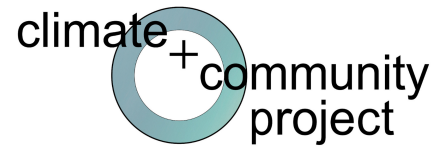




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DATE: Dec 2, 2022

TO: Department of Energy (dpahelp@energy.gov)

RE: Comments on the “Notice of Intent and Request for Information regarding establishment of a Program to Use Defense Production Act to Support Electric Heat Pump Manufacturing and Deployment”

I. INTRODUCTION

On behalf of the Greenlining Institute, Center for Community Action and Environmental Justice, Just Solutions Collective, Verde, Rewiring America, 350.org, Climate + Community Project, and Kinetic Communities Consulting, we urge the DOE to adopt the recommendations set forth in this letter on the Notice of Intent and Request for Information regarding establishment of a Program to Use Defense Production Act (“DPA”) to Support Electric Heat Pump Manufacturing and Deployment to ensure racial, climate and economic equity are centered in the development of the program.

The Greenlining Institute (“Greenlining”), works toward a future where communities of color can build wealth, live in healthy places filled with economic opportunity, and are ready to meet the challenges posed by climate change. Greenlining greatly appreciates the opportunity to submit public comments on the DPA to the Department of Energy (“DOE”). We believe the DPA will be a crucial tool in building social, environmental, and economic resilience to the impacts of climate change in the nation’s most frontline communities. Based on Greenlining’s decades long experience providing input on the development and implementation of grant programs at the intersection of climate and economic equity, our work to build deep relationships with

California neighborhoods and communities where the majority of residents are low-income and people of color, and our connections to local and national environmental justice groups, we offer the following guidance and context to support the development of the DPA funding program. Greenlining is joined by our partner organizations: Center for Community Action and Environmental Justice, Just Solutions Collective, Verde, Rewiring America, 350.org, Climate + Community Project, and Kinetic Communities Consulting, in sharing these recommendations.

Greenlining, Just Solutions Collective, 350.org, Climate + Community Project, and Kinetic Communities Consulting have sent a complimentary letter to the general RFI on the other technologies and several organizations including Greenlining have also attended roundtable discussions around the implementation of the DPA. In an effort to establish procedural equity¹ in the implementation of the DPA, we encourage greater communication and transparency into how the DOE will utilize stakeholder and public input in the design of DPA actions. For example, we sent a request to extend the RFI deadlines to ensure a comprehensive review and the DOE did not provide a response. Organizations require sufficient time to review materials, draft letters, and coordinate with partners; better communication with the DOE would have greatly helped streamline these processes and potentially allowed organizations with less capacity to weigh in. In addition, the RFI request states that “stakeholder input will inform DOE on the design of potential DPA actions” but does not elaborate on a timeline or whether they will provide details on how the feedback will be incorporated. Moving forwards, greater transparency in how the recommendations will be considered by the DOE will help build trust amongst environmental justice and equity focused organizations and create a table for a collaborative process on implementing the DPA.

Collectively, we firmly believe that equity must be an active, ongoing and evolving process in the DPA program to be successful in addressing injustices. We welcome the opportunity to work with the DOE to develop an equity centered DPA program that will benefit the most vulnerable members of our communities and align with the priorities of the Justice40 Initiative.

II. USING GREENLINING’S MAKING EQUITY REAL FRAMEWORK TO INFORM RECOMMENDATIONS

As requested, we have clearly identified which questions we will be responding to in the “**DETAILED RECOMMENDATIONS**” section that you will find below. In addition to providing

¹ Procedural Equity - Decision makers create inclusive and accessible processes for developing and implementing clean energy programs. Retrieved from: <https://www.aceee.org/topic/energy-equity>

responses to the specific questions, we use *Greenlining's Making Equity Real Framework*,² to indicate how the responses can help build equity into all aspects of the program -- including goals, process, implementation and analysis.

The *Making Equity Real Framework* is a tool that we use to ensure that equity is at the core of the entire program in every step including the goals, process, implementation, and evaluation. This framework was developed as part of Greenlining's efforts advising and shaping climate change grants in California. California offers a variety of climate change grants that aim to both fight climate change and also create a variety of other benefits. These grant programs can improve air quality and community health, reduce consumers' energy bills, and create clean economy jobs. But far too often these programs fail to adequately reach the communities with the greatest needs, especially low-income communities of color. For that reason, we believe officials designing these grants must make a conscious, thoughtful effort to embed social equity into all aspects of each program and grant-making process. We believe that these same considerations apply to federal grant making programs. Here is a brief overview of the framework:

1. The program's **Goals, Vision, and Values** should explicitly state the social equity goals of the grant program to help ensure these goals get prioritized.
2. The program's **Process** should include working with partners who have social equity expertise and incorporate strategies for inclusive outreach and technical assistance.
3. The **Implementation** of climate change grants is critical. Staff must make sure that grant awardees have the resources and tools they need to get the greatest possible environmental and economic benefits and minimize unintended negative consequences. Programs should target community-identified needs.
4. Finally, programs should **Evaluate** their impact, based on clearly defined social equity goals and criteria track success. This requires proactive planning to collect the data needed, so that administrators and officials can use the analysis to improve the program going forward and inform the design of future climate change grants.

Our theory is that by intentionally building equity into all aspects of a program, we can achieve the strongest equity outcomes in frontline communities. To indicate how we used the *Making Equity Real Framework* in our recommendations, we offer a high-level overview of how our

² Mohnot, S., Paykar, V., & Sanchez, A. (2019). *Social Equity in California Climate Change Grants: Making the Promise Real*. The Greenlining Institute.
<https://greenlining.org/publications/2019/social-equity-in-california-climate-change-grants-making-the-promise-real/>

individual recommendations fit into each of the 4 categories of the *Framework* so that the DOE can easily see how to embed equity at every stage of the program’s development, implementation, and evaluation.

To uphold equity in the DPA funding allocation, the DOE must ensure that equity is embedded throughout the program’s:

I. Stated Goal, Mission, and Values

- A. The DOE should clearly define diversity, equity, inclusion, and accessibility (“DEIA”) and community benefits plan (“CBP”), and make these definitions clear in the solicitation announcement. **[Questions 8 and 20]**
- B. The DOE should clearly identify and communicate how the DPA initiative advances specific Justice40 priorities in the solicitation announcement **[Questions 1,2,4,8,9,30,31]**

II. Process

- A. The DOE should conduct inclusive outreach and provide technical assistance to increase accessibility of this funding opportunity to minority-owned, women-owned, and disadvantaged businesses (“MWDBEs”) **[Questions 3,8,9,12,22,29]**
- B. As part of the awardee selection process, the DOE should have a technical advisory committee that includes representatives from community based groups, community colleges, universities, apprenticeship and workforce training organizations, labor unions, tribal organizations, and MWDBEs **[Questions 8,9,22]**
- C. The DOE should explicitly incorporate equity as a criteria for awardee selection **[Questions 3,8,12,22]**
 - 1. The DOE should incorporate the *Greenlined Economy Guidebook’s Six Standards for Equitable Community Investment* in its awardee selection criteria to advance proposals that **[Question 8]**
 - a) Emphasize race-conscious solutions
 - b) Prioritize multi-sector approaches
 - c) Deliver intentional benefits
 - d) Build community capacity
 - e) Are community-driven at every stage, and
 - f) Establish paths towards wealth-building

III. Implementation

- A. The DOE should include technical assistance on skills such as marketing, outreach, and business development to ensure that manufacturers are equipped

to effectively partner with contractors, utilities, and retail outlets who employ and serve residents of disadvantaged communities **[Questions 3,8,9,12,22,23,27,29]**

- B. The DOE should provide a streamlined resource on all federal government programs that will procure heat pumps and help create partnerships with state and local governments to enable unit cost reductions from bulk procurement and greater economies of scale **[Questions 8,9,22,24, 25, 26,27]**
- C. The DOE should provide training and support to awardees on developing and implementing a CBP and on social equity topics such as supply chain diversity, internal DEIA practices, and equitable building decarbonization programs and policy **[Questions 27,29]**

IV. Evaluation

- A. The DOE should coordinate evaluation of the DPA funding within the context of the DOE's larger Justice40 criteria and priorities **[Questions 1,2,4,8,9,30,31]**
- B. The DOE should refer to research and case studies by community based groups and workforce development organizations leading on high road job creation and equity to develop evaluation criteria for awardees **[Questions 8,9,12,20,23,24,25,26,27,29,30,31]**
- C. The DOE should build from successes and lessons learned from California Workforce Development Board's High Road Training Partnership program across the areas of equity, climate resilience, and job quality in evaluating the DPA program **[Questions 24,28]**

III. DETAILED RECOMMENDATIONS IN RESPONSE TO RFI QUESTIONS

A. Open Solicitation

1. **Solicitation Announcement:** *Based on what is described in the NOI, are there additional specific issues that the solicitation announcement should include?*

- We appreciate the selected technologies (heat pump water heaters, air source heat pumps, and ground source heat pumps) because of their potential to reduce energy costs and improve air quality in disadvantaged communities. We would like to see an emphasis on manufacturing technologies that can most directly be installed in multifamily affordable housing and heavily polluting industrial facilities in disadvantaged

communities. This is important to maximize benefits to disadvantaged communities and be aligned with the aims of Justice40.

