



CREATING GOOD JOBS, A CLEAN ENVIRONMENT, AND A FAIR AND THRIVING ECONOMY

BlueGreen Alliance

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Response to the Department of Energy's Request for Information:
[Transforming Industry: Strategies for Decarbonization](#)

The BlueGreen Alliance (BGA) unites the nation's labor unions and environmental organizations to solve today's environmental challenges in ways that create and maintain quality jobs and build a stronger, fairer economy. Our partnership is firm in its belief that we don't have to choose between good jobs and a clean environment—we can and must have both. We appreciate the opportunity to respond to the U.S. Department of Energy's (DOE) request for information (RFI) that will help inform their new vision study to identify cost-effective and industry-specific strategic pathways to achieve a net-zero industrial sector by 2050. Establishing a coordinated industrial strategy across DOE is essential to fully capturing the benefits of the Inflation Reduction Act and the Bipartisan Infrastructure Law (BIL), and for charting a path towards a net-zero economy by 2050.

The economic impacts of manufacturing are extensive, contributing \$2 trillion a year to the gross domestic product (GDP).ⁱ Manufacturing workers earn 13% more in wages and benefits than comparable workers in the rest of the private sector, and energy-specific manufacturing pays an additional premium of 13% over the entire manufacturing industry and 20% over the national median wage.ⁱⁱ However, the industrial sector also represents a large and growing share of emissions with far less progress made to date than in many other sectors. Industrial sector emissions now account for nearly one-third of greenhouse gas (GHG) emissions in the United States and industry is on a path to becoming the highest emitting sector in the U.S. by the early 2030s. Under current policy, industrial emissions are projected to increase by 12% from current levels by 2035.ⁱⁱⁱ

At the same time, these industries are essential to produce the materials and components necessary for clean technology and infrastructure— and to modern life. Manufacturing jobs have a higher union density than other sectors and have the proven ability to provide pathways into the middle class

for millions of workers and families, and to support high-skill, high-wage jobs. As DOE moves forward on this vision study, it must ensure that working people do not bear the costs of technological and economic shifts. Compared to other advanced nations, American workers are routinely left far more vulnerable to these shifts. Prioritizing and preserving good, family sustaining union jobs is an imperative as DOE considers industrial decarbonization pathways. While it is important and necessary to invest in new manufacturing facilities, reinvestments in today's industrial plants and communities are essential to reverse the unsafe and inequitable practices that all too often left workers and communities bearing the costs—but not the benefits—of industrial development and ensure that future industrial jobs are as good—or better—than the jobs of today. Decarbonization pathways can be an important step in securing the future of well-paid, U.S. manufacturing jobs in a net-zero economy—ensuring the longevity and competitiveness of some of the nation's most important industries. With the right focus, this vision study can be a critical pathway through which DOE can detail how it intends to support domestic manufacturing growth and industrial decarbonization, while creating and preserving good union jobs, re-shoring clean technology supply chains, and delivering public health and environmental benefits to the workers and communities that need it most. To this end, BGA offers the following responses to the RFI:

(1A.6) What are the current and future gaps/barriers in workforce needs and availability?

BGA and the National Skills Coalition recently commissioned a report by the Political Economy and Research Institute (PERI) to examine the impact of the Inflation Reduction Act, BIL, and the CHIPS and Science Act on labor supply and demand.^{iv} The report concluded that more than one in five jobs created directly by the Inflation Reduction Act, BIL, and the CHIPS and Science Act will be in the manufacturing sector, with an estimated 230,000 jobs created annually. Additionally, the analysis found that forty-eight specific occupations are likely to experience significant increases in demand, of which 27 have relatively higher entry requirements that will require formal training/credentialing. In the manufacturing sector, assemblers and fabricators and electrical, electronic, and electromechanical assemblers were the positions projected to experience the greatest increases in demand.

