



# Who Will Get All the New Green Jobs?

## Equitable Workforce Development Policy for a Changing Climate

NOVEMBER 9, 2021 – DANIEL EDELMAN

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This summer and fall's record-breaking flooding, forest fires, and heat waves have reminded us all that the impacts of climate change are here today and will get worse in the years to come. These impacts have, as always, been borne disproportionately by low-income people and people of color, and at the same time, these groups have suffered the most in terms of health and deaths during the pandemic. Having lost their jobs or worked in unsafe conditions that don't pay family-sustaining wages over the last two years, many Americans have realized they want their work to provide not just economic security, but also meaningful contributions to their communities. The hundreds of billions of dollars that are likely about to flow to green infrastructure investments through the bipartisan infrastructure framework and the Democrats' reconciliation package in Congress present an opportunity to address all these challenges, spurring a significant transformation of society.

This report includes an overview of workforce development and includes related policy and implementation recommendations that will support a just transition to a clean energy economy. Workforce development refers to policies and programs that center the would-be employees—rather than the businesses—involved in economic development projects. These policies and programs often focus on education and training, job quality, and support for

businesses that employ specific groups of people. In an ideal world, workforce development is fully integrated into the planning and implementation of economic development projects. When a new public transit line or wind farm is built, a strong workforce development strategy can help funnel the newly created jobs to the people and communities who have historically not realized the benefits of economic growth. When those projects receive public funding, as large infrastructure investments generally do, governments can require a workforce strategy that advances equity.

This report details a set of federal, state, and local policy and implementation recommendations spanning training, job quality, and business development. They can be tailored to ensure that new green jobs (defined below) go to people in environmental justice communities<sup>1</sup> who might not otherwise get them and have not had access to jobs in industries that will be vital to a just transition, such as construction and manufacturing. Groups that stand to benefit from tailored policies include people of color, adult learners, opportunity youth,<sup>2</sup> women, the formerly incarcerated, immigrants, individuals experiencing homelessness, veterans, people with disabilities, and other groups that have historically not benefited from employment created by major infrastructure investments.

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This report can be found online at: <https://thenext100.org/greenjobs/>

This report was informed by over sixty interviews with: workforce, climate, sustainability, resiliency, and energy experts inside and outside of government; environmental and workforce advocates; job training providers; educational institutions; clean energy employees, entrepreneurs, and other participants in the “green” private sector; and organized labor. The author’s sincere thanks go to the interviewees for their time and candor. This report includes policy recommendations based on the most cited needs from those interviewed and what advocates and researchers have pinpointed as key areas for improvement.

This report does not engage with policy related to K-12 education, including career and technical education.

## **People from all backgrounds in communities across the country can get green jobs.**

There is an ongoing debate over what qualifies as a green job. This report limits the definition to clean energy, energy efficiency, and environmental management jobs, as defined by the Brookings Institution. This set of green work opportunities covers over 300 specific occupations, all of which are necessary for a transition to a clean energy economy.<sup>3</sup> Estimates vary, but there is a consensus that if the United States invests sufficiently to decarbonize and support the international effort to limit global warming to between 1.5 and 2 degrees Celsius, that spending would create as many as tens of millions of jobs over multiple years. Rewiring America estimates 25 million new jobs would be created during a clean energy transition, with 5 million sustained jobs in addition to pre-existing jobs supported by the energy sector. Data for Progress estimates that approximately 13.5 million new jobs would be created over the course of the first five years of a transition. And while Democrats in Congress continue to debate the breadth of their reconciliation package, as of this report’s publication, analysis of an earlier version of the bill suggests that it and the accompanying bipartisan infrastructure framework’s climate and environmental measures would create nearly a million jobs per year for the next decade. (While the reconciliation bill has shrunk since this analysis’s publication, the climate

funding has stayed around the same level, suggesting these findings are still useful estimates.) Earlier policy changes and the fact that clean energy has become so much cheaper over the past decade have already set the stage for massive growth in green jobs, with, to pick two examples, the Bureau of Labor Statistics predicting that wind service technician jobs will grow by 68 percent and solar installer jobs will grow by 52 percent from 2020 to 2030.

Green jobs are for people from all backgrounds and can be created everywhere. Not every town has a port and is thus equipped to become an off-shore wind manufacturer or has large buildings where a worker needs to operate new, greener climate control systems. However, to pick just one example, every community has homes and commercial buildings that need energy retrofits. And those retrofitting jobs, like many other green jobs, cannot be offshored. Green jobs are not just manual labor. They can be accessible to people with disabilities or others who may not be well-equipped for, or not want to do, heavy physical labor. For example, community solar companies need staff to cover community engagement, office administration, and sales/customer acquisition. Required skill levels for green jobs vary enormously, from entry-level solar panel installers requiring limited education before additional on-the-job training, to many other professions—such as in HVAC installation and maintenance—that require some post-secondary credentialing but not necessarily college.

## **Green jobs could do much more to advance equity.**

From the mid-aughts through the implementation of President Obama’s stimulus package, the American Recovery and Reinvestment Plan of 2009, there was significant hype around the potential of green jobs to be the solution for decades of disinvestment and resultantly high unemployment in low-income communities and communities of color. Yet, according to multiple studies and many of the experts interviewed for this report, those benefits largely did not materialize for the communities that needed them most. A decade later, experts say that a huge number of trained trades workers must be ready to take new green

jobs as soon as they become available if the economy is to meet extraordinarily ambitious clean energy deployment goals and stave off the worst impacts of climate change. The sheer volume—potentially tens of millions—of new jobs coming online represents an opportunity to meaningfully address economic inequities in the United States. But without careful policy design and implementation, these jobs won't get filled as quickly as they should, and when they do get filled, they will be filled by the disproportionately white, male population that already has relevant skills and networks, rather than people in frontline communities who might be transitioning careers. (Moreover, multiple interviewees observed how these incumbent workers often do not live in frontline communities, suggesting that their salaries will not be reinvested locally as they would be were community members doing the work.) Unless policymakers are thoughtful about policy design and implementation and keep improving access to job opportunities front of mind, new investments will compound rather than ameliorate our legacies of environmental and economic injustice, as well as novel inequities particular to climate change.

