metals industry needs reliable, safe, affordable, and sustainable energy at a price point consistent with global competitiveness to thrive and grow over the next decades. Therefore, MI2 has commissioned this report to lay the foundation for a five-year clean energy plan for metals manufacturers in Kentucky.

Key findings to date:

- Industrial policy in the Commonwealth of Kentucky does not favor development of clean energy. Reform is needed to encourage investment, drive economies of scale and reduce delays regarding permitting and grid connection.
- Energy demand will increase significantly across the country year on year through 2030 and most likely beyond. Traditional energy consumers will compete with relatively new market actors for available energy, mostly data centers but also electrification and other emerging technologies.
- While there are many clean energy projects in the queue in Kentucky, the waiting time for grid interconnection is problematic and will delay availability, discourage investment and increase costs. Investment in grid modernization is therefore critical.
- There are several key trends that will potentially have a positive impact going forward regarding availability of clean energy to Kentucky metals manufacturers. Specifically, redevelopment of brownfield sites including retiring or retired coal plants or coal mines to install technologies such as nuclear and solar. This trend addresses not only the availability of clean energy from the grid but also provides opportunity to retrain displaced workers and help coal communities with a successful economic transition. Not all coal related sites are suitable [to](#) clean energy projects due to a variety of factors including complex ownership structures, access to high voltage lines and risk exposure related to contamination. However, there are several successful and promising projects validating the potential.
- Rapidly improving conditions in the alternative energy sector including improving costs for solar panels and much improved domestic supply chain as well as improved technologies and cost profiles for energy storage will provide cost effective paths forward in the near term. Vast improvements in nuclear technology and the regulatory environment for nuclear implementation will provide opportunities in the mid- to long-term (2030-2050).
- Near term (2025-2030), on-site self-generation and storage is the most accessible option for increasing the supply of clean energy to individual manufacturers in Kentucky where electrification is feasible and other conditions are favorable. Not only does this approach facilitate growth by providing reliable, controlled supply with low marginal costs but it also buffers against increasing extreme climate events where the grid may be compromised. As of this report, there are significant opportunities for grants, tax credits, low interest loans and other federal incentives to significantly impact the financial profile of clean energy investments.

2. Summary of Team Member Activities

Team Member Name	Organization/ Business/ Company	Role / Responsibilities
<p><i>Team Captain /Lead/ Point of Contact: Summer Goldman</i></p>	<p>MI2 & Dixon Strategies</p>	<p>MI2 Chief Operating Officer. Role: Project Lead. Summer has been keeping the project on track, serving as a liaison between DOE, Power Connectors, Team Members, and partners. Summer drafted and refined multiple drafts of the 2 RFPs based on responses from the RFI, published and advertised the RFPs, gathered responses, recruited members of the RFP Review Committees, and coordinated the review process to identify the best-suited candidates. These RFPs will advance a community-based clean energy transition because they will help metals and advanced manufacturers: (1) develop a Clean Energy Conversion Plan that will inform types of clean energy that could be used in their own plants, and (2) identify a potential roadmap and lay the groundwork for developing a statewide recycling plan that will increase available feedstock for metals recycling in Kentucky. Then when a key Board member (recycling subject matter expert) suddenly left, she helped the group navigate how to postpone selection of the Recycling RFP consultant and put a plan in place to host Roundtables over the next few months to gain the partners and information needed to select the best consultant and provide feedback to guide the consultant. She has also been overseeing the Clean Energy Plan being produced by the consultant All4 and providing feedback.</p>
<p><i>Team Member: Vijay Kamineni</i></p>	<p>MI2 & Logan Aluminum</p>	<p>MI2 Chief Executive Officer & Accelerate KY Fellow. Role: Manufacturing Industry Representative. Vijay plays multiple roles as Logan Aluminum’s Chief Innovation & Technology Officer and MI2’s CEO. Vijay helped review the RFPs to provide guidance and feedback on the RFP documents and processes. As needed, he recruited industry representatives to participate in the RFP process and the workforce development planning process in the 4 communities. Vijay’s work was vital on this project because he represented the voice of others in the metals and advanced manufacturing industry to make sure their needs were met when developing these clean energy, recycling, and workforce initiatives.</p>
<p><i>Team Member: Sam Ford</i></p>	<p>MI2 & Accelerate Kentucky</p>	<p>MI2 Director of Strategic Communications & Accelerate KY Executive Director. Role: Western KY Coalfield Community Engager. Sam shared the KY-WORCS white paper to recruit key partners and provided input to guide the development of the Outline that would be used for the community workshops. Sam also led the KY-WORCS community engagement efforts in the western coalfield communities of Muhlenberg and Ohio counties. Sam’s work was needed to ensure local leaders and residents of disadvantaged western coalfield communities were included in designing a workforce program that will help local people, including disadvantaged populations, while simultaneously meeting the workforce needs of the metals and advanced manufacturing companies to create jobs in these rural communities that can be completed “outside the plant.” Sam also collaborated with NSF GAME Change stakeholders and the Kentucky</p>