Twenty of the occupations have the potential to face labor shortages, resulting in an anticipated total labor shortage of nearly 1.1 million workers if the investments reach their anticipated levels. To expand the pool of qualified

workers investments in training, apprenticeships, and credentials associated with these jobs and related career pathways will be required. Women and people of color are also significantly underrepresented in occupations that are likely to face labor shortages, indicating the need for DOE to high-road training partnerships and local hiring initiatives that can support recruitment, retention, and career advancement for people of color and women in the manufacturing sector. As a result, as DOE completes this vision study it will be essential for them to make the case for strong labor standards and protections for workers' right to organize, as well as inclusive workforce development strategies centered on partnerships with the industrial unions who represent workers in these sectors, as they are best positioned to understand the workforce development needs in the manufacturing sector. It is also important that DOE prioritize the needs of the incumbent workforce and put them first in line for employment and training opportunities.

(1A.10) How can government broaden the reach of energy management education and training programs to engage a diverse audience, including outside the traditional sphere?

With increasing demand for skilled workers, DOE should ensure their energy management education and training programs include coursework and/or materials for union-affiliated and other high quality training providers. These institutions can offer specialized training tailored to an industry's unique needs, making them invaluable sources for creating a skilled and diversified workforce.

An advantage of registered apprenticeship programs and other joint labor-management training partnerships is that they also provide practical and hands-on experiences that can be vital for individuals and for workplaces hoping to upskill their existing workforce. This on-the-job training bridges the gap between theoretical knowledge and real-world application, equipping workers with the skills needed to install and operate new technology safely and effectively. Collaborative efforts with unions can facilitate targeted outreach, ensuring union members are aware of and prepared for opportunities that arise from investments in industrial transformation.

Pre-apprenticeship opportunities that are linked to either union-affiliated registered apprenticeship programs or local employers with existing union representation and target disadvantaged communities are another tool to widen and diversify audiences for education and training programs. All these

approaches enhance industry's access to skilled workers while ensuring that educational materials are accessible to as wide an audience as possible.

(3.10) How should DOE work with communities to develop evaluation and impact criteria and evaluate individual decarbonization pathways?

Public engagement and stakeholder engagement opportunities should be conducted early in a project's development proposal timeline, and companies should provide clear mechanisms for modifying aspects of their projects in response to priorities and/or concerns raised during public engagement opportunities. Early and ongoing community engagement should be a core tenet of all decarbonization pathways. Companies should clearly define community and workforce benefits in the form of emissions reductions, good local jobs, local revenue, training pathways, improvements to local infrastructure, and a means of avoiding zero-sum conflicts with communities around water, land, energy use, and impact on air quality. All promised benefits should be measurable, verifiable, enforceable, and—wherever possible—turned into legally binding community benefit agreements (CBAs). Labor unions, community-based organizations, Indigenous Peoples, communities of color, low-income communities, impacted workers, and communities impacted by deindustrialization, energy transition, and environmental injustice are examples of some of the stakeholders who should be intentionally sought out and equipped with resources to engage early and meaningfully in DOE's evaluation of decarbonization pathways.

(3.15) What are the most useful criteria/metrics for environmental justice and energy equity?

Federal and state agencies are playing a crucial role in uplifting workers and environmental justice communities as they develop programmatic requirements and guidance to implement new federal laws. BGA supports the consistent use of the criteria and metrics described below to:

1. Support and create good-paying union jobs, increase union density, and support the build out of a more robust, union-represented, and diverse workforce; and increase access to good union jobs for low-income, communities of color, and historically underrepresented communities.
2. Ensure worker rights, benefits, and health and safety on the job.
3. Support meaningful community and labor engagement, prioritize systematically marginalized communities, and address racial, environmental, and economic injustice.

4. Reduce emissions and pollution while improving environmental and public health.

The goals outlined above are aligned with the J40 initiative to ensure that disadvantaged communities receive the benefits of new and existing federal investments. Below are corresponding metrics that can be used by DOE to track and report progress towards these goals. It is worth noting that a number of the proposed metrics, such as Davis Bacon, are in fact required by law and it is the duty of federal agencies to educate applicants on their legal obligations and to enforce these requirements through tracking and reporting. Other metrics, such as local and targeted hire, wraparound services and community benefits plans are powerful equity tools that can be tracked by federal agencies and align with Executive Order 14096 Revitalizing Our Nation's Commitment to Environmental Justice for All.^v