While the racial wealth gap has grown over the centuries because of white supremacist policies that have helped white families accumulate and then pass on wealth, a similarly large income gap today obtains in part because people of color lack equal access to high-quality education, jobs, and careers. These disparities along racial and ethnic lines extend in part to who has green jobs today. According to a 2019 Brookings analysis, Black and Asian workers represent a much smaller share of the clean energy and energy efficiency workforces than they do of the national workforce. However, Black workers are slightly over-represented in environmental management jobs, which are often public-sector and in agencies that have implemented policies to diversify their workforces. Hispanic workers are conversely over-represented in clean energy and energy efficiency workforces and under-represented in environmental management jobs, where Asian people are under-represented as well. Good data on earnings by race and industry is not available, but it is likely that income disparities seen across the whole economy extend to these green industries, even where a racial or ethnic group's representation is proportional. And just like

the national workforce, workers of color in clean energy jobs were more likely than their white counterparts to lose their jobs during the pandemic.

Disparities in representation by gender are more extreme. While they make up nearly half of the American workforce, women make up less than 20 percent of the clean energy and energy efficiency workforces.

The solar industry workforce, which is both part of one of the larger clean energy sectors and one of the most rapidly diversifying, also offers some of the lowest-quality job opportunities. Solar workers have grown more diverse in the recent past even as they are currently disproportionately white and Asian. Yet solar jobs are often lower-quality than many other green jobs. The industry's growing diversity may in fact represent the occupational segregation that has occurred in the rest of the labor force, where women and people of color end up in jobs that are lower-paid than their white, male counterparts.

Economic disparities across race, ethnicity, and gender are exacerbated through our existing public workforce system. Take registered apprenticeships, considered by some to be the "gold standard" of workforce programs, because they are paid training opportunities that often lead to high-quality jobs. Research has shown that women are extremely under-represented in apprenticeships, and, while Black and Latinx representation largely mirrors their overall participation in the labor market, women and Black people are paid far less than their male and non-Black counterparts at the end of their apprenticeships. (Reliable data disaggregated by race, ethnicity, and gender is not available for many other parts of the workforce system.)

While there has been limited federal movement on green workforce development to date, state and local leaders have taken significant action across the country. Highlights of how they did so are shared throughout this report. And with the likely passage of the infrastructure and reconciliation packages replete with climate-related infrastructure investments, several billion dollars for green workforce programs at the Department of Labor, and related programs like the Civilian

Climate Corps, the forthcoming opportunities to leverage workforce investments to meaningfully advance equity are numerous.

The recommendations in this report will benefit vulnerable groups that have historically had less access to the industrial, manufacturing, construction, and related fields that will make up so many of the coming green jobs. As discussed throughout this report and in breakout boxes that address the specific lessons for serving adult learners, opportunity youth, and the formerly incarcerated, intentional policy and implementation decisions can help federal, state, and local actors get people from nontraditional and vulnerable groups into good green jobs.

## **Workforce systems' complexity poses barriers to advancing equity.**

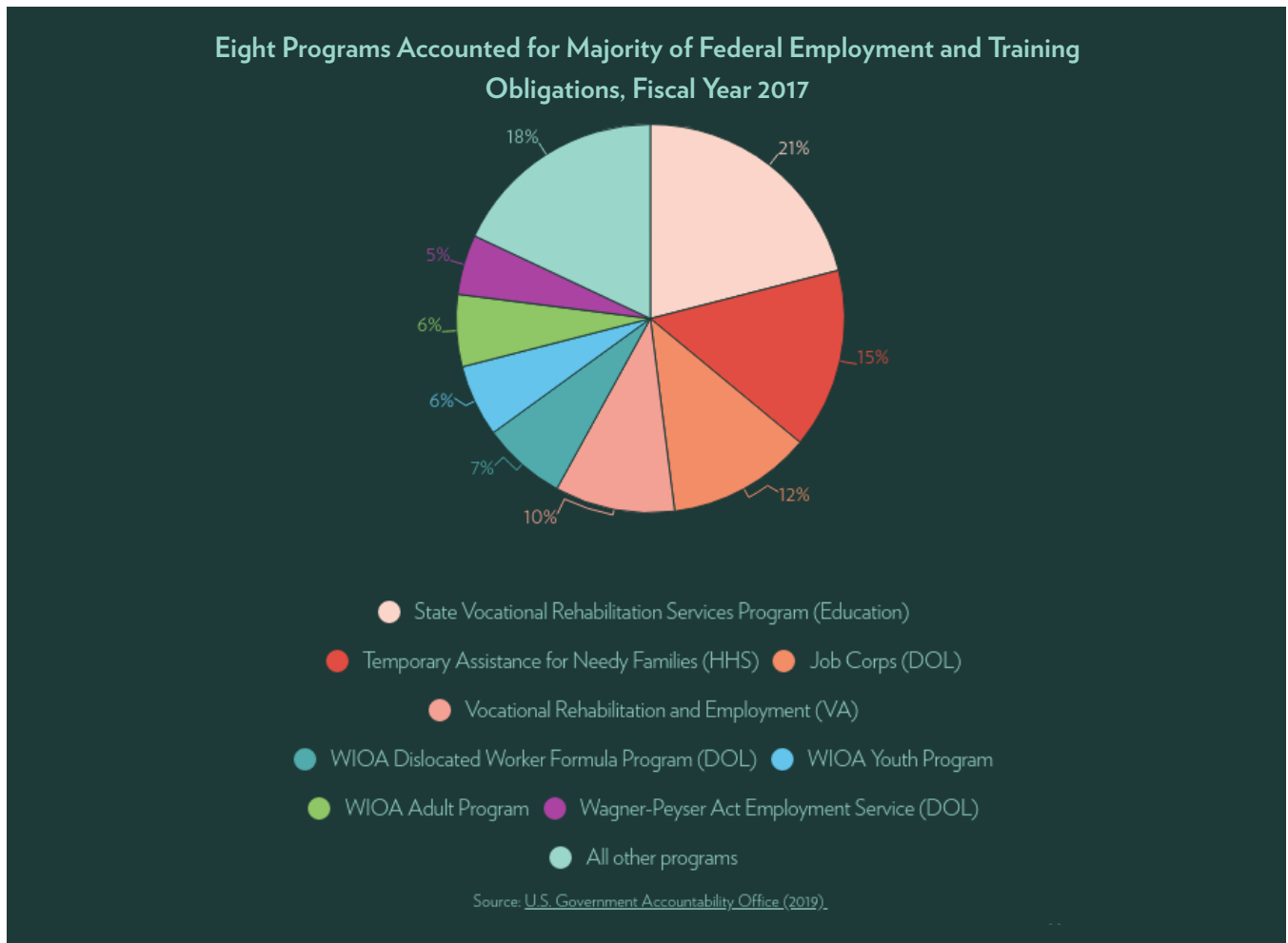
The United States' existing workforce system is decentralized and complex, containing many actors, funders, and decision makers who are often not in communication with each other or aligned on their goals. Major sources of federal workforce funding, which often filter down through state, regional, or local government entities, come from over forty programs across numerous federal agencies. These agencies include the Departments of Labor (DOL), Education, Transportation, and Housing and Urban Development. Specifically anti-poverty funding streams also exist, such as the Administration for Children and Families' Temporary Assistance for Needy Families (TANF); and the Department of Agriculture's Supplemental Nutrition Assistance Program (SNAP) Employment and Training funds, which can only be used to train SNAP recipients. Federal workforce funding is ideally supposed to be flexible enough to allow for tailoring training and other programming to local needs, but these dozens of federal programs that can finance workforce development are not well-aligned or well-coordinated in terms of compliance, reporting, or populations served.