		Association of Manufacturers to plan and host the Kentucky Industry Conference and planned the KY-WORCS panel.
<i>Team Member: Ruthie Caldwell</i>	MI2 & Vision Granted	MI2 Grants Consultant & Accelerate KY Fellow. Role: Eastern KY Coalfield Community Engager. Ruthie drafted the initial Outline for the KY-WORCS planning documents and led the KY-WORCS community engagement efforts in the eastern coalfield communities of Floyd and Pike counties. She also participated in the Community Energy Innovation Summit in Washington DC in June to connect with peers and gain information about DOE programs and technical assistance opportunities that could help metals and advanced manufacturing companies. Like Sam, Ruthie’s work was vital to ensure local leaders and residents were included in planning the workforce development program in Floyd and Pike counties. Ruthie also helped leaders in the four communities refine plans to develop a concept for the Digital Equity grant and worked with the community partners to build trust and gain letters of commitment for the \$12-million grant application. She also hosted a virtual meeting between the communities to help them get to know each other and share their opportunities and challenges as a peer learning experience before the Kentucky Industry Conference.

3. Resources & Capabilities Used

Our team’s complementary skills, resources, connections, and experience have been invaluable in advancing the clean energy manufacturing ecosystem in Kentucky’s disadvantaged communities.

- Summer Goldman’s executive expertise kept the project on track, managing the RFP processes for the clean energy and statewide recycling plans.
- Vijay Kamineni’s connections with metals industry executives and board members ensured that these plans and the KY-WORCS program aligned perfectly with the goals of MI2 and our industry partners.
- Sam Ford, with his communications expertise, organized the Kentucky Industry Conference and developed the community pitch panel, giving these four communities a platform to showcase their strengths to metals companies. His close ties to the western coalfields were also key in supporting Muhlenberg and Ohio County leaders as they developed their KY-WORCS concepts and helped with siting their locations and building local partnerships.
- Similarly, Ruthie Caldwell’s project management skills and local connections living in Floyd County and within a 10-minute drive of Pike County helped these communities shape their KY-WORCS plans and lay the groundwork for the Digital Equity grant application. Additionally, Ruthie helped onboard and worked alongside a new American Connection Corps VISTA brought to Floyd County who has played a key role in finding a potential site for the KY-WORCS satellite office and has been working with Insitu Energy to map former coal mining assets and investigate them as potential sites for clean energy projects that could host a manufacturing plant.

Together, this team leveraged their diverse capabilities to move Kentucky’s clean energy and workforce ecosystem forward in a way that’s directly benefiting these communities.

4. Peer Learning Key Takeaways

Our team gained valuable insights through peer learning activities, with the in-person summit in Washington, D.C., being especially impactful. Connecting with innovative teams like Green Leap Riverside, (developing an app to help manufacturers reduce energy use), and Second Muse (promoting climate equity in New York’s manufacturing) opened our eyes to new approaches.

One highlight was sharing MI2’s MIT REAP-inspired engagement model with a professor from UT Arlington who struggled to involve industry reps. We explained how including industry, government, entrepreneurs, investors, and higher education builds a collaborative innovation ecosystem.