- In addition to these technologies, we encourage DOE to consider if there are other technologies that might be appropriate to include. Technologies like integrated systems that combine a heat pump, ventilation system, and heat pump water heater have the potential to reduce barriers to multifamily retrofits, however these technologies are mostly in the Research and Development (“R&D”) phase and may not be ready for mass production. The DOE should consult with The New York State Energy Research and Development Authority (“NYSERDA”) ³ and the California Energy Commission (“CEC”) ⁴ who have provided R&D grants to these technologies to determine whether the DPA would be an appropriate mechanism to enable production at scale.

2. Electric Heat Pump DPA Solicitation: *Based on what is described in the NOI, what are the potential positive and negative impacts of limiting the solicitation to projects that can commence production or manufacturing no later than December 31, 2025? What is the ideal length of time needed to get your project to first production?*

- We recommend that the DOE consider setting multiple dates for production or manufacturing based on the size, age, and existing assets of the company.
 - There is currently a small number of heat pump manufacturing companies and many of these are large multinational companies who have significant existing manufacturing capacity. Larger companies who already have significant workforce and equipment can more quickly utilize funding through the DPA to quickly ramp up production than smaller companies or companies who are using this funding to start their businesses. There should be a portion of the funding that is dedicated towards smaller organizations and startups that have a high potential for creating high-road jobs to ensure they can benefit from this funding opportunity.
 - To determine a few options for realistic start dates, we recommend that the DOE consult a wide range of manufacturers, entrepreneurs, and workforce development groups. This criteria can be determined according to factors such as age, location, and size of the company. Creating multiple start dates can enable

³ *Retrofit New York Program*. New York State Energy Research and Development Authority. <https://www.nyserda.ny.gov/All-Programs/RetrofitNY-Program>

⁴ *Scaling Industrialized Zero-Emissions Retrofits in California and Beyond*, EPC-20-023. 2021. California Energy Commission. <https://www.energy.ca.gov/filebrowser/download/3341>.

smaller and newer companies who show strong potential to provide benefits to disadvantaged communities to still qualify for funding and enter the market.

3. ***Timeline:*** *Based on what is described in the NOI, is there an ideal length of time that you believe will be required to prepare a proposal to DOE from the date the solicitation is announced?*

- We recommend providing **at least** 4-7 months to prepare a proposal to give MWDBEs and/or smaller companies the opportunity to gather materials and conduct the coordination and research that they need to complete to develop a thoughtful community benefits plan and job creation strategy. This outreach is essential to ensure social equity in the process of finding applicants for the grant.
- During this time period, the DOE should offer several information sessions and technical assistance that is available to all applicants. The DOE should tailor technical assistance to answer specific questions that first time applicants may have and provide 1:1 support. This will help first time applicants and companies with less capacity or knowledge about federal grant processes to apply for the funding opportunity.

4. ***Award:*** *Based on what is described in the NOI, do you believe award sizes of up to \$50 million of Federal funds (matched by the recipient) for activities to create or expand domestic industrial capabilities for electric heat pumps is sufficient? If not, what should be the appropriate maximum, and why? Should award maximums be different for each focus area for eligible projects?*

- The DOE should determine awards sizes based on:
 - 1) *Potential to address the needs of disadvantaged communities* - The DOE should prioritize technologies that are more likely to be installed in building types that are characteristic of disadvantaged communities. For example, mini split heaters and heat pump water heaters can greatly advance electrification in multifamily housing. Currently, 60% of multifamily units are occupied by low and moderate income households.⁵ Technologies like district geothermal or Variable Refrigerant Flow (“VRF”) can electrify office and industrial buildings. This can reduce pollution for communities that live near heavily polluting facilities. This potential could be considered in terms of projected benefit metrics consistent

⁵ *Multifamily Affordable Housing Collaborative*. (2022). Department of Energy. <https://www.energy.gov/communitysolar/multifamily-affordable-housing-collaborative>

with DOE's Justice40 policy priorities, such as decreased energy burden in DACs or increased parity in clean energy technology access and adoption in DACs.

- 2) *Job creation potential* - The DOE should give higher amounts of funding to proposals that have the highest potential for high road job creation. This funding acknowledges that it can take additional resources to create and implement a successful inclusive workforce development, hiring, and human resources processes. This potential could be considered in terms of increased clean energy jobs created for individuals from DACs, as estimated in the number of hires from DACs.
- 3) *Federal procurement standards* - The DOE should compare this solicitation with other federal procurement standards to appropriately size grants.
- We recommend that the DOE offer a range of award sizes to ensure that smaller organizations and startups, who do not have the connections and prior experience as larger multinational corporations, have access to the magnitude of funding needed to jumpstart their businesses.

8. Project Selection Criteria: *When considering selection criteria, how should DOE evaluate eligible projects that meet several criteria? What additional information should DOE seek from applicants and include in evaluation to help simplify this evaluation process? What metrics and methods are available for conducting such evaluations?*

We recommend that the DOE do the following to center equity in the selection criteria:

- **[Criteria Language]** - Clearly define and align equity related criteria with DOE's Justice40 Implementation guidance.
 - In Criteria 7, the DOE should clearly define "diversity, equity, inclusion, and accessibility" and "community benefits plan" and make these definitions clear in the solicitation announcement. This is important because applicants need to clearly understand that this is a core criteria of selection and not a "nice to have."
 - Clearer definitions can lead to more specific applications. For example, Greenlining's report on Building a Diverse, Equitable, and Inclusive Cleantech Industry provides some examples of definitions for diversity, equity, and inclusion within the cleantech industry that can be a reference for DOE.⁶
 - These criteria should also be clearly aligned with DOE's Justice40 requirements and benefits methodology, as well as the policy priorities identified by the Office

⁶ Ayub, P., Mohnot, S. (2020). *Building a Diverse, Equitable and Inclusive Cleantech Industry*. The Greenlining Institute. <https://greenlining.org/wp-content/uploads/2021/04/R4-DEI-report.pdf>

of Economic Impact and Diversity. In particular, project applicants should be required to provide a Stakeholder Engagement Plan and other elements of a Justice40 implementation plan as outlined in DOE's "General Guidance for Justice40 Implementation."⁷

- In Criteria 8, the DOE should clearly identify and communicate how the DPA initiative advances specific Justice40 policy priorities in the solicitation announcement. This is important because it will provide more guidance for applicants to understand what the Justice40 priorities are and how their project could advance them.
- In Criteria 9, the DOE should include outreach, incorporation of community feedback, and transparent, two-way communication with affected communities about possible risks and opportunities as part of the requirements of assessing a successful CBP. The company should outline any potential risks (industrial waste or pollution, economic displacement, safety hazards etc) and create plans to mitigate them with community input. The DOE's General Guidance for Justice40 Implementation provides examples and guidelines for conducting an effective community benefit plan. The DOE also has a guide on advancing opportunities for community benefits through energy project development that program implementers could reference when providing technical assistance.⁸
- In Criteria 10-13, the DOE should explicitly include outreach and inclusion of communities impacted by fossil fuel facility closures. This is important because it can help enable the just transition to shift from a conceptual framework to a core part of the design of the DPA program from the very beginning.
- **[Scoring Criteria and DPA Program Design] - Specify how the criteria will advance equitable community investment and apply these principles into the design of the DPA program**
 - The DOE should incorporate the *Greenlined Economy Guidebook's Six Standards for Equitable Community Investment*⁹ in its selection criteria for the DPA to advance proposals that:
 - (1) Emphasize race-conscious solutions
 - While the DOE cannot explicitly use race as a selection criteria, they should still acknowledge and mitigate racial biases in the DPA program.

⁷ Department of Energy General Guidance for Justice40 Implementation. Department of Energy. <https://www.energy.gov/sites/default/files/2022-07/Final%20DOE%20Justice40%20General%20Guidance%20072522.pdf>

⁸ *Guide to Advancing Opportunities for Community Benefits through Energy Project Development*. (2017).The Department of Energy Office of Economic Impact and Diversity. <https://www.energy.gov/sites/default/files/2017/09/f36/CBA%20Resource%20Guide.pdf>

⁹ Cooper, S., & Sanchez, A. (2020).*The Greenlined Economy Guidebook*. The Greenlining Institute. <https://greenlining.org/publications/2020/greenlined-economy/>

This is important because acknowledging racial inequities in the construction and energy industries is the first step in repairing past harms and providing future opportunities to communities of color.