Between "blending and braiding" these funding streams and other complexities, extraordinary amounts of attention are needed by local officials on the ground for successful implementation. Additional compliance requirements often

accompany complementary philanthropic, state, and local funding, and vast numbers of educational institutions and independent training providers exist across the country. Furthermore, organized labor may be a stakeholder depending on industry and geography, and there are millions of private sector employers that could hire workers. The federal Workforce Investment and Opportunity Act (WIOA), administered by DOL, has set up coordinating structures, including local workforce development boards, with representation from different stakeholders. But there was a consensus among people interviewed for this report that these structures have generally been insufficient to meet the task of providing the training and job placement assistance necessary to move clients of the public workforce system into careers that pay family-sustaining wages. (The evidence backs this assertion up, as discussed in the section "We know what makes for effective job training" below.)

Interviewed practitioners and experts agreed that this complexity begets a lack of communication, relationships, and shared data between employers and the workforce system, leading to training offerings often not providing the skills needed for people to fill available jobs. Available industry and occupational labor market data, such as that from the U.S. Bureau of Labor Statistics, is often too high-level to provide significant detail about what is happening in a local economy. That reality, plus funding restrictions and the fact that local workforce organizations and practitioners often do not have robust communication with or enthusiastic buy-in from local industry, can make tailoring training needs to local business and worker circumstances difficult. To put this another way, by the time there is clarity about what jobs may emerge from a specific sector in the green economy, training providers may not have completed the work necessary to prepare (e.g., creating new curricula for a specific type of building retrofit, or enrolling people in pre-apprenticeship programs to prepare them for coming apprenticeship openings). Adding further complication, potential employees who would benefit from training at a high level fall into two groups that have very different needs: those who are trying to enter careers that are entirely new to them, and thus need support to build skills from scratch or qualify for training programs; and those who are retraining or

FIGURE 1



upskilling on a basis of preexisting relevant experience (e.g., an HVAC technician learning how to install an air source heat pump).

This large number of decentralized actors often leaves job seekers on their own to navigate between uncoordinated training and job placement assistance provided by government, community colleges, and other training organizations. People are thus likely to choose their entry point into the workforce system based on geographic convenience or a compelling advertising campaign rather than selecting the program that will best help them meet their career goals. Moreover, an extremely small minority—in the low double digits in the past—of those who interact with the American public workforce system get access to training, and there are numerous credentials offered across the country of varying quality that may not lead to placement in good jobs. While no nationwide survey of training and credential

quality exists to the author’s knowledge, as with low-quality, for-profit, post-secondary educational institutions, it is likely that people of color are disproportionately enrolled in lower-quality programs because of the country’s economic and geographic segregation by race. (Several people interviewed for this report stated as a matter of fact that, based on their experiences, people of color had access to worse training options.) This hypothesis is further supported by what we do know based on available documentation: while the United States is 60 percent non-Hispanic white, less than half of the population receiving WIOA services is white. And as discussed below, core WIOA services have not been shown to be effective at improving participants’ earnings and employment outcomes.

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implementation. Additional compliance requirements often accompany complementary philanthropic, state, and local funding, and vast numbers of educational institutions and independent training providers exist across the country. Furthermore, organized labor may be a stakeholder depending on industry and geography, and there are millions of private sector employers that could hire workers. The federal Workforce Investment and Opportunity Act (WIOA), administered by DOL, has set up coordinating structures, including local workforce development boards, with representation from different stakeholders. But there was a consensus among people interviewed for this report that these structures have generally been insufficient to meet the task of providing the training and job placement assistance necessary to move clients of the public workforce system into careers that pay family-sustaining wages. (The evidence backs this assertion up, as discussed in the section “We know what makes for effective job training” below.)