1. Support and create good-paying union jobs, increase union density, and support the build out of a more robust, union-represented, and diverse workforce; and increase access to good union jobs for low-income communities, communities of color, and historically underrepresented communities:
 - **Davis Bacon:** For infrastructure projects that include construction; alteration or repair of public buildings; and public works, contractors and subcontractors must agree that all employees shall be paid the local prevailing wages and receive accompanying benefits as identified under Davis Bacon and Related Acts. Agencies should ensure funding recipients comply with Davis Bacon.
 - **Project Labor Agreements (PLA):** For larger infrastructure projects, PLAs ensure high-road labor standards, control labor costs and ensure timely project completion. A PLA establishes the terms and conditions of employment for workers on specific construction projects, including wages, hours, working conditions, and dispute resolution methods. PLAs should be encouraged in agency guidance and funding opportunity announcements.
 - **Community Benefits Agreement (CBA):** Also, for larger infrastructure projects, CBAs, with community input, identify additional benefits that will be attached to the project – community benefits may include local workforce training guarantees such as targeted hire and local hire provisions. CBAs

should also be encouraged in agency guidance and funding opportunity announcements.

- **Targeted hire, Local hire:** These provisions, when included in a CBA, are a powerful equity tool that can be used to benefit EJ communities. *Targeted hire* identifies a minimum percentage of workers to be hired from certain marginalized communities. This may include women, people of color, veterans, the formerly incarcerated, dislocated workers, indigenous people, low wealth communities, communities heavily impacted by climate change, pollution, energy transition, or deindustrialization, and many others. Similarly, *local hire*, identifies a minimum percentage of workers from the local community (or state) to be hired on the project. Agencies should encourage or otherwise prioritize funding recipients to utilize targeted hire and local hire provisions for larger projects.
 - **Union-Affiliated Training, Registered Apprenticeship, and Pre-Apprenticeship Programs:** Often unions and other registered apprenticeships and pre-apprenticeships offer wrap-around services. These services can provide support towards childcare, transportation, etc. to ensure workers in EJ and other marginalized communities have access to good jobs offered by these programs. Federal agencies should encourage or—where statutory authority permits—require the use of these and other union-affiliated training programs to promote workforce development and ensure that workers receive appropriate training and education that will lead to good jobs and a stable career.
2. Ensure worker rights, benefits, and health and safety on the job:
- **Free and fair choice to join a union:** By supporting workers' rights to organize and bargain collectively, agencies can promote fair and safe working conditions, protect workers' interests, and foster a more inclusive and equitable society. Encourage funding recipients to commit to protecting workers' rights to join a union through a binding neutrality agreement.
 - **Collective Bargaining Agreements:** Agencies should require applicants to demonstrate or explain whether the applicant or sub-applicants have existing collective bargaining agreements or how they will execute them.
 - **Prohibition on spending:** Agencies should prohibit award recipients or any sub-recipient from using grant funds, whether directly or indirectly, to oppose union organizing.

- **Retirement contributions and fringe benefits:** Promoting retirement contributions and fringe benefits can support employer recruitment efforts, motivate existing employees to increase and maintain high performance, and reduce employee burden with certain free and money-saving accommodations like transportation assistance or meal stipends. Agencies should track if contractors or sub-contractors offer these benefits to employees.
 - **Title VI of the Civil Rights Act of 1964:** Agencies should require compliance with Title VI of the Civil Rights Act in order to promote equal opportunity and prevent discrimination in all federally funded programs and activities. This can help to ensure that all individuals, regardless of their race, color, or national origin, have access to the benefits of federally funded programs and are not subjected to discrimination.
 - **Preventing worker misclassification:** Worker misclassification can lead to loss of wages and denial of federal protections and is most prevalent among non-union workers. Federal agencies should require applicants to explain how projects will properly classify employees and notify all workers of their rights, including workers treated as independent contractors.
 - **Commitment to workplace safety and health:** Agencies should require applicants to express commitment to the CWHSSA and OSH Act at the time of the application, and during the use of program funds. Agencies should require evidence of a comprehensive labor-management workplace safety and health committee that is designed and implemented with workers and their representatives and in compliance with state and federal Occupational Safety and Health Administration (OSHA) regulations to ensure safe and healthy working conditions.
3. Support meaningful community and labor engagement, prioritize systematically marginalized communities, and address racial, environmental, and economic injustice:

Federal agencies should suggest including the following in their funding applications:

- **J40 Targeting:** A description of how the project will particularly benefit Justice40 communities, low-income communities, communities of color, and communities facing deindustrialization, environmental injustice, or energy transition.