- The DOE should conduct inclusive outreach to institutions and professional societies that serve communities of color (such as Historically Black Colleges and Universities and professional societies such as Association for Blacks in Energy). The DOE should include historical context on racial and economic disparities in the energy industry and how the DPA is an opportunity to mitigate future harms and provide benefits to affected groups during informational sessions on the DPA.
- In the DPA selection process, the DOE should utilize anti-bias training for reviewers. Providing training can reduce unintended bias against groups that traditionally have received less federal funding because of the legacy of past discriminatory federal policies such as redlining.
- (2) Prioritize multi-sector approaches
 - The DOE should prioritize solutions that simultaneously advance multiple benefits (economic, health, social, and environmental) in disadvantaged communities.
 - In the DPA selection process, the selection committee should provide a higher score to programs that have the potential to advance high road job creation in low income communities while improving public health and environmental benefits than programs that only provide one of these projects.
 - In addition to the selection process, the DOE should streamline communications with community members and other stakeholders by combining program outreach for DPA with other DOE programs that provide capital to companies manufacturing clean energy technologies such as programs offered through the DOE's Loans Programs Office,¹⁰ other workforce development and educational grants¹¹, and programs that provide direct benefits to disadvantaged communities such as the Weatherization Assistance Program.¹² This will enable communities and business owners to understand the wide range of opportunities for DOE funding to advance multiple benefits.

¹⁰ *Department of Energy Loan Programs Office*. Department of Energy.
<https://www.energy.gov/lpo/loan-programs-office>

¹¹ *STEM Rising Workforce Opportunities at Department of Energy*. Department of Energy.
<https://www.energy.gov/workforce>

¹² *How to Apply for Weatherization Assistance*. Department of Energy.
<https://www.energy.gov/eere/wap/how-apply-weatherization-assistance>

- (3) Deliver intentional benefits
 - The DOE should avoid unintended consequences of direct investments in low-income communities of color by making sure that they are eligible to participate in the economic and environmental benefits of clean energy technology manufacturing and do not experience any negative environmental or economic impacts such as displacement.
 - In the solicitation language for Criteria 9, the DOE should include more examples of negative social and environmental impacts that are common to many industrial manufacturing processes (potential displacement, increase in criteria air pollutants, etc.) to help prospective applicants respond directly to the ways that their companies will try to mitigate them. The DOE should consult the Transformative Climate Communities guidance for Transformative Elements (Appendix C of the Program Guidelines)¹³ as an example of language to help applicants identify and propose solutions to mitigate potential negative impacts of their projects. For example, Appendix C-2 provides guidelines on example policies to avoid the displacement of very low and low-income households from climate change mitigation projects.
- (4) Build community capacity
 - The DOE should ensure that under-resourced communities are able to apply for, develop and implement clean heat pump manufacturing programs. To achieve this, DOE must require and build in technical assistance, capacity building, and long term training and skills development.
 - The DOE should conduct inclusive outreach and partner with regional networks, programs, state and local agencies, and intermediaries who have existing relationships and experiences building capacity. There are several programs across the country that are aimed towards building community capacity, especially for MWDBEs. For example, the Transformative Communities Program¹⁴ is an example of a program that works closely with community based groups in California to develop long term capacity for communities to apply for and implement climate mitigation programs that also advance other community economic and health goals. The Regional Climate Collaboratives is a grant that provides technical assistance for under-resourced communities in California to

¹³ *Transformative Climate Communities Program Round 5 Draft Program Guidelines FY 2022-2023*, Strategic Growth Council. https://sgc.ca.gov/programs/tcc/docs/20221121-TCC_Round_5_Draft_Guidelines.pdf

¹⁴ *Transformative Climate Communities*. Strategic Growth Council. <https://www.sgc.ca.gov/programs/tcc/>

access funding and resources to plan and implement climate mitigation, adaptation, and resiliency programs.¹⁵ The Massachusetts Supplier Diversity Office has several recommendations for capacity building, financial, and technical assistance for diverse and small businesses.¹⁶ Several states have resources available for small businesses. For example the Governor’s Office in Texas provides resources for Veteran, Minority & Women-Owned Businesses.¹⁷

- (5) Are community-driven at every stage
 - Community-centered investment means lifting up community-led ideas and sharing decision-making power throughout every phase of a program’s goal-setting, needs assessments, outreach, implementation and evaluation. DOE funding should be in service of community identified goals and economic opportunities. DOE should give higher scores for companies that have a clear community-driven process as part of Criteria 7 of the application.
 - The DOE can drive community driven processes in the DPA program’s design by setting an inclusive outreach strategy, including community members in the application review process, encouraging letters of support from trusted community partners in the application process, and aligning the implementation and evaluation process with Justice40 priorities. These technical advisory committee members must be compensated for their time and effort.
 - As part of the awardee selection process, the DOE should have a technical advisory committee that includes representatives from community based groups, community colleges, universities, apprenticeship and workforce training organizations, labor unions, tribal organizations, and MWDBEs. This is important to help provide diverse perspectives in scoring applications to ensure that the process is community-driven. This advisory committee will help score applications and inform the design of the solicitation. State and federal programs currently follow this approach. For example, the California Sustainable Energy Entrepreneur Development Initiative convenes an Equity Committee with representatives from MWDBEs, workforce development organizations,

¹⁵ *Regional Climate Collaboratives*. Strategic Growth Council.

<https://www.grants.ca.gov/grants/regional-climate-collaboratives-program/>

¹⁶ *Capacity Building, Financial and Technical Assistance*. Massachusetts Supplier Diversity Office.

<https://www.mass.gov/info-details/capacity-building-financial-and-technical-assistance>

¹⁷ *Veteran, Minority & Women-Owned Business Resources*. Office of the Texas Governor.

<https://gov.texas.gov/business/page/veteran-minority-women-resources>

and equity focused investors to score applications for seed funding for entrepreneurs advancing clean energy and social equity innovations.¹⁸ The Climate Change Research Program is an example of another state funded grant program that convened an Advisory Committee of environmental justice scholars, public health practitioners, social scientists, and community members to advance equity in the program.¹⁹

○ **(6) Establish paths towards wealth-building**

- The DOE must make sure that the program selects companies that have the potential to generate high road job opportunities in DACs and workforce development support for awardees. To achieve this, the DOE should establish definitions and targets for hiring Disadvantaged Businesses and Disadvantaged Workers to ensure that as much of the funding can reach these specific groups as possible. The Blue Green Alliance provides more analysis on policy tools to help ensure the creation of high road jobs through the Inflation Reduction Act.²⁰
- The DPA should prioritize solutions that advance community-owned assets and infrastructure. The DOE can achieve this in the DPA by including community ownership as a component of Criteria 8, the extent of positive project impacts to the local economy. The projects should provide wealth-building opportunities within disadvantaged groups.
- Greenlining created a resource called the *Clean Mobility Equity Playbook Lessons from California's Clean Transportation Programs* that provides specific examples of how these principles have been incorporated by various clean mobility programs. The report contains a worksheet that the DOE can use to assess whether these six principles are being incorporated into all portions of the program's mission, process, outcomes, and evaluation.²¹

- **[Scoring Weighting] - Ensure that the criteria that prioritize equity are weighted appropriately in the scoring process.**

¹⁸ CalSEED Social Impact and Energy Equity. California Energy Commission. <https://calseed.fund/impact/>

¹⁹ Mohnot, S., Bishop, J., Sanchez, A., (2019). *Making Equity Real in Climate Adaptation and Community Resilience Policies and Programs: A Guidebook*. The Greenlining Institute. <https://greenlining.org/wp-content/uploads/2019/08/Making-Equity-Real-in-Climate-Adaption-and-Community-Resilience-Policies-and-Programs-A-Guidebook-1.pdf>

²⁰ *A User Guide to the Inflation Reduction Act: How New Investments Will Deliver Good Jobs, Climate Action, and Health Benefits*. (2022). Bluegreen Alliance. <https://www.bluegreenalliance.org/site/a-user-guide-to-the-inflation-reduction-act/>

²¹ Creger, H., Aguayo, L., Partida-Lopez, R., & Sanchez, A. (2021). *Clean Mobility Equity Playbook Lessons from California's Clean Transportation Programs*. The Greenlining Institute. <https://greenlining.org/wp-content/uploads/2021/03/Clean-Mobility-Equity-A-Playbook-Greenlining-Report-2021.pdf>