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## **We know what makes for effective job training.**

Thanks to decades of evaluation and research, workforce practitioners have a good idea of what makes for effective job training, including for low-income individuals and others who may face barriers to high-quality employment. This evidence base—which includes many quasi-experimental



evaluations of varying quality and a couple handfuls of randomized controlled trials that found significant, positive impacts of evaluated programs—is instructive about what works for people of color, adult learners, the formerly incarcerated, and opportunity youth. It is less relevant for other subgroups who face additional barriers—e.g., people with disabilities—and may have greater needs for wraparound supports. (Wraparound supports or services are defined broadly as any service beyond basic job placement, from individualized career coaching to transportation to paid training. And there is an emerging evidence base on interventions that may improve employment and other outcomes for people with disabilities, but it does not yet include large-scale, randomized controlled trials.)

There are only about ten workforce development programs in the United States that have been shown to be impactful in high-quality randomized controlled trials. They share many of the following program design characteristics:

- transparent entry and success requirements;
- intensive screening for trainee needs;
- career exploration and readiness services, to help trainees understand the opportunities available to them and provide necessary soft skills;
- occupational skills training that is sought by local employers and/or high-quality apprenticeship programs;
- work-based learning, meaning that trainees actually do the work required in the jobs they hope to land;
- culmination in one or more industry-recognized credentials;
- job development (establishing relationships with employers with openings) and assisting with job placement;
- interim job opportunities and other supports before full-time placement, when necessary; and
- support for retention and advancement once jobs have begun.

Some general lessons from these and higher-quality quasi-experimental evaluations follow.

For low-income individuals, the major barriers to gaining new skills and knowledge are often financial. Providing wraparound services like child care, transportation, and pay for time spent in training can eliminate these barriers, but is expensive for government to provide (more in “Expand opportunities for flexible, regular financing of training, education, and wraparound supports” below). Nonetheless, wraparound services and pay will likely improve outcomes, and thus the “quality” of programs. They are also prerequisites for advancing equity. Women, parents, workers of color, low-income workers, and other groups may not be able to afford to do training if it does not include, say, child care or a stipend. Programs that do not include these features are by their nature more exclusionary than those that do, and will perpetuate existing gender or racial disparities in the labor market.

Job markets change quickly, and training providers must provide the skills needed to keep up. Intentional partnership between various actors within a sector will ideally lead to training being deeply responsive to local employer needs. This coordination—dubbed “sector strategies,” “sectoral training,” among similar terms—is necessary because most people engaging with the public workforce system are low-income. It is often challenging for them to pick up their lives and move for employment opportunities.

Trainees need to be placed on high-quality “career pathways” that include opportunities for promotion to more senior positions over time and provide family-sustaining wages. Depending on individual needs, successful entry into or advancement along a career pathway may require so-called “bridge” training for needed skills (e.g., English language, high school-level math) or certifications (e.g., high school equivalency, drivers license). Trainings like these should be offered concurrently with occupational training whenever possible so as not to flub handoffs of individuals between programs, and to better keep training recipients engaged. (Some practitioners also refer to the combination of these two types of training as “bridge training.”) Career pathways should include “stackable,” “portable” credentials that build on each other and are recognized by employers and training providers. (Green Buildings Career Map offers examples of

what these career pathways can look like in practice, showing how experience gained from some jobs plus receiving additional education can lead to new positions.) Some individuals may also benefit from “transitional jobs” that provide significantly more wraparound supports as they learn how to navigate the expectations of full-time employment, such as commuting to worksites and navigating relationships with coworkers.

If these features that lead to significant impact sound like they accumulate to a program with lots of components, that’s because lighter-touch training interventions have generally not been successful, and, in the United States, are not likely to include actual skills training. For example, a large randomized controlled trial of one of the WIOA’s two main funding streams, for Adult or Dislocated Worker programs, found that its training had no significant impacts on employment or earnings over thirty months. (Pointing to the potential impact of even minor wraparound supports that go beyond basic job placement services, the evaluation did find significant, positive impacts on the same metrics from individualized staff assistance with job hunting.)

## **Federal policy changes can advance green workforce equity.**

The following changes would have the greatest impact at the federal level, where they would have the broadest reach. However, states and localities can also take the lead on implementing them, either where the federal government does not act, or by tackling them more aggressively or comprehensively than the federal government does.

### **Expand opportunities for flexible, regular financing of training, education, and wraparound supports.**

While Congress may be about to invest several billion dollars in new green workforce programs, the United States has historically invested much less in training, hiring subsidies, and direct job creation than other wealthy countries. As a result, an extremely small minority—in the low double digits in the past—of those who interact with the American public workforce system get access to training. As discussed in the

section “We know what makes for effective job training,” the most rigorously tested United States-based trainings that offer a large return on investment are high-dosage (they provide a lot of instruction and support) and are thus typically expensive. Planning to include other wraparound services like child care, transportation, and evidence-based job readiness services like employment counseling further adds to the bill. Measures that can meaningfully advance equity—such as having community-based organizations recruit underrepresented groups and engage them in planning processes for related economic development projects, or paying people for training—all further add to costs.

Major training funding streams such as WIOA and SNAP Employment and Training Funds (E&T) can often serve many needs and already allow significant flexibility, but they cannot meet the nation’s training needs. For example, E&T funds not just training but a wide variety of supportive services—as long as other funds match its spending dollars one-to-one. (One community college president interviewed for this report reported that his institution has used E&T funds to cover expenses from tuition, child care, transportation, and equitable student success initiatives.) Some states have their counties administer their SNAP programs, and the counties are limited in how much they can spend on wraparound services by their own available budgets, which are of course smaller in higher-poverty areas that would benefit the most from expanded funding. E&T and other major funding streams should be significantly expanded, and existing matching funds requirements should be scaled back for organizations in under-resourced communities to allow training and wraparound supports to go to the people who need them most. (WIOA is set to receive additional funds if the current version of Democrats’ reconciliation bill passes.)