Applicants should also identify whether these benefits align with local community priorities, and how they worked alongside impacted groups to identify these benefits.

- **Community engagement plan:** A plan to engage with and address the priorities of EJ communities, labor unions and other worker organizations, workforce development organizations, local government, emergency responders, Tribes, organizations representing residents and businesses, systematically marginalized communities, and community-based organizations that support or work with these communities.
- **Commitment to deliver good jobs & other community benefits:** A written commitment to deliver measurable community and job benefits through milestones and the use of tools such as good neighbor agreements, local hire agreements, PLAs, Community Workforce Agreements, CBAs, and/or collective bargaining agreements. The agreements should identify how concerns will be mitigated, and specify the distribution of community and economic benefits, including job quality, access to jobs and business opportunities for residents, and mitigating community harms, thus reducing or eliminating these types of risks.
- **Letters of support:** Applications can require letters of support from EJ community organizations, Tribes, and unions demonstrating initial consultations with key stakeholders.

4. Reduce emissions and pollution while improving environmental and public health:

Federal agencies should suggest including the following in their funding applications:

- **Identifying existing environmental and public health burdens:** A description of the existing environmental burdens at the proposed project location(s) and surrounding areas, as well as existing public health burdens experienced by impacted communities, using the best available tools to identify these burdens.
- **Analysis of potential impacts:** For larger projects, applicants should conduct an analysis and health impact assessment of the potential impacts of the proposed projects. The following should be considered depending on the nature of the project including impacts on Tribal land; frontline communities; cultural and historic resources and community institutions; animal species;

land use; water and air quality; greenhouse gas emissions; transportation; and other local concerns. Applicants should describe how these potential impacts will interact with or exacerbate existing public health concerns of the affected communities.

- **Maximize health and environment benefits:** Also, for larger projects, an implementation strategy with measurable steps the applicant will take to maximize benefits, including public health and environmental benefits, from reduced pollution and exposure to toxics; minimize negative impacts, including natural resource depletion and ecosystem disruption; and measure, track, and report project impacts, including any community monitoring data.
- **Letters of support from EJ organizations:** Applications can show support from EJ community organizations by including letters from organizations that have reviewed the environmental burdens description, analysis and implementation strategy identified above.

There are already examples of federal agencies tracking some of these metrics. Most notably, DOE has advanced a department-wide effort to integrate many of these metrics into funding opportunities by requiring applicants to develop Community Benefits Plans (CBP).^{vi} The CBP details how the project will ensure diversity, equity and inclusion, and the development of quality jobs and a skilled workforce; meaningfully engage with communities; and support Justice40 goals for disadvantaged communities.

(4A.3.6, Cement) Are there any unique barriers/challenges for this production route?

Carbon capture and sequestration will be a crucial method for reducing emissions in the cement industry. However, its effectiveness depends not only on a company's ability to implement carbon capture at their facilities but also on their ability to establish the necessary infrastructure for transporting and permanently storing the captured carbon through geologic injection. These ancillary transport and storage projects create more points of needed community outreach and increase the number of stakeholders that must be addressed to successfully deploy a project. These additional steps, and their associated regulatory and permitting timeframes, must be considered as DOE plans for the large-scale deployment of carbon capture at cement facilities across the country.

Cement decarbonization projects should also conduct environmental analysis that includes energy use and life cycle environmental impacts. Projects should evaluate their potential to avoid or reduce air, water, and land pollution—particularly pollution that would impact or has impacted environmental justice and other frontline communities.

(4D.8, Steel) Are there any other subsector-specific barriers, criteria, metrics, or targets that DOE should be aware of as a decarbonization strategy for this subsector is developed?