- The reviewers should provide significant weight to Criteria 7-13 and should provide transparency of the weighting to prospective applicants. This weighting should be at least 40% under Section M: Evaluation Factors for Award of the solicitation in line with the Justice40 requirement that 40% of benefits directly go towards disadvantaged communities.
- This criteria should be included in both Section L: Instruction to Offerors, to require bidders to submit documentation verifying how they meet the equity criteria, and Section M: Evaluation Factors of the final solicitation.
- In addition, the DOE should provide bonus points to applicants who are strong on equity related criteria. For example, other federal government agencies provide additional points for applications that have demonstrated experience conducting effective outreach and provided trusted support within disadvantaged communities. For example, the Federal Communications Commission provides bonus points for applicants that have demonstrated trusted relationships with disadvantaged communities and experience conducting inclusive outreach as part of the Notice of Funding Opportunity for the *Affordable Connectivity Outreach Grant Program*.²²

9. Program structure: *Is there anything else to be aware of as DOE designs potential implementation of electric heat pump DPA funding to support U.S manufacturers, developers, and installers?*

- We appreciate that the selection criteria includes workforce, environmental, and social impacts and partnerships. The Center for Community Action and Environmental Justice, which works to bring people together through community organizing for social and environmental justice in the Inland Valley of California, emphasized the importance of the DOE showing transparency, accountability, and commitment to advancing a just transition throughout the process, implementation, and evaluation of the DPA program.²³
- To enhance transparency, accountability, and commitment to just transition, the DOE should more clearly define and incorporate equity into the language of the NOI. We recommend that the DOE takes an “Equity-In, Equity-Out” approach.²⁴
 - For “Equity-In”, the program should have inclusive outreach strategies to bring in diverse companies and communities to the grant program. Having a diversity of

²² *Notice of Funding Opportunity: Affordable Connectivity Outreach Grant Program*. Federal Communications Commission. https://www.fcc.gov/sites/default/files/acp_outreach_grant_program_nof.pdf

²³ Center for Community Action and Environmental Justice. <https://www.ccae.org/requests-for-proposals>

²⁴ *CalSEED Social Impact and Energy Equity*. California Energy Commission. <https://calseed.fund/impact/>

companies is important to spur economic development opportunities for low income communities of color and other underrepresented groups as well as to ensure equitable outcomes. To ensure just transition, the DOE should conduct outreach about this opportunity to communities who will be most economically affected by fossil fuel power plant closings.

- For “Equity-Out” the program should provide support to help participants deliver equitable outcomes through their companies. To be consistent with Justice40 priorities, the DOE must measure the outcomes and structure the program in a way that results in at least 40% of the benefits going directly to DACs.
- Greenlining created a resource called the *Clean Mobility Equity Playbook Lessons from California’s Clean Transportation Programs* that provides specific examples of how these principles have been incorporated by various clean mobility programs. The report contains a worksheet on Page 23 that the DOE should use to assess whether the six principles discussed in our response to Question 8 are being incorporated into all portions of the program’s mission, process, outcomes, and evaluation.²⁵
- The DOE should ensure equitable community investment in the language of the solicitation and in every stage of the DPA program. Please see our response to Question 8 for more detailed recommendations. In summary, the DOE should:
 - **[Language and Scoring Criteria]** - Clearly define scoring criteria and the DPA program design to enable equitable community investment and align with Justice40 priorities.
 - **[Outreach and Technical Assistance]** - Conduct inclusive outreach and provide technical assistance to increase accessibility of this funding opportunity to MWDBEs
 - **[Scoring Weighting]** - Provide at least 40% of weight to equity focused criteria (Criteria 7-13) and give transparency about the weighting to prospective applicants.
 - **[Awardee selection committee]** - Assemble a diverse technical advisory committee (including representatives from disadvantaged communities and MWDBEs) to score applications. These technical advisory committee members must be compensated for their time and effort.
 - **[Program evaluation]** - Integrate program evaluation for the DPA program within the larger context of Justice40 priorities. This is important to ensure that the

²⁵ Creger, H., Aguayo, L., Partida-Lopez, R., & Sanchez, A. (2021). *Clean Mobility Equity Playbook Lessons from California’s Clean Transportation Programs*. The Greenlining Institute. <https://greenlining.org/wp-content/uploads/2021/03/Clean-Mobility-Equity-A-Playbook-Greenlining-Report-2021.pdf>

outcomes from this program are aligned with the overall Justice40 objective of directing at least 40% of benefits to communities.

- In addition to the design of the grant program, the DOE could help ensure equity in the implementation of the DPA program by considering the demand side in addition to the supply side of heat pump deployment. The DOE has the authority to pre-purchase heat pumps through advanced market commitments. This could help generate demand for domestically manufactured heat pumps and bring down prices for the end consumers. DOE could pre purchase heat pumps at a lower cost and deploy them in disadvantaged communities to ensure affordability and access.

B. Domestic Manufacturing, Including Small and Medium Sized Manufacturers (SMM)

12. ***Barriers:*** List the greatest barriers (e.g., financing or market constraints) that DPA tools described in the background can help address in the following areas:

(a). U.S. manufacturing of electric heat pumps:

- The DOE should connect and streamline federal programs that address barriers to heat pump deployment. While the delegated DPA authority focuses on advancing manufacturing, the DOE should include technical assistance on skills such as marketing, outreach, and business development. This is critical to ensuring that manufacturers are equipped to effectively partner with contractors, utilities, and retail outlets who employ and serve residents of disadvantaged communities.

(b). Deployment of electric heat pumps:

- The DOE should coordinate the DPA program with other federal programs that help lower the soft costs of heat pump installations (i.e. contractor training, marketing etc.). These factors contribute greatly to the variability in heat pump price and installation costs, so integrating manufacturers with these programs and resources can help make heat pumps more accessible and affordable, especially for low income communities of color. While the incentives offered through the Inflation Reduction Act can make switching to a heat pump more affordable, the DOE and other federal agencies must invest in proper outreach, education, and support to make sure that the benefits of these incentives reach disadvantaged communities.

20. **Low GWP Refrigerants:** *What are barriers to designing, manufacturing, and using refrigerants with low global warming potential (GWP) in electric heat pumps? What are potential interactions with new equipment efficiency standards and Inflation Reduction Act incentives?*

- The DOE should work with the Environmental Protection Agency’s Significant New Alternatives Policy (“SNAP”) program to mitigate health and safety issues from low-GWP refrigerants. In recent years, major manufacturers of HVAC equipment have been working to develop lower-GWP refrigerants. These refrigerants include hydrocarbons, carbon dioxide, ammonia, water, as well as hydrofluorocarbons (“HFC”) and Hydrofluoroolefin (“HFO”) blends. While some refrigerants have low GWP, they may lead to other concerns such as flammability and toxicity. The SNAP program provides a summary of which refrigerants are approved and the potential tradeoffs of each type of refrigerant. Manufacturers selected through the DPA should work with the SNAP program to make sure that their products are safe throughout the lifecycle of the equipment, including disposal.²⁶
- In addition to guidance from SNAP, the DPA program should utilize incentives available through the Inflation Reduction Act to help make heat pumps that use safe, low-GWP refrigerants widely available. Since disadvantaged communities have often borne the brunt of exposure to industrial waste, it is especially important that the DOE consider how to responsibly manufacture, install, repair, and retire HVAC equipment to make sure that there are no negative health impacts from refrigerant leakage.
- In addition, the DOE should provide training to installers to minimize leakage during installation and repairs, especially for types of heat pumps that have high volumes of high-GWP refrigerants. Systems with more field-connected refrigerant distribution piping and longer refrigerant runs (such as VRF systems) have a higher risk of leakage than systems using air or water for distribution. The refrigerant lines within the heat pump equipment should be assembled carefully and leak-tested to make them less susceptible to failure.²⁷ Designers should consider leakages when specifying mechanical systems. Installers should be trained to minimize refrigerant losses during and ensure field-assembled piping is properly installed to minimize leaks. If refrigerants leak, it is

²⁶ *Transitioning to Low-GWP Alternatives*. U.S. Environmental Protection Agency. https://www.epa.gov/sites/default/files/2016-12/documents/international_transitioning_to_low-gwp_alternatives_in_commercial_refrigeration.pdf

²⁷ Robbins, L. DelForge, P. 2019. *Heat Pump Retrofit Strategies for Multifamily Buildings*. prepared for Natural Resources Defense Council by Steven Winter Associates, Inc. <https://www.nrdc.org/sites/default/files/heat-pump-retrofit-strategies-report-05082019.pdf>

possible that the benefits of switching to a low-GWP refrigerant would be effectively erased while potentially leading to health and safety issues such as toxicity or flammability. Wherever possible, VRF systems should utilize low GWP refrigerants to avoid additional costs associated with replacing refrigerant lines. Since VRF systems can help decarbonize polluting commercial facilities, this is an important issue to solve to ensure benefits to disadvantaged communities.