Additional grant opportunities beyond major workforce funding streams should be flexible, distributable to different levels of government, and come in multi-year grants. Fortunately, numerous federal programs that meet these criteria either exist, existed in the past, or have been proposed. An update of the Sustainable Communities

## The Role of Community Colleges in Workforce Development

With over 1,000 of them spread across the United States, an average age served of 28, and a common focus on providing pre-professional training to low-income students who are disproportionately people of color, community colleges are poised to drive much of the country's needed equitable workforce development work focused on green jobs. But for them to do so will take a meaningful investment. Free community college was cut from the latest version of congressional Democrats' reconciliation package. Yet, community colleges can still make use of workforce funding at the Department of Labor and other federal agencies, which will grow significantly if the bill is signed into law.

Community colleges sometimes partner with a large local manufacturer to co-develop curricula that are directly responsive to their employment needs, and sometimes they provide skillsets that may be necessary for jobs in a particular industry such that graduates are well-positioned to work with multiple local or regional employers.

Some community colleges are already demonstrating how they can serve as anchor institutions in supporting green workforce development. Bristol Community College in Boston houses the National Offshore Wind Institute. The Institute provides training for specific construction, deployment, operations, and maintenance jobs in the offshore wind industry, which is set to boom off New England's coast. Portland Community College in Oregon has both created offerings specifically related to climate change (e.g., they teach air conditioning and automotive technicians how to properly recover, handle, and dispose of hydrofluorocarbons, an extremely potent greenhouse gas) and infused sustainability throughout their other curricula (e.g., adding climate science and technical components about ammonia and other alternative refrigerants to their existing HVAC offerings). Truckee Meadows Community College in Reno, Nevada, has partnered with Panasonic and Tesla to offer training for entry-level through supervisory jobs at the local battery "Gigafactory." Because Truckee Meadows is a registered apprenticeship provider, unusual for community colleges, they use federal Department of Labor funds to pay for all training, and students are paid for their class and training time.

Community colleges, beyond providing academic degrees and having many graduates go on to receive bachelor's degrees, also provide bridge training, including Adult Basic Education (ABE) and English as a Second Language (ESL) courses. These offerings are extremely important for efforts to increase economic opportunity for the tens of millions of adults with low literacy. Yet, they receive under \$700 million in federal grants and serve under 2 million people annually, and the latest version of Democrats' reconciliation bill includes only a modest increase in funding.

Regional Planning and further expansion of the Department of Transportation's RAISE (formerly BUILD and TIGER) programs would allow for regional or metropolitan area leaders to create more economic development initiatives responsive to their local needs, independently of states, through which most federal workforce money flows. A restoration of a program like Investing in Manufacturing Communities Partnership (beyond the defense industry, which now has a similar program) would allow for significant investments in building out local manufacturing capacity, and in training would-be workers. The PARTNERS Act, proposed in the last Congress, and similar proposals would establish intermediaries that can handle the administrative burden of establishing apprenticeships for multiple small and medium-sized businesses. Grant opportunities like these that fund economic and workforce development can be designed such that a significant amount of funding goes to training programs serving small businesses in frontline communities, which would build wealth in those same communities and, according to several interviewees, be more likely to hire locally.

These grant opportunities should also include smaller seed funding rounds for startup training providers, especially

those that have the potential to scale quickly, e.g., train the trainer models, online or hybrid education, or programs that use widely distributed anchor institutions like community colleges. Jobs for the Future specifically proposes that the U.S. Department of Labor launch an innovation arm that significantly grows its past innovation work to accomplish this goal.

### **Require high job quality standards for all investments that receive federal funding.**

The federal government should require that all economic development projects—green and otherwise—that receive federal funding only create high-quality jobs. Affected federal funding streams could include competitive, discretionary grant programs for specific projects, formula funding streams distributed to states or Tribal entities, or loan financing programs. While definitions of a high-quality job vary, pulling in part from a report Next100 authored in partnership with The Century Foundation, Robin Hood, and other partners, high-quality jobs should provide: prevailing wages; access to health care and other benefits, like paid leave and a retirement plan; predictable and stable work hours; opportunities for advancement; safe work

environments; and stable and clearly communicated and enforced policies on discrimination, sexual harassment, and retaliation. Clear, standardized metrics for these and other job quality standards are needed to ensure accountability. (Other policy organizations have written extensively on how job quality standards can be attached to federal funding.)

### **End the local hire bans that accompany federal funding.**

Local hiring requirements attached to infrastructure projects have the potential to ensure that public investments improve communities' incomes and wealth. Yet, a ban on prioritizing local hiring on projects that utilize federal funds—including all manner of economic development projects that contain workforce components—has been in place since the 1980s. The ban's justification was that local hire provisions would decrease competition for public bidding opportunities, but a Department of Transportation pilot during the Obama administration demonstrated that eliminating the ban did not increase the price of economic development projects. The Biden administration should eliminate the ban, which, as it stands, will make it more difficult to fulfill the president's promise that 40 percent of climate-related investments benefit frontline communities.

### **Require tax benefits agreements and provide tax credits that advance equity for infrastructure projects that receive federal funding.**

As Jobs for the Future recommends, the federal government should require community benefits agreements (CBAs)—agreements between private sector and community stakeholders—that create permanent, good jobs for local residents as a component of all large, federally funded infrastructure projects. CBAs can stipulate, among other terms, that contractors hire from targeted under-represented or disadvantaged groups, and that funding go to high-quality job training and placement services.

Private sector compliance with established CBAs is not a foregone conclusion. To ensure that implementation of projects actually adheres to contractual workforce goals

(e.g., percentage of employees who are women, wages, hours worked by apprentices), it is vital that regularly released data be reviewed by standing committees that include community representation, and, in places where they have a strong presence, unions. When equity goals are not met, fines or clawbacks of funds must be enforced by the government contract holder. For a successful case study, the Los Angeles-based electric bus company Proterra signed a CBA with United Steelworkers Local 675 and Jobs to Move America that provides pre-hire training, a new apprenticeship program, ESL resources for Spanish-speaking workers, and supportive services for workers.