One of our favorite takeaways came from Green Leap Riverside’s creative solution to childcare challenges in manufacturing. They suggested recruiting employee spouses and family members to set up onsite childcare—and we thought, “Yes, let’s try this in Kentucky!” So, we found local partners who are just as excited about the idea who can support KY-WORCS communities to implement it! Thanks to Green Leap’s suggestion during the peer roundtable, we even included funding for this in our Digital Equity grant application. Without their spark, we might never have considered it!

In our most recent October exchange, we had a real “aha!” moment when peers shared their challenges working with universities on big NSF Engines and EDA Tech Hub grants. Many found they were asked to partner but weren’t given a budget line item—yikes! This was eye-opening for us, and now we’re ready to go into these collaborations with a clear focus on negotiating funding. It’s all about making sure KY-WORCS has the resources it needs to thrive!

5. Support of Capacity Building, Innovation, Entrepreneurship, or Economic Development

MI2’s project is driving real innovation and economic growth for manufacturing ecosystems in four disadvantaged Kentucky communities. First, we’re helping manufacturers tackle clean energy challenges. The Clean Energy Report developed by All4 highlights ways for manufacturers to access clean energy faster than Kentucky’s current 7-year grid connection average. With reshoring trends and growing demand for U.S.-manufactured goods, Kentucky manufacturers urgently need this access, making our work essential to keeping them competitive.

Second, our project has sparked an innovative workforce development approach, KY-WORCS, that could serve as a model for other industries and rural communities. Kentucky faces a common workforce challenge that many states experience: metro areas along the interstate highways are short on labor, while the rural western and eastern coalfields have high unemployment and labor surpluses. KY-WORCS brings together MI2, AccelerateKY, metals companies, workforce institutions, local leaders, and residents to test this new economic strategy that bridges this gap. Our draft KY-WORCS Outline offers a replicable template, allowing other industries to adapt the model to meet their needs and build strong local ecosystems. This project is solving a common challenge for manufacturers while lighting the way for sustainable, community-based economic development in rural areas in Kentucky and across the nation.

6. Metrics Meeting Goals of the Prize

We’re thrilled to report that we’ve met most of the proposed goals for this prize! The Clean Energy Plan is nearly complete, laying the groundwork for faster access to clean energy in Kentucky, and KY-WORCS has made incredible strides—forming local partnerships, crafting tailored workforce plans, and even identifying a building for the satellite offices in each community.

We never expected to get all the partners to work together so well, building trust and creating all the plans needed to successfully submit a \$12-million grant application! This was a wonderful, unexpected achievement, far beyond our original expectations. This Prize created the engagement and momentum needed to make it happen.

Below is a table of the original proposed metrics with their current status added in the right column. While the Statewide Recycling Plan is temporarily on hold until 2025, and MI2 decided that KY-WORCS grant details should remain off the MI2 website to protect privacy, these milestones reflect measurable progress toward our clean energy and workforce development goals. Thanks to this prize, we're moving closer to a sustainable, community-centered manufacturing ecosystem in disadvantaged Kentucky communities.

Work Plan Report: MI2 Kentucky Clean Energy Metals Manufacturing				
ENGAGE, Progress Phase 1: March 7-July 19, 2024				
Goals	Activities	Metrics	Milestones	Achieved?
Goal 1: Extensively seek and select a highly qualified organization to develop a Clean Energy Conversion Plan for KY metals manufacturers.	A) Collect RFI responses and work alongside industry experts and Clean Energy Prize mentors to develop an informed RFP.	A) 1 RFP approved by MI2 Board.	A) RFP developed.	YES - gained assistance from Power Connectors to review and finalize RFP.
	B) Post and advertise RFP; seek out and invite experts to apply.	B) Minimum of 3 qualified responses submitted.	B) RFP application launched.	YES - posted on May 1 Closed June 1st. 3 responses submitted.
	C) Recruit and gather a qualified Review Committee.	C) 1 review committee formed with at least 1 expert each from: Metals Industry, MI2, and the RFP subject matter (clean energy or recycling).	C) Review Committee members selected.	YES - committee of 5 members reviewed RFPs (2 industry leaders, 1 ex-officio board member, 2 mi2 staff)
	D) Score RFP responses using a detailed rubric and select most qualified response.	D) If determined as highly qualified by the Review Committee, the RFP receiving the most total points will be selected.	D) RFP Winner selected.	YES - All4 selected as winner.
Goal 2: Extensively seek and select a highly qualified organization to	<i>*see Goal 1</i>	<i>*see Goal 1</i>	<i>*see Goal 1</i>	YES - gained assistance from Power Connectors to review and finalize RFP.