C. American Workforce Investment

22. **Workforce programs:** *What workforce training programs or partnerships (for instance, employer/community college/labor consortia, on-the-job training, private sector training providers, sector strategies) do you think will be useful to support creation of workforce needed for electric heat pump manufacturing and installation? What unions, worker groups, economic development centers, professional societies, community-based organizations, (post)secondary education facilities, and other stakeholders could be valuable partners in these training activities? Please fill out the chart below and add rows as needed.*

Electric heat pump Project	Labor skills need	Training programs/ partnerships to address need	Key Partners
<i>Identify a project that can be supported by DPA tools (e.g., manufacturing of X material or component for electric heat pump)</i>	<i>List the labor skills needed to support manufacturing or installation of electric heat pumps</i>	<i>Identify training programs and type of partnerships needed to address these labor skills e.g., apprenticeship training program</i>	<i>Identify the key partners needed</i>
The DOE should include technical assistance on business skills	Workers should receive marketing, outreach and business development training to ensure that manufacturers are equipped to effectively partner with	Economic development centers, professional societies, community-based	Key partners will vary across regions; in addition to the national partners listed out below, the DOE should also

	contractors, utilities, and retail outlets who employ and serve residents of disadvantaged communities. The DOE should provide support and resources specifically for small, women, and BIPOC installers and contractors.	organizations, community colleges, universities, state workforce training programs	partner with regional and local organizations to ensure equity in the process and diverse representation in the technical advisory committee.
The DOE should support training for heat pump installers to build the installation pipeline.	Training (including pre-apprenticeship, certification, and union-affiliated programs) should provide technical skills as well as cultural competency and anti-bias education. This training should align with DOE efforts to hire from Disadvantaged Businesses and Disadvantaged Workers.	Professional societies, utility programs, HVAC training groups, community-based organizations, community colleges, universities, state workforce training programs	
Quality control	Training should ensure proper quality control to avoid refrigerant leakage or any other health and safety concerns.	Community colleges, universities, state workforce training programs, HVAC training groups	
Integration with other building systems upgrades and coordinate with energy auditor training programs	Training should provide basic knowledge of energy efficiency/weatherization/electric wiring and theory	Economic development centers, professional societies, community-based organizations, community colleges,	

		universities, state workforce training programs	
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Key Partners

- The DOE should partner with a variety of workforce development organizations to help build the workforce across different geographies and communities. We have provided an initial, non-comprehensive list of potential partners below to provide examples of the types of organizations that the DOE should consider partnering with:
 - Examples of international/national/multi-state organizations to partner with:
 - Solar Energy International²⁸ - International nonprofit that provides solar and electrician training to communities
 - Emerald Cities Collaborative HVAC Contractor Academy²⁹ - National nonprofit network of organizations working together and providing policy and workforce training programs to advance a sustainable environment while creating sustainable, just and inclusive economies with opportunities for all
 - Elevate³⁰ - National nonprofit that provides workforce and business development opportunities to developing and diverse workforce
 - Community Action Partnerships³¹ - National nonprofit that provides direct services like health and safety upgrades and weatherization to communities
 - Green City Force³² - Non-profit focused on training public housing residents into the clean energy workforce
 - Examples of regional/local organizations to partner with:
 - Richmond BUILD³³ - City of Richmond program that works with majority low income people of color and many who were formerly incarcerated

²⁸ Solar Energy International. Retrieved from: <https://www.solarenergy.org/>

²⁹ Emerald Cities Collaborative. E-Contractor Academy. Retrieved from: <https://emeraldcities.org/our-work/e-contractor-academy/>

³⁰ Elevate Energy. Retrieved from: <https://www.elevatenp.org/>

³¹ Community Action Partnerships. Retrieved from: <https://communityactionpartnership.com/>

³² Green City Force. Retrieved from: <https://greencityforce.org/>

³³ Richmond California. RichmondBUILD Academy. Retrieved from: <https://www.ci.richmond.ca.us/1243/RichmondBUILD>

- Rising Sun Center for Opportunity³⁴ - Nonprofit working in the Bay Area region providing pre-apprenticeship and apprenticeship programs including Opportunity Build
- Laney College³⁵ - Community college with an Environmental Technologies Program providing degrees and certificate programs
- ReWork the Bay³⁶ - Regional nonprofit that partners with funders and workforce leaders to promote education and collaboration in the Bay Area so that everyone has access to quality, empowered jobs
- BayREN³⁷ - Regional energy network offering energy and building training to a variety of stakeholders including contractors, building managers, and city employees
- Cypress Mandela³⁸ - Community based organization that offers free 16 week pre-apprenticeship training
- Construction Trades Workforce Initiative (CTWI)³⁹ - Workforce development nonprofit that works to bridge the gap between organized labor and key stakeholders

23. *Labor standards and project selection criteria:* *What specific labor standards and project selection criteria should guide the federal government in deciding which manufacturing firms benefit from electric heat pump DPA funding? These might include worker wages and benefits, access to unions, training opportunities, labor-management training programs, health and safety committees, or recruitment programs. What kinds of programs or partnerships do you participate in (or would you recommend) to support worker recruitment and retention in electric heat pumps?*

- We agree that the DOE should consider prevailing wages and benefits, access to unions, training opportunities, labor-management training programs, health and safety committees, or recruitment programs.
- Furthermore, the DOE should consider aligning prevailing wage and apprenticeship requirements with applicable tax credits, such as §48C.
- Building on these suggestions, we recommend that DOE emphasize the role of partnerships in ensuring equity in developing the labor standards and project selection

³⁴ Rising Sun Center for Opportunity. Retrieved from:

<https://risingsunopp.org/programs/opportunity-build/join-opportunity-build/>

³⁵ Laney College. Environmental Control Technology. Retrieved from: <https://laney.edu/ect/>

³⁶ *Rework the Bay*. <https://reworkthebay.org/>

³⁷ Bay Area Regional Energy Network. <https://www.bayren.org/>

³⁸ *Free Training For High Paying Careers*. Cypress Mandela. <https://www.cypressmandela.org/programs>

³⁹ *Construction Trades Workforce Initiative*. <https://ctwi-btca.org/>

criteria. From our research on workforce development programs in California, we recommend that the DOE work with organizations adhere to these general principles:⁴⁰

- **1. Prioritize partnerships across programs:** Partnerships across programs, agencies and training providers have proven to improve employment outcomes for populations with higher barriers to employment than a single pipeline program itself.
- **2. Follow the Multi Craft Core Curriculum (MC3):** MC3 curriculum is a comprehensive pre-apprenticeship training curriculum that rigorously prepares trainees for adaptability in jobs thus creating a pathway for success in the trades.
- **3. Utilize Project Labor Agreements (“PLAs”) and Community Workforce Agreements (“CWAs”):** The DOE should encourage engaging with PLAs and CWAs (see Seattle example below) that promote quality jobs and family sustaining wages to ensure equity in implementation. The DOE should also consider incorporating training programs within PLAs to streamline resources.
- **4. Orient toward broad occupational training:** Orienting toward earn-as-you-learn apprenticeship training for broad occupational skills provides a range of career opportunities as opposed to training for specific tasks related to clean energy.
- **5. Prepare students for Union apprenticeships:** The DOE should provide training geared toward success in union apprenticeships that put them on a pathway to a career with family sustaining wages and benefits instead of providing project by project jobs without job security.
- **6. Establish formal agreements with apprenticeship programs:** When agreements are created between apprenticeship programs and employers, the students benefit from the removal of certain entry cost barriers.
- **7. Provide additional support to address multiple challenges:** Funding needs to be available to support additional challenges that workers with high barriers to employment face such as transportation, homelessness, racism, hunger etc.
- With these principles in mind, the DPA program should provide technical assistance to help manufacturers partner with cities on workforce development to stimulate local economies in the long term.
- These partnerships can help create pipelines of local workers and help cities meet their climate action plans and economic development goals. There are several examples of cities in diverse political contexts that have implemented inclusive workforce measures at the local level.
- Here are some examples of inclusive city-led workforce development:

⁴⁰ *Research Highlights: Bay Area Green Infrastructure Jobs for Populations with High Barriers to Employment.* The Greenlining Institute. <https://drive.google.com/file/d/1C3w15kj2sZ4ttZ1dJxL9S1zgWRFUJ0Gy/view>

- Boston⁴¹
 - The Mayor of Boston took action to promote economic development for minority and women-owned businesses with an executive order following a study of employment related disparities in the city.
 - To support the city’s objectives, The Emerald Cities Collaborative created the Boston Contractor Academy that provides free contractor training to disadvantaged contractors to improve diversity and inclusion in the HVAC industry.
- Seattle⁴²
 - The city entered into a CWA with the local trade alliance to ensure consistent working conditions for construction workers
 - The CWA created a Priority Hire program which required a percentage of the labor hours on city projects worth \$5 million or more be performed by workers from economically distressed neighborhoods.
 - The CWA also required that 15% of city construction labor hours must be performed by apprentices.
 - The DOE should consult these organizations and cities to develop partnerships that promote diversity, equity, and inclusion in contracting for heat pump manufacturing and installation.
- In addition to partnerships with cities, we recommend that the DOE build partnerships with and consider frameworks and recommendations from organizations leading on high road jobs and climate. For example, the DOE should consider:
 - The BlueGreen Alliance’s Solidarity for Climate Action⁴³ platform for guidance on high quality jobs in climate action. The platform calls for:
 - Increased union density as a pathway forward to quality jobs and a family-sustaining livelihood
 - Raising labor standards in the non-construction sectors, such as improved wages and benefits and prioritizing full-time work
 - Setting mandatory labor standards including PLAs, community benefit agreements, local hire, and respect for collective bargaining agreements