Industries that require workers with more training (e.g., wind turbine technicians, as compared to, say, solar installers) will be more likely to use expansions in training funds to invest in retraining existing trades workforces, who are disproportionately white and male. CBAs with strong equity targets and mandated hiring of new candidates from specific under-represented groups are thus especially crucial when new projects might depend on incumbent worker training.<sup>4</sup>

CBAs' requirements can be coupled with tax credits tied to providing training that leads to high-quality, portable credentials and employing specific groups of people. Tax credits can operate similarly to the existing federal Work Opportunity Tax Credit, which incentivizes employers to hire from disadvantaged groups, including veterans, recipients of some anti-poverty benefits, and the formerly incarcerated.

### **Make it easier to utilize federal funds, including financial aid, for workforce development.**

The Biden administration should identify the most common uses of blended federal funding to fight climate change and reduce funding restrictions and duplication of reporting to ease project design and implementation for state, regional, and local actors. To pick just a few climate-related use cases, building energy retrofit projects may make use of funding from the Department of Housing and Urban Development (HUD) or the Department of Energy (DOE), expanding electric vehicle charging infrastructure might involve DOE and Department of Transit funds, and lead pipe replacement

## What do these recommendations mean for designing an equitable Civilian Climate Corps?

The Civilian Climate Corps (CCC) proposal included in the latest version of Congress's reconciliation bill would resurrect the New Deal-era Civilian Conservation Corps, giving youth across the country the chance to perform up to a year of paid service on sustainability and resiliency projects. This full year of paid service represents a potentially huge opportunity for workforce development when so many existing training offerings are just a few weeks or months long, an often insufficient program length for participants who face significant barriers to employment. But to make the CCC not just tackle climate change but meaningfully improve participants' economic opportunity, as this report's author and Next100's executive director Emma Vadehra have written, it must have sufficient outreach to recruit members and host organizations from low-income communities and communities of color. A CCC should not just target youth, but should have ample opportunities for adults who also want their work to address the climate crisis. It should intentionally recruit—and then provide the necessary supports for—the disadvantaged and under-represented groups highlighted in this report. CCC opportunities, which will differ significantly in type of work by geography and host organization, should coordinate with local employers to ensure that program completion and training opportunities offered for free during paid work hours result in local industry-recognized credentials. Where organized labor is present, CCC service should count as a pre-apprenticeship that qualifies graduates for direct entry into local apprenticeships. And because growing small businesses that are owned by frontline community members are often more likely to hire from those same communities, ensuring that accessible, free trainings for local CCC members include core entrepreneurship and business development skills is essential.

might use Environmental Protection Agency and HUD funds, while all of these initiatives might leverage funding from the Department of Labor and other agencies to train workers. As they currently exist, lack of alignment between funding streams makes them challenging to use together.

In a similar vein, Annelies Goger at Brookings specifically asks that Congress better align federal Registered Apprenticeship, Higher Education Act, Perkins, and WIOA legislation to: 1) design offerings around trainees' needs; 2) provide for-credit, stackable credentials at community colleges organized by occupation or career pathway and designed to be attainable by people who are already working; 3) provide universal access to career exploration, digital literacy, networking, mentoring, career counseling, and other wraparound supports; 4) sponsor interagency partnerships to help state and local governments braid funding; and 5) measure equity metrics and strive for continuous improvement. All of these goals can theoretically be achieved now. But successfully coupling several federal funding streams with additional philanthropic and state and local funding requires massive amounts of coordination, effort, and attention. Reducing this complex administrative burden through better policy alignment has the potential to improve outcomes, because doing so will make it possible to devote more resources and attention to program performance, and less to compliance.

Federal financial aid funding streams do not currently cover non-credit offerings at community colleges, and they should do so under at least some circumstances when those offerings are shown to be effective at increasing economic

opportunity. Non-credit courses and certifications are not necessarily of worse quality, so much as they are often newer: to become a credit offering, coursework typically has to go through local and state approval processes, and will eventually be subject to federal audit. While these processes exist to ensure that community colleges are offering high-quality courses of study, it can prevent colleges from being immediately responsive to local employer needs as the job market changes. Reno's Truckee Meadows Community College, mentioned above in the section "The role of community colleges in workforce development," recognized that an increasing number of local tech startups needed entry-level coders who didn't necessarily have bachelor's degrees in computer science. The college set up an accelerated computer coding program that requires less math than a traditional BA, a stumbling block for many interested students. Because it is a non-credit offering, its students who might otherwise qualify for federal Pell grant funding are not able to put that aid toward their tuition. Any loosening of restrictions must be accompanied by extremely strong accountability measures, such that bad actors and low-quality providers do not exploit this opportunity at the expense of students.

**Provide funding and technical assistance to help state, regional, and local actors build intermediary organizations or other coordinating bodies for green workforce development.**

Because of the variety of actors involved, workforce development efforts typically need some kind of coordinating body beyond WIOA-mandated workforce development boards to be successful. These entities can exist in government or be a separate intermediary organization. But they must be positioned to develop strong relationships with all stakeholders (e.g., training providers, employers, community-based organizations in charge of recruitment or wraparound services, unions) such that all parties support a given economic development project and are committed to providing trainings that benefit workers and employers. These coordinating entities must actively engage employers to have constantly up-to-date, detailed, and easy-to-parse information on employment and skill needs for openings, offer a standardized and robust way to evaluate job seekers' training needs for those openings, and provide easily accessible and high-quality trainings to fill the gaps in what workers and employers need. Key to these efforts is not isolating workforce development from broader economic development planning and policymaking: workforce strategies must be fully integrated to successfully provide the necessary skilled workers from disadvantaged or nontraditional groups. There are multiple models for how this coordination can work well, both inside and outside of government.

Wisconsin's Regional Training Partnership (WRTP), one of the small number of American training programs with strong, positive outcomes from a randomized controlled trial, provides a range of short-term training programs and placements based on clear labor market needs or employer requests across multiple industries, including construction and manufacturing. WRTP works closely with local trade unions and employers to develop necessary training. WRTP's evaluation showed that program participants increased their wages significantly, and notably had a study group that was almost 80 percent Black and nearly 50 percent people with prior criminal convictions.