develop a plan for a Statewide Metals Recycling Initiative for KY.	*see Goal 1	*see Goal 1	*see Goal 1	YES - posted on May 1 Closed June 1st. 4 responses submitted.
	*see Goal 1	*see Goal 1	*see Goal 1	YES - committee of 5 members reviewed RFPs.
	*see Goal 1	*see Goal 1	*see Goal 1	Paused due to Recycling Board member leaving. Will resume 2025.
Goal 3: Work inclusively alongside local community members and metal manufacturing companies to develop an initial draft of a comprehensive MI2 Talent & Workforce Plan outlining the four workforce development initiatives.	A) Based on initial input from the 4 communities and MI2 partners, draft an outline for the 4 Talent & Workforce programs, including a Summary, Work Plan, List of Partners, Timeline, and Budget.	A) 4 draft outlines completed (1 set of documents for each Talent & Workforce program)	A) Draft outlines completed.	YES - see Outline developed to be shared publicly.
	B) Host planning & feedback gathering sessions in each of the 4 communities, with Key Partners, and with the MI2 Talent & Workforce Group to present the draft outline and gain feedback.	B) 6 Planning & Feedback Gathering sessions.	B) Feedback Gathering sessions hosted.	YES - sessions held on: (1) Key Partners 06/07, (2) T&W Group 06/10, (3) Floyd 06/20, (4) Pike 07/12, (5) Muhlenberg 07/12, (6) Ohio 07/15.
REFINE, Impact Phase 2: July 5-Nov 15, 2024				
Goals	Activities	Metrics	Milestones	
Goal 1: Finalize and present a report outlining the initial research findings from	A) MI2 executes contract with RFP winner, provides guidance, and tracks progress to develop outline for Clean Energy Conversion Plan.	A) 1 contract signed and executed.	A) Contract executed.	YES - executed with All4.

an Impact Report along with an Outline for developing a 5-Year Clean Energy Conversion Plan for KY metals manufacturers.	B) RFP Winner researches, develops Case Studies, outreaches community members, and drafts outline for Clean Energy Conversion Plan, while checking in and seeking input from MI2 weekly.	B) Documents will include 1 Impact Report, at least 3 Case Studies (projects with govt. or industry partners and existing pilots on energy waste and alternate energy supply), and 1 Outline of information needed with Next Steps for a future Clean Energy Conversion Plan.	B) Documents drafted.	YES - documents drafted and in review. All4 shared 1-pg summary that can be shared with this report.
	C) RFP Winner develops a presentation of findings, case studies, and the drafted documents, and presents to the public to gain community feedback.	C) 1 public presentation	C) Public presentation delivered.	Paused until Plan is complete.
Goal 2: Finalize and present a report on the initial research findings from a Feasibility Study and Draft Outline for developing a Statewide Metals Recycling Initiative in KY.	A) MI2 executes contract with RFP winner, provides guidance, and tracks progress to develop a draft for a Statewide Metals Recycling Initiative feasibility study and plan.	A) 1 contract signed and executed.	A) Contract executed.	Paused until 2025 after Roundtables can be held to gain feedback on Recycling project.
	B) RFP Winner researches existing recycling programs, outreaches community members to gain input, and drafts outline for Statewide Metals Recycling Initiative, while checking in and seeking input from MI2 weekly.	B) Documents will include initial Research Findings on approaches and learnings on Metals Recycling practices across states and municipalities with at least 3 Case Studies, 1 draft feasibility study for increasing Kentucky's metal recycling efforts, and 1 outline showing the contents needed for a Strategic Plan for a Kentucky Statewide Metals Recycling Initiative Plan.	B) Documents drafted.	Paused until 2025 after Roundtables can be held to gain feedback on Recycling project.