⁴¹ Cha, Mijin, Dr. J, Devlin, Aria, & Conroy, J. *Winning on Climate: Case Studies of Cities Centering Economic Inclusion*. https://emeraldcities.org/wp-content/uploads/2022/05/CET-Report_Final_2022-04-27-1.pdf

⁴² Inclusive Economics. (2021). High-Road Workforce Guide for City Climate Action. 64. https://www.usdn.org/uploads/cms/documents/workforce-guide_4.12.21_form.pdf

⁴³ BlueGreen Alliance. Solidarity for Climate Action. <https://www.bluegreenalliance.org/work-issue/solidarity-for-climate-action/>

- PolicyLink and Emerald Cities Collaborative’s guidance on Inclusive Procurement and Contracting.⁴⁴
- The guide calls for:
 - Strengthening the constituency for and advocacy efforts around MWDBEs
 - Developing a community of practice with inclusive procurement policy toolkits by sector
 - Developing accountability and reporting mechanisms to monitor and improve MWDBE participation rates
- The Urban Sustainability Directors Network has developed a toolkit that local governments can use for building decarbonization programs specifically that includes guidance on workforce development.⁴⁵
- The Emerald Cities Collaborative provides recommendations on how to enhance diversity in building electrification and provides some lessons learned in San Francisco.⁴⁶
- The DOE can ensure that manufacturing is integrated within a more holistic vision for equitable building decarbonization by incorporating lessons learned from these frameworks and case studies and consulting the groups that led these projects.

24. *Other considerations:* *Is there anything else to be aware of as DOE designs implementation of the electric heat pumps DPA program to support the creation of high-quality jobs and high-road workforce development needed for the electric heat pump industry?*

- The DOE should build from successes and lessons learned from California Workforce Development Board’s High Road Training Partnership (H RTP) program⁴⁷ across the areas of equity, climate resilience, and job quality in evaluating the DPA program. The H RTP model:

⁴⁴ Fairchild, Denise. Rose, Kalima, Tell, Brian. (2018). Inclusive Procurement and Contracting: Building a Field of Policy and Practice.

https://emeraldcities.org/wp-content/uploads/2021/06/Inclusive-procurement_02.21.18-002-1.pdf

⁴⁵ *Equity in Buildings* (2021). The Urban Sustainability Directors Network.

https://emeraldcities.org/wp-content/uploads/2021/09/usdn_equity_and_buildings_framework_-_june_2021.pdf

⁴⁶ *The Building Electrification Equity Project*. (2020). The Emerald Cities Collaborative.

https://emeraldcities.org/wp-content/uploads/2021/09/usdn_equity_and_buildings_framework_-_june_2021.pdf

⁴⁷ Gonzalez-Vasquez, Ana Luz, Magaly, N. Lopez. (2021). The High Road to Economic Prosperity. *UCLA Labor Center*. https://www.labor.ucla.edu/wp-content/uploads/2021/05/Eval-Report_The-High-Road_UCLA-Labor-Center_FINAL.pdf

- Builds collective power, offers a more inclusive definition of industry leadership, and places systemic issues at the forefront
- Responds to change and shifts workforce development assessment to more qualitative measures
- Can be further improved through communities of practice and alignment with the workforce development system
- In addition, the DOE should consult state agencies that have demonstrated strong contracting practices with MWDBEs and replicate best practices.
 - For example, the California High-Speed Rail Authority has commissioned work from 653 small businesses including 213 Certified Disadvantaged Business Enterprises including 155 small businesses in disadvantaged communities, resulting in over 6,000 construction jobs in the Central Valley of California.⁴⁸
- The DOE should look at manufacturing and workforce recommendations for related sectors such as in the transportation industry and apply best practices to heat pump manufacturing. For example, a Greenlining and UCS report on electric vehicle workforce development and manufacturing has the following recommendations:⁴⁹
 - California’s electric truck and bus manufacturers should support the development of formal training pathways for new workers from underserved communities so they can access employment in this emerging field
 - California’s government agencies should invest in skill-development programs aimed at training jobseekers in underserved communities to fill the emerging employment needs in the heavy-duty EV industry
- The DOE should also research other heat pump markets that are more well developed (Europe and Asia) to incorporate best practices and avoid practices that harm workers
 - For examples, one study⁵⁰ from Norway notes that the design and execution of ground source heat pumps require technical expertise from various fields and the government should develop more training programs to bring in more qualified people.

D. Energy and Environmental Justice, and Economic Benefit

⁴⁸ *The High-Speed Rail Project*. California High-Speed Rail Authority. <https://www.caclimateinvestments.ca.gov/hsr>

⁴⁹ Chandler, Sara, Espino, Joel, O’Dea, Jimmy. (2017). *Delivering Opportunity: How Electric Buses and Trucks Can Create Jobs and Improve Public Health in California*.

<https://www.ucsusa.org/sites/default/files/attach/2016/10/UCS-Electric-Buses-Report.pdf>

⁵⁰ Sadeghi, Habibollah, Ijaz, Amir, Singh, Martand Rao. (2022). Current status of heat pumps in Norway and analysis of their performance and payback time. *Sustainable Energy Technologies and Assessments*, 54, 9.

<https://doi.org/10.1016/j.seta.2022.102829>

25. Project prioritization: Which project types should electric heat pump DPA funding prioritize to assist underserved and underrepresented individuals and communities around the United States in obtaining the benefits of electric heat pumps? What criteria should DOE use to select these projects? Please fill out the chart below and add rows for multiple entries as needed.

Project	Manufacturing project impact	DPA tool (s)	Level of investment (in U.S. dollars)	Selection criteria
<i>Identify a project that can be supported by DPA tools (e.g., manufacturing of X material or component for electric heat pump)</i>	<i>Identify possible DPA tool(s) that could be applied to this project (e.g., purchases; purchase commitment; financial assistance)</i>	<i>Identify the impact this project will have (e.g., add X production capacity, create X jobs, lower cost of energy by X dollar amount etc.)</i>	<i>Identify the ideal investment level needed for this project</i>	<i>Identify the criteria that DOE should consider in selecting this type of project</i>
Ductless minisplit air source heat pumps	Financial assistance, purchases, purchase commitment	Minisplit air source heat pumps can be widely used in typologies such as multifamily affordable housing and mobile homes without needing to rely on ductwork. This is particularly useful for buildings that use steam for space heating. ⁵¹	Depends on size of systems and scale of production	Safety, affordability, ease of installation, applicability to building typologies that disproportionately serve disadvantaged communities

⁵¹ Robbins, L. DelForge, P. 2019. *Heat Pump Retrofit Strategies for Multifamily Buildings*. prepared for Natural Resources Defense Council by Steven Winter Associates, Inc. <https://www.nrdc.org/sites/default/files/heat-pump-retrofit-strategies-report-05082019.pdf>

District geothermal	Financial assistance, purchases, purchase commitment	District geothermal systems could reduce air pollution in industrial applications and is a potential way to reuse existing gas infrastructure for residential heating and cooling ⁵²	Depends on size of systems and scale of production	Safety, affordability, ease of installation, applicability to building typologies that disproportionately serve disadvantaged communities, ability to reuse existing gas infrastructure
Low-GWP, low-voltage heat pump water heaters	Financial assistance, purchases, purchase commitment	Heat pump water heaters are essential to decarbonizing low-income housing. Incentivizing CO2 refrigerant units can make them more affordable and accessible. Heat pump water heaters can either be central or split systems. ⁵³	Depends on size of systems and scale of production	Safety, affordability, ease of installation, applicability to building typologies that disproportionately serve disadvantaged communities

26. **Economic benefits:** How can electric heat pump DPA funding provide the greatest opportunity to create broad regional economic benefits including economic diversification, tax revenues, and economic cluster effects?