New York City's Industry Partnerships (IP) model places small teams focused on different industries, such as health care, tech, and industrial and manufacturing, in the city's Department of Small Business Services (SBS), which provides some of the city's workforce services, including those that use WIOA funds for adult workers. Each IP has a board made up of industry members and only works on board-approved initiatives, allowing them to build trust with and collect information from private employers more easily than other governmental actors. This sole focus on meeting industry needs is a different prerogative than the local, WIOA-mandated workforce development board and SBS's Workforce Development Division. The IPs work with these other entities to understand who potential employees are and develop the trainings and supports to help them get into industry job openings.

For existing industry-specific organizations—e.g., the National Institute of Standards and Technology's Manufacturing Extension Partnership, which has Centers in all fifty states and Washington, DC—the federal government should provide technical assistance that builds out their green workforce programming.

**Build out a robust monitoring and evaluation framework.**

As discussed in the section “We know what makes for effective job training,” only about ten training programs in the United States have been shown to have strong, positive impacts on participants' wages and employment under high-quality randomized controlled trials. And only one of them—RecycleForce, an Indiana-based social enterprise that employs justice-involved individuals—specifically falls under the umbrella of green jobs.

Federally funded education and workforce programs should be required to publicly report earnings and employment outcomes of participants on a quarterly basis using standardized metrics disaggregated by race, ethnicity, and gender. Data collection and publication policies should be designed to prevent programs from covertly “cream skimming,” or only serving candidates they believe are

## What do these recommendations mean for serving adult learners?

Because so much attention in recent policy debates about a just transition has centered on the Civilian Climate Corps and on youth, adult learners often go ignored. Adults who want to switch careers from low-quality, low-pay sectors like service or retail into a green job could benefit from continuing education and related supports, as at least some common green jobs often have lower barriers to entry and pay more than jobs in other sectors with comparable training needs. While many of the program design principles for adults remain the same as for other populations that would benefit from workforce development, some are different. Community colleges (discussed in more detail in the section “The role of community colleges in workforce development”) already offer much of the necessary infrastructure to facilitate career transitions, especially when they offer multiple, flexible class times for the same career pathway and offer bridge training such as English as a Second Language and Adult Basic Education concurrently with coursework that teaches specific sector skills. Child care is also an essential support for adult learners whose care duties might otherwise keep them from attending training. The Accelerated Study in Associate Programs (ASAP) model, which doubled associate’s degree graduation rates at the City University of New York and three community colleges in Ohio, offers lessons in the types of support community colleges students can benefit from even if they’re not seeking two-year degrees. ASAP is a full-time model and thus cannot work for all adult learners, but its other features may be transferable, including providing comprehensive career advising and tutoring, blocked courses with the same students, tuition waivers that cover gaps between financial aid and the total cost of attendance, and free public transportation and textbooks.

most likely to succeed and neglecting those who need the most help. Aggregated and anonymized data on program participants’ labor market outcomes prior to enrollment should be publicly reported, including on the degree to which programs are serving particularly disadvantaged groups (e.g. the long-term unemployed). To ensure that information about program quality is accessible to a broad range of potential participants, as well as policymakers, reporting should be clear, simple, and available in multiple languages.<sup>5</sup>

The author’s former employer, New York City’s Mayor’s Office for Economic Opportunity, worked with New York State to match state unemployment insurance earnings records with program participants to receive aggregated, anonymized data that allowed for tracking of earnings outcomes of people who went into different programs. That is, when coordinated well by government and making use of already collected data, reporting on program outcomes can protect participant privacy and does not need to burden training providers or employers.

Due to the small number of training programs with very strong evidence bases and because new trainings will deploy alongside new investments in green infrastructure, rigorous evaluation of new federally funded programs is key. Performance and evaluation data should be used to inform the reallocation of funds toward more successful programs and away from less successful ones in out-years.

## State and local policy changes and program implementation best practices can advance green workforce equity.

As stated in the section “Federal policy changes can advance green workforce equity,” states and localities can also take the lead on implementing many of the critical policy changes recommended above, either where the federal government does not take action, or by tackling the same challenges more aggressively or comprehensively. Additional policy changes and implementation practices states and localities are well-positioned to take to meaningfully advance workforce equity are included below. Where a header below specifies an actor—e.g., “States must”—that recommendation applies to only that level of government. Where no actor is specified, multiple levels of government or types of public entities can implement the recommendation.

### Mandate local and targeted hire provisions using Project Labor Agreements and Community Benefits Agreements.

Just as some federal funding streams do, some state and local governments currently prohibit the use of local or targeted hire provisions. They should stop doing so, and instead move in the opposite direction, attaching provisions to projects that receive state and local funding to require the hiring of local community members and people from

## What do these recommendations mean for serving opportunity youth?

Young people who are disconnected from school and employment, with limited or no work experience, need different and greater supports than older adults seeking workforce development services. Beyond the general components that make for an effective workforce program, opportunity youth need support in developing positive relationships with adults that nurture growth and development, and work experiences that offer opportunities for hands-on learning and expose them to new environments and expectations. One such program, YouthBuild, provides hands-on vocational training, counseling, case management, and education (either high school equivalency preparation or postsecondary credentials) to thousands of low-income, out-of-school youth across hundreds of sites while participants engage in community service projects. A randomized controlled trial of the program showed success on education metrics such as high school equivalency attainment and college enrollment. Employment rates, wages, and earnings only showed improvements in self-reported survey results rather than administrative records, but may well reflect truly improved economic outcomes as administrative records do not capture off-the-books labor and wages.

While discussing the difficulty and expense of serving people with many barriers to employment, one interviewee from a training provider commented on how the fact that their apparently successful program serving low-income youth costs tens of thousands of dollars per participant is not a failure. She instead compared it to the investments middle-class or high-income youth receive from their families and local institutions, manifesting in the benefits that accrue to them from their safer neighborhoods, better-resourced schools, cleaner air, and better health throughout their lives. The fact that “high-dosage” programs that provide lots of support like YouthBuild do not by themselves move all participants into the middle class likely just hints at the magnitude of investment needed to make up for the lack of investment made in many opportunity youth throughout their lives. The successful results such programs do produce are an argument for even greater investment.