	C) RFP Winner develops a presentation of findings, case studies, and the drafted documents, and presents to the public to gain community feedback.	C) 1 public presentation	C) Public presentation delivered.	Paused until 2025 after Roundtables can be held to gain feedback on Recycling project.
Goal 3: Finalize and present planning documents needed to develop grant applications to fund 4 Talent & Workforce projects: the Job Quality Initiative, Locally Distributed Organizations, Metals University, and preparing the future manufacturing workforce.	A) Revise the key documents based on feedback from community sessions in Phase 1.	A) 1 revised set of planning documents for each of the 4 workforce programs, including: Work Plan, Timeline, Budget, and List of potential funding opportunities.	A) Second draft of planning documents completed.	Yes. Each community developed a plan that was incorporated into a Digital Equity grant application submitted 09/23/2024.
	B) Gain additional community and industry partner feedback and support by sharing 2nd draft of documents with community, key partners, and MI2 Talent & Workforce group members allowing for a second round of feedback to refine the plans online.	B) 4 plans posted and shared online.	B) Second draft of plans posted and shared online.	Yes (see above)
	C) Finalize, post the 4 plans on the MI2 website along with a list of potential funding opportunities for each, and present.	C) 4 plans finalized, shared, and presented.	C) Final plans developed and presented.	Yes, the plans were finalized, but, no, the team does not want the grant posted on the website.

ACHIEVE, Future Plans Phase 3: 2025-2030

Goal 1: Implement the 5-Year Clean Energy Conversion Plan to increase the clean energy supply from Kentucky sources by 10% for the metals industry by 2030.

Goal 2: Implement the Statewide Metals Recycling Initiative for KY to increase recycled feedstock coming from Kentucky sources by 10% for the metals industry by 2030.

Goal 3: By 2030, Implement the comprehensive Talent & Workforce Plan to: (1) Develop a statewide Job Quality certification program and certify 20 Metals Manufacturing jobs; (2) Pilot and refine the Locally Distributed Organizations program in Floyd, Pike, Ohio, and Muhlenberg counties bringing 200+ critical "outside the plant" manufacturing jobs to disadvantaged coal communities; (3) Launch the Metals University, an online platform serving as a clearinghouse of fast-tracked industry certifications; and (4) Develop recruitment and upskilling pathways helping workers climb the career ladder into 3,000 high quality manufacturing jobs statewide.

7. Support of an Equitable Transition

MI2's project is paving the way for an equitable clean energy manufacturing ecosystem in Kentucky's disadvantaged communities. First up, the Clean Energy Report has sparked us to tackle the state's urgent energy access issues. Kentucky's grid can't support even one more large manufacturer right now, so this report is laying out pathways for clean energy solutions that will keep our manufacturers competitive on the global stage. Thanks to this prize, MI2 is now at the table for big discussions, including next week's roundtable with the Center for Climate and Energy Solutions on "Manufacturing an Advanced Energy Economy in Kentucky."

We're also thrilled to be creating real opportunities for coal communities, bringing quality manufacturing jobs back through local partnerships and satellite offices that support economic resilience and community growth.

And although the Recycling Plan is on pause, the conversations sparked by this prize are rolling! At the Kentucky Industry Conference, the Louisville Marriott couldn't recycle aluminum cans, even while serving drinks in them. So, participants from Berea (a rare recycling town) collected cans in a box and lugged them home! A metals conference without recycling? Never again! Now, we're planning to launch an Aluminum Can Recycling Alliance this Spring to jump-start recycling efforts statewide. And we hosted a discussion about metals recycling in the state at the conference that included MI2 member companies such as Nucor's River Metals Recycling, Crown, Magnar Metals, and Kentucky-based startup Recyera (formed by a University of Kentucky professor).