⁵² Networked Geothermal. HEET MA. <https://heet.org/geo/>

⁵³ Robbins, L. DeForge, P. 2019. *Heat Pump Retrofit Strategies for Multifamily Buildings*. prepared for Natural Resources Defense Council by Steven Winter Associates, Inc. <https://www.nrdc.org/sites/default/files/heat-pump-retrofit-strategies-report-05082019.pdf>

- The DOE should prioritize technologies that are more likely to be installed in building types that are characteristic of disadvantaged communities. Renters and commercial multifamily buildings serving low-income residents have less policy support for energy efficiency and electrification through the Inflation Reduction Act than middle-income and homeowners. Investments manufacturing through the DPA program can help fill that gap. Please refer to our response to Question 25 for more details. Our response to Question 25 provides an initial (not comprehensive) list of technologies that the DOE could consider prioritizing through the manufacturing process.
- In addition to manufacturing, the DOE should provide a streamlined resource on all federal government programs that will procure heat pumps and help create partnerships with state and local governments. These partnerships can enable unit cost reductions from bulk procurement and greater economies of scale. It is important that the DOE coordinate across all of its programs aimed towards improving heat pump adoption to make sure that disadvantaged communities have access to affordable and reliable products and services. To achieve this goal of increased access for disadvantaged communities, the DOE should:
 - Support professional development opportunities for workforce development and highlight opportunities within the heat pump manufacturing industry and provide education on heat pump distribution and installation as well.
 - Streamline all federal, state, and local programs to reduce inefficiencies and promote more economic diversification, tax revenues, and economic cluster effects
 - Provide connections and strategies for manufacturers to form partnerships with local contractors and service providers for other federal, state, regional, and local government programs
 - Provide support to foster collaboration within the HVAC industry across companies that work in manufacturing, marketing, distribution, installation, repairs, and disposal

27. Re-using infrastructure: *How can electric heat pump DPA funding encourage reuse/leverage existing industrial infrastructure?*

- It is essential to have a community driven process to ensure that communities can avoid any new health and safety concerns, mitigate past harms, and realize the full benefits of new economic opportunities. The DOE should include communities in the process of identifying and mitigating any negative impacts from closing fossil fuel or other industrial

facilities. Community preferences must be the first priority in the decision to leverage or reuse existing industrial infrastructure.

- If appropriate, the DOE should use DPA financial assistance authority to support companies in remediating and repurposing industrial sites to meet health and safety standards before manufacturing heat pumps. NYSERDA's Just Transition Site Reuse Planning Program is one example of a program that is designed to provide communities with planning services to inform future decision making at the local level to help mitigate any negative impacts of pending or future fossil fuel power plant closures.⁵⁴ NYSERDA provides technical assistance to communities on site evaluation, economic analysis, stakeholder input, alternative reuse plans, demolition and abatement, and public health impacts. They have follow-on funding available for communities and developers to consider pre-development environmental site access, detailed infrastructure assessment, and workforce development. The DOE should consider offering similar services for a wider range of potential industrial infrastructure that could be repurposed to produce heat pumps through the financial assistance provision in DPA or connect awardees with other similar programs.

28. Regional clusters: *How can electric heat pump DPA funding support creation of “regional clusters” of electric heat pump manufacturing in underserved communities and communities where the economy is currently highly dependent on fossil fuel production (such as coal communities) to transform their economy in the next 5 to 10 years? If possible, please include information explaining your answer.*

- The DOE should consult and collaborate with affected communities and follow the *Just Transition Alliance's Just Transition Principles* (listed below):⁵⁵
 - 1. Workers, community residents, and Indigenous Peoples around the world have a fundamental human right to clean air, water, land, and food in their workplaces, homes and environment.
 - 2. There is no contradiction among simultaneously creating sustainable development, having a healthy economy and maintaining a clean and safe environment.
 - 3. Liberalization of environmental, health and labor laws and corporate globalization -- know no borders. Therefore, solutions call for local, regional, national, and global solidarity.

⁵⁴ *Just Transition Site Reuse Planning Program*. New York State Energy Research and Development Authority. <https://www.nyserra.ny.gov/All-Programs/Just-Transition-Site-Reuse-Planning-Program>

⁵⁵ *Just Transition Principles*. Climate Justice Alliance. <https://climatejusticealliance.org/just-transition/>

- 4. The development of fair economic, trade, health and safety and environmental policies must include both the frontline workers and frontline communities most affected by pollution, ecological damage, and economic restructuring.
- 5. The costs of achieving sustainable development, a healthy economy and clean environment should not be borne by current or future victims of environmental and economic injustices and unfair free trade policies.
- 6. Workers and community residents have the right to challenge any entity that commits economic and/or environmental injustices. These entities include governments, the military, corporations, international bodies, and mechanisms for securing corporate accountability.
- We recommend that the DOE consult local and state governments and community based groups to learn from best practices on just transition for fossil fuel workers at the state and local levels.
 - For example, the California Workforce Development Board created a *Regional Workforce Strategies in Contra Costa Project* to ensure that communities and workers in Contra Costa County who are most impacted by the transition from fossil fuels to a clean economy are prepared for the future.⁵⁶ This was a collaborative partnership between non-profit organizations, state agencies, environmental justice groups, labor unions, research institutions, consultants, and state agencies.
 - Another example is the Edge Collaborative that is convening a wide variety of partners to advance climate justice, technological innovation, and high quality economic opportunities across the energy and environmental sector in Stockton.⁵⁷
 - The DOE should similarly convene a range of stakeholders and use community input to determine how to use DPA authority to spur local manufacturing in communities specifically impacted by fossil fuel plant closures and other disadvantaged communities more broadly.

29. *Impacts of heat pump manufacturing and deployment:* How could securing the national supply chain and increasing manufacturing and deployment of electric heat pump impact underserved, overburdened, and frontline communities (“disadvantaged communities”)?

⁵⁶*Regional Workforce Strategies in Contra Costa County.* California Workforce Development Board. https://cwdb.ca.gov/wp-content/uploads/sites/43/2021/04/2021.HRTP_.BGA_ACCESSIBLE.pdf?emrc=43e649

⁵⁷ *Climate & EJ: Building a future green economy that centers justice + jobs.* Edge Collaborative. <https://edgecollaborative.org/climate>

(a). What could be the positive impacts of electric heat pump manufacturing projects supported by DPA authority? (For example: jobs, community enrichment development, research opportunities).

- Increased electric heat pump manufacturing has many benefits including:
 - **[More economic opportunities]:** Domestic heat pump manufacturing can lead to more high road jobs which can ensure that disadvantaged communities enjoy the economic benefits associated with the clean energy transition.
 - The clean energy workforce is growing quickly and continues to provide tremendous economic opportunity. The clean energy industry employed nearly six times as many workers compared to the number of employees who work in fossil fuel extraction and generation in 2021.⁵⁸ Furthermore, median hourly wages for clean energy jobs are almost 30% higher than the statewide median wage. However, only 8% of the clean energy workforce are Black, 16.5% are Latinx, and 27% are women.⁵⁹ If designed and implemented well, the DPA can ensure that disadvantaged communities and underrepresented groups are included from the start in the clean energy economy.
 - **[Public health]:** Heat pumps can also reduce indoor and outdoor air quality and reduce health impacts from extreme heat.
 - Commercial and residential buildings were responsible for over 18,000 early deaths and \$205 billion in health impacts in the United States in 2017.⁶⁰ Switching to heat pumps can reduce emissions while also reducing the need for polluting peaker plants that are disproportionately located in low-income communities of color.⁶¹
 - Providing efficient heating through heat pumps can also reduce heat related illnesses and deaths, especially for groups such as the elderly and individuals with existing health conditions.⁶² Currently lack of

⁵⁸ *America's Clean Energy Powerhouse in the Wake of Covid-19*. E2.

<https://e2.org/reports/clean-jobs-california-2021/>

⁵⁹ Hsieh, E, *Climate Tech's Inclusion Problem*. Canary Media. <https://www.youtube.com/watch?v=xGHX0TtXvc0>

⁶⁰ Buonocore, J. J., Salimifard, P., Michanowicz, D. R., & Allen, J. G. (2021). *A decade of the US energy mix transitioning away from coal: historical reconstruction of the reductions in the public health burden of energy*. *Environmental Research Letters*, 16(5), 054030.

⁶¹ *The Peaker Problem: An Overview of Peaker Power Plant Facts and Impacts in Boston, Philadelphia, and Detroit*. The Clean Energy Group and Strategen.

<https://www.cleangroup.org/wp-content/uploads/The-Peaker-Problem.pdf>

⁶² *Protecting Californians with Heat-Resilient Homes*. UCLA Luskin Center for Innovation.

<https://innovation.luskin.ucla.edu/wp-content/uploads/2022/07/Protecting-Californians-with-Heat-Resilient-Homes.pdf>

air-conditioning rates in communities of color are 2-4 times that of White communities around major metro areas.⁶³ Therefore, equitable heat pump deployment could provide much needed health benefits to low income communities of color.

- **[Energy affordability]:** Heat pumps can potentially also reduce energy bills especially in cases where residents are switching from inefficient electric resistance, fuel oil, or propane systems. However, it's important that tenant protections are in place to ensure that any upfront costs from heat pump adoption are not passed on to tenants. Also in places where electric rates are very high, it's important to ensure energy affordability and streamline any heat pump adoption program with other benefits such as weatherization and low income energy bill assistance programs to avoid increasing energy bills.
- **[Community Ownership]:** Government agencies have the opportunity to work in partnership with communities to increase community agency and ownership through building decarbonization.