One existing federal funding stream that could be used to serve more opportunity youth is AmeriCorps, which places 75,000 young people in paid service programs across the country. AmeriCorps has not traditionally focused on recruiting this group, but with a Civilian Climate Corps poised to be created under AmeriCorps’ governing agency in the latest version of Democrats’ reconciliation bill, both the old and new programs should expand their recruitment efforts to target opportunity youth.

vulnerable populations. This targeted hiring of specific subgroups can change over time or for different projects depending on who is living in a given community and which groups have the greatest needs.

In areas with a significant union presence, Project Labor Agreements (PLAs) between labor and government should be established that require high job quality, strict local and targeted hire goals for under-represented groups, and large set-asides for programs that train and place the same groups in new trades jobs. These set-asides are important. While trade unions have historically helped produce good jobs, multiple people spoken to for this report noted that, in perception and sometimes in reality, they have had largely white male memberships. At the same time, some trade union locals are moving in significant ways to change their membership demographics and meaningfully advance equity. Several interviewees specifically mentioned the enthusiastic efforts of multiple International Brotherhood of Electrical Workers (IBEW) locals.

New York City’s 2020 PLA with the Building and Construction Trades Council (BCTC) and the Building Trades Employers Association is an example of a PLA that included aggressive set-asides to further equity. The BCTC

has four “direct entry” pre-apprenticeship programs, each of which targets a different vulnerable or nontraditional group: women, veterans, low-income people, most of whom have been formerly incarcerated, and local residents, who are predominantly people of color. Direct entry means that program graduates who meet all qualifications can enter trades apprenticeships without having to go through general recruitment, effectively skipping the line. (Because apprenticeship openings are not always available, it is important that programs help place people in interim jobs, if needed, and continue to support and stay in contact with them during those placements.) The PLA has what in total are ambitious set-asides for the aforementioned groups, public housing residents, Section 8 voucher recipients, and certain Minority- and Women-Owned Business Enterprise employees that have graduated from the four direct entry programs. These set asides sum to 70 percent of all apprentice slots, although people can be double-counted across multiple categories. In areas or industries with strong unions, state and local governments should work with labor to fund community-based organizations to create similarly targeted pre-apprenticeship programs, and require that set-asides for graduates in PLAs be substantial in size.



For an example of how PLAs and local and targeted hire policies can build on each other, in 2012, the Los Angeles Metropolitan Transportation Authority (LA Metro) complemented a recently signed PLA with the local construction trades union with a policy change for its construction projects. The policy and the PLA together required that 40 percent of construction workers reside in economically disadvantaged areas, 20 percent be apprentices, and 10 percent face two or more barriers to employment, such as experiencing homelessness or long-term unemployment. To not run afoul of the U.S. Department of Transportation's prohibition on local hire, LA Metro only included local hire requirements for projects financed without federal funds.

State and local governments should also establish community benefits agreements (CBAs)—agreements between private sector and community stakeholders—with similar set-aside requirements for all publicly funded projects to create permanent, good jobs. To ensure that implementation of projects actually adheres to contractual workforce goals (e.g., local hiring, percentage of employees who are women, wages, hours worked by apprenticeships) over time, it is important that data is released to the public on a quarterly basis and is reviewed by standing committees that include community representation, and, in CBAs where union labor is employed, organized labor. For both PLAs and CBAs, when equity goals are not met, fines or clawbacks of funds must be enforced by the government contract holder.

Establishing partnerships with trusted community-based organizations that work with targeted or local groups is essential to successful trainee and employee recruitment, and these same organizations can often provide needed wraparound supports for recruits. Jobs to Move America, a proponent of leveraging PLAs and CBAs to advance equity in public infrastructure investments, offers model procurement language that state and local governments can repurpose.

### **Facilitate inclusive recruitment and hiring of underrepresented populations.**

State and local actors can utilize a variety of recruitment and hiring practices to advance workforce equity when implementing economic development projects. Training programs should be maximally accessible, ensuring recruitment and outreach sessions are presented in multiple languages and made available online. (Online access is especially important for information sessions that might allow someone to determine whether a given program is right for them.) Government entities can work with—or require contractors receiving public funding to work with—community-based organizations that have existing relationships with their neighbors to help plan economic development projects, solicit community members' input on draft plans, manage recruitment of trainees, and provide wraparound supports. Training providers and employers need to bring a diversity, equity, and inclusion (DEI) lens, which may require using inclusive communications, providing mentorship and other supports, and ensuring that programming is trauma-informed. Since many organizations may lack the necessary DEI expertise, government-contracted providers can provide technical assistance in these areas.

### **States must facilitate an ecosystem of quality credentials.**

States can take several actions to ensure that workers have access to a wide variety of high-quality, “stackable” and “portable” credentials that build on each other and are recognized by employers and training providers. States should approve quality criteria, which can be based in part on wage growth after credential receipt, while controlling for local economic circumstances. States should also implement policy to ensure that credentials can be transferred between accredited educational institutions, training providers, and earn-and-learn programs.

## What do these recommendations mean for serving the formerly incarcerated, or other groups with specific needs?

The formerly incarcerated face a series of barriers to successfully reentering society, from their own personal difficulties with the transition, to discrimination by employers, to the “collateral consequences,” or thousands of legal barriers, that prevent them from obtaining housing, employment, occupational licensing, and more. Research has shown that formerly incarcerated people are likely to benefit from transitional jobs, both in terms of their employment outcomes and reducing their likelihood of recidivism. For example, The Center for Employment Opportunities (CEO) provides life skills coaching upon program enrollment, paid transitional employment, and continued support after people have landed jobs, with bonuses paid over time for achieving employment outcomes. A randomized controlled trial (RCT) of the program found that it reduced different measures of recidivism by 16 to 22 percent and increased employment at the beginning of the program due to the provision of the transitional jobs. A