IV. Impact Criterion #4: Projected Impacts and Sustainability Plan

1. Vision for Just & Equitable Community-Based Clean Energy Transition

MI2's vision is to make Kentucky the preeminent destination for metals manufacturing innovation, powered by a just and community-based clean energy transition. Achieving this means boosting clean energy production, creating a statewide recycling plan for a circular metal economy, and ensuring no community is left behind—especially those hit hardest by the coal downturn.

Kentucky's counties range from some of the poorest to the wealthiest in the country, and areas once thriving on coal now face steep challenges in income, employment, and health. With this prize, MI2 can turn plans into action, helping rural communities access quality manufacturing jobs. Starting with four focus communities, we'll bring in industry partners, workforce development, and clean energy solutions.

Our approach is ambitious but achievable, ensuring that Kentucky's energy future benefits all its people while building a resilient and equitable manufacturing ecosystem.

2. Future Achievements With Ongoing Funding Support

With \$300,000 in additional prize funds, MI2 could make transformative strides in Kentucky's disadvantaged communities toward a just and community-centered clean energy transition. Specifically, each community would receive \$50,000 to equip and prepare a satellite KY-WORCS office, allowing metals companies to hire at least three employees in each location by this summer as a pilot program.

This funding would also enable MI2 to bring on a dedicated team member to drive the KY-WORCS program, helping each community connect with manufacturing employers, establish their satellite offices, and launch effectively. Additionally, we would finalize the Statewide Recycling Plan, laying the groundwork for a circular economy, and advance the Clean Energy Conversion Plan to increase clean energy access for manufacturers.

With this funding, MI2 is poised to build sustainable, high-quality job opportunities while ensuring Kentucky's rural communities play an active role in a brighter, cleaner energy future. This investment would not only support economic resilience but also set Kentucky on a path to becoming a national leader in equitable, community-based manufacturing innovation.

3. Strategies to Secure Ongoing Funding Support

MI2's operational costs are covered through membership dues and partial funding from the Cabinet for Economic Development, giving us a strong foundation to continue our core initiatives. For special projects like KY-WORCS, as well as the implementation of our clean energy and statewide recycling plans, we will actively seek additional startup funding to propel these efforts forward.

By utilizing Grant Ready KY's powerful grant search engine, as well as Empower Innovation, Cleantech Funding Database, and energycommunities.gov, our Grants Consultant will identify and apply for targeted funding opportunities, collaborating closely with state and local governments to support and scale these projects. If possible, we'll also leverage our connections with EDA Tech Hubs and NSF Engines partners to secure collaborative funding that aligns with these regional initiatives. In line with the state's commitment to manufacturing and workforce development, we'll also pursue Congressionally Directed Spending for projects like these when appropriate.

For KY-WORCS, each satellite office will be structured to become self-sustaining by leasing office space to manufacturing and tech companies, ensuring local operational costs are covered. With this combined strategy, MI2 is well-positioned to ensure the long-term growth and sustainability of our clean energy and recycling initiatives in Kentucky's disadvantaged communities.

4. Anticipated Results of Post-Prize Efforts

If awarded these additional funds, MI2 anticipates exciting results that will drive a just and community-centered clean energy transition in Kentucky's disadvantaged areas. Within one year, each of the four communities will open a KY-WORCS satellite office, piloting the program with three hires per community—creating 12+ quality jobs in year one alone. The Clean Energy Report and Statewide Recycling Plan will also be completed, with at least one recommendation from each actively underway.

Long-term, we'll work toward three key goals by 2030: (1) implement the five-year clean energy plan to increase Kentucky's clean energy supply by 10%; (2) launch a statewide metals recycling initiative to boost recycled metal feedstock by 10%; and (3) fully implement KY-WORCS to bring at least 50 "outside-the-plant" manufacturing jobs to each satellite office, totaling 200 jobs by 2030.

These post-prize efforts will create sustainable, high-quality jobs, build resilience, and ensure that rural Kentucky communities lead in clean energy and advanced manufacturing innovation.

With the strong foundation this prize has helped us build, we're more motivated than ever to drive Kentucky's clean energy and manufacturing future—one that uplifts every community, creates lasting jobs, and positions Kentucky as a national leader in sustainable, equitable economic growth.