Today, most of the better paying, family-and-community supporting unionized steel jobs are in large integrated steel facilities using the blast furnace (BF)/basic oxygen furnace (BOF) process to produce primary steel from iron ore and their related supply chains.^{viii} Due in part to the chemistry of the production process and difference in fuel sources, these furnaces emit more CO₂ than electric arc furnace (EAF) facilities, which predominantly make secondary steel from recycled scrap and derive power from the electrical grid. Primary steelmaking remains critical for meeting industry demand for critical sectors like defense and transportation, as well as for the economic benefits the industry provides.

Both primary and secondary steelmaking processes will be needed to meet future demand. According to the World Steel Association, steel demand is growing faster than scrap can be made available. This is in part because the average lifespan of a steel product is 40 years, with the upper range for buildings and infrastructure steel to be around 100 years. A 2015 study in the *Journal of Cleaner Production* found that because of the demand for steel and scarcity of scrap, more than half of the steel produced in 2050 will still have to come from virgin materials like iron ore.^{viii} Even in a more circular economy than we have now, primary steel production will remain a major part of meeting the global demand for steel.^{ix}

In the case of steel, net-zero roadmaps should factor in steelmaking production processes and accordingly adjust the standards for environmental performance and for demand-side pull *Buy Clean* procurement programs. This will ensure an apples-to-apples comparison and incentivize both kinds of steel producers, primary and secondary, to reduce their environmental impact. Critically, US BF/BOF steelmaking is cleaner on average than the majority of steel producing nations, and the federal government is investing billions of dollars into industrial decarbonization to decarbonize it further.^x Given the

current state of the steel industry, separate standards for primary and secondary steel are critical at this point for ensuring *Buy Clean* procurement programs meaningfully reduce climate pollution. As integrated primary steelmaking is considerably more emissions-intensive than EAF secondary steelmaking, primary steelmakers would have no chance of qualifying for government purchases, and thus, no incentive to reduce emissions.

Meanwhile, EAF mills making secondary steel would automatically qualify as cleaner than all primary producers, reducing their incentive to cut EAF emissions. By comparing apples with oranges, such an approach would significantly limit *Buy Clean's* climate impact, which is why the General Services Administration (GSA) - in consultation with the Environmental Protection Agency (EPA) - released standards for procurement distinguishing between production processes.^{xi} DOE should adopt a similar approach and separate emissions reductions goals and standards so primary producers and secondary producers can compete amongst their respective counterparts on a level playing field to lower emissions.

The United States can and should invest in further reducing criteria air pollutant emissions from steel production as well. At the same time, we also should seek to limit imports and government purchases of steel from countries where steel production causes far more air pollution.

Conclusion

DOE has an opportunity through this vision study to detail how it intends to transform the industrial sector to dramatically reduce greenhouse emissions—as well as toxic air, water, and land pollution—while providing good union jobs in the clean economy and driving growth in U.S. manufacturing. Charting a path to industrial decarbonization by creating this study to identify cost-effective and industry-specific strategic pathways to achieve a net-zero industrial sector by 2050 will be essential to fully realizing the impacts of the Inflation Reduction Act and BIL. Thank you for DOE's work to complete this important update to its industrial strategy.

ENDNOTES

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- ⁱⁱ NASEO, EFI, and BW Research, Wages, Benefits, and Change: A Supplemental Report to the Annual U.S. Energy and Employment Report, April 2021. <https://www.naseo.org/issues/energy-jobs/employment-report>
- ⁱⁱⁱ Rhodium Group, Expanding the Industrial Decarbonization Toolkit, May 2024. <https://rhg.com/research/expanding-the-industrial-decarbonization-toolkit/>
- ^{iv} Political Economy Research Institute, Labor Supply, Labor Demand, and Potential Labor Shortages Through New U.S. Clean Energy, Manufacturing, and Infrastructure Laws, February 2024. https://peri.umass.edu/images/PERI_BGA_Labor_2_28_24.pdf
- ^v The White House, Executive Order on Revitalizing Our Nation's Commitment to Environmental Justice for All. <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/04/21/executive-order-on-revitalizing-our-nations-commitment-to-environmental-justice-for-all/>
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