(b). What could be the negative impacts of electric heat pump manufacturing projects supported by DPA authority, and how can DOE alleviate these negative impacts? (For example: pollution, potential exacerbation of existing harms to communities hosting these industries).

- Increased manufacturing could create more air pollution, exacerbate potential economic displacement, and result in health and safety concerns for communities and workers.
- The DOE should ensure that potential negative impacts are researched, communicated, acknowledged, and addressed in the community engagement plan and CBP. Otherwise, we risk perpetuating industrial pollution and creating low road jobs.
 - The DOE should require companies to disclose any negative impacts publicly to enhance transparency and should support them in finding ways to mitigate some of these impacts. Companies should be trained on appropriate ways to solicit and incorporate community feedback in a respectful and non-extractive way.
 - For example, DOE should fund and support companies in creating a life cycle assessment analysis to reduce embodied carbon and criteria pollution during the supply chain of the heat pumps. They should consider the supply chain for materials such as refrigerants, steel, and copper and attempt to minimize negative health and environmental impacts. In addition to raw materials, the

⁶³ Mann, R. Schuetz, J., As extreme heat grips the globe, access to air conditioning is an urgent public health issue. The Brookings Institution.
<https://www.brookings.edu/blog/the-avenue/2022/07/25/as-extreme-heat-grips-the-globe-access-to-air-conditioning-is-an-urgent-public-health-issue/>

DOE should work with other programs to incentivize clean shipping where possible to reduce emissions associated with transportation and distribution.

(c). Are there any legal, policy, economic, or environmental barriers that would prevent disadvantaged communities from benefiting from DPA activities?

- Many MWDBEs do not have the startup capital and operational support to start a business in the heat pump manufacturing industry or to apply for grants or other financial assistance.
 - The DOE should consider providing technical assistance (available for all) to clarify the DPA application process and provide support for community members and small companies to apply for grants. Please see our response to Question 8 for more information on capacity building programs.
- Permitting is often a barrier for contractors and manufacturers. The DOE should provide support to clarify and streamline the permitting process and other regulatory or administrative processes to lower barriers of access to joining the heat pump industry.
- The DOE must make the process for outreach, selection, implementation, and evaluation as transparent as possible to make sure that communities know about funding and employment opportunities and have the training and support to succeed.
- The DOE should provide training and support to awardees on developing and implementing a CBP and on social equity topics such as supply chain diversity, internal DEIA practices, and equitable building decarbonization programs and policy.
 - It is essential that the DOE provides technical assistance to help companies who are selected for DPA to follow through on their equity goals. To make equity real, companies need to be selected carefully that demonstrate commitment to creating and implementing a CBP. The awardees need support from DOE after the grant is awarded to demonstrate progress towards achieving the provisions in a CBP and internal DEIA practices.
 - If companies do not follow through on their stated equity goals, this can damage trust with communities. Companies must be held accountable to mitigating against poor labor practices, health and safety concerns, and environmental hazards in disadvantaged communities.

30. *Justice40 Goals:* *What equity goals based on Justice40 DOE priorities should DOE prioritize in carrying out DPA projects for electric heat pumps and how can potential projects best help meet these goals? (For example: reducing energy cost and burden; minimizing environmental impacts; diversity, equity, inclusion, and accessibility in workforce and supply chains;*

stakeholder engagement; and implementation of President Biden’s goal that 40% of the benefits of investments in climate and clean energy flow to disadvantaged communities (the Justice40 Initiative)).

- The DOE should coordinate evaluation of the DPA funding within the context of the DOE’s larger Justice40 criteria and priorities and Equity Action Plan.
 - The most relevant Justice40 policy priorities identified by DOE’s Office of Economic Impact and Diversity are:⁶⁴
 - Decrease energy burden in disadvantaged communities (DACs).
 - Increase parity in clean energy technology (e.g., solar, storage) access and adoption in DACs.
 - Increase clean energy enterprise creation and contracting (MWDBEs) in DACs.
 - Increase clean energy jobs, job pipeline, and job training for individuals from DACs.
 - Increase energy resiliency in DACs.
 - Increase energy democracy in DACs.
 - The most relevant DOE Equity Action Plan strategic equity goals are:⁶⁵
 - Increasing opportunities for new applicants to DOE funding opportunities
 - Increasing participation in DOE R&D and financial assistance programs
 - Expanding strategic tribal and stakeholder engagement across DOE programs
- The DOE should track whether the DPA advances the priorities set in the interim guidance as part of the program evaluation criteria. The DOE should prioritize the “Training and Workforce Development” benefits outlined in the interim guidance published on Justice40:⁶⁶
 - Training and Workforce Development
 - Increased participation in clean energy good job training and subsequent good job placement/hiring, including providing the free and fair chance to join a union and collectively bargain.

⁶⁴ U.S. Department of Energy General Guidance for Justice40 Implementation. U.S. Department of Energy, <https://www.energy.gov/sites/default/files/2022-07/Final%20DOE%20Justice40%20General%20Guidance%20072522.pdf>

⁶⁵ U.S. Department of Energy’s Equity Plan, U.S. Department of Energy, https://www.energy.gov/sites/default/files/2022-04/DOE%20Equity%20Action%20Plan_Letterhead.pdf

⁶⁶ Interim Implementation Guidance for the Justice40 Initiative. (2022). Executive Office of the President Office of Management and Budget. <https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf>

- Increased participation in good job training programs that target participation from disadvantaged communities, including formerly incarcerated individuals and youth transitioning out of foster care
 - Increased climate-smart training, including training to identify waste, efficiencies, and GHG inventories.
 - Increased percentage of good job training programs within energy communities, such as those that include paid employment and that measure and report participant outcomes
- In addition to the DOE’s own internal guidance, the DOE should refer to research and case studies by community based groups, BIPOC led advocacy groups, and workforce development organizations leading on high road job creation and equity to develop evaluation criteria for awardees. There are several examples of work by and for community based groups and workforce development organizations cited throughout this comment letter. Here are a few additional resources that the DOE should consider in all of its heat pump adoption programs:
 - The Just Solutions library is a good starting place for policy recommendations from BIPOC-Frontline communities.⁶⁷
 - The Greenlining Institute’s Equitable Building Electrification Framework provides an example of a community led electrification pilot programs.⁶⁸
 - The Building Energy, Equity, and Power (BEEP) Coalition’s *Community Priorities for Equitable Building Decarbonization* is a good example of community based groups sharing recommendations on their vision for community driven and equitable building decarbonization.⁶⁹

31. *Additional comments:* *Is there anything else that the government should be aware of as DOE designs implementation of electric heat pump DPA program to ensure projects benefit the American public, support underserved communities, and do not cause unintended harm to the environment or communities?*

⁶⁷ *Solutions Library*. Just Solutions Collective. <https://www.justsolutionscollective.org/solutions-library>

⁶⁸ Miller, C. Sevier, I., Hu, L., & Chen, S. (2019). *Equitable Building Electrification: A Framework For Powering Resilient Communities*. The Greenlining Institute. <https://greenlining.org/publications/reports/2019/equitable-building-electrification-a-framework-for-powering-resilient-communities/>

⁶⁹ *Community Priorities for Equitable Building Decarbonization*. The Building Energy, Equity, and Power Coalition, https://ww2.arb.ca.gov/sites/default/files/2022-03/BEEP%20Letter%20and%20Report_Equitable%20Decarb%20Mach%202022.pdf

The DOE should officially include the DPA as a DOE Justice40 Covered program and list this on the Office of Economic Impact and Diversity's website.⁷⁰ Officially including DPA as a DOE Justice40 covered program will enhance accountability and transparency and will enable advocates and community members to more easily track the implementation of the program. This will also give DPA awardees clarity on the criteria for program selection and evaluation.

IV. CONCLUSION

The Greenlining Institute, Center for Community Action and Environmental Justice, Just Solutions Collective, Verde, Rewiring America, 350.org, Climate + Community Project, and Kinetic Communities Consulting appreciate the opportunity to comment on the DPA Request for Information and we urge the DOE to address the recommendations and concerns outlined above. We look forward to continuing to collaborate with the DOE to track progress on this effort and hope that it can evolve into a powerful tool that enables equitable processes and tangible outcomes for frontline communities.

Please do not hesitate to reach out to Sneha Ayyagari (sneha.ayyagari@greenlining.org) with any questions or to schedule time to discuss our recommendations further.

Sincerely,

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⁷⁰ *DOE Justice40 Covered Programs*, Department of Energy Office of Economic Impact and Diversity, <https://www.energy.gov/diversity/doe-justice40-covered-programs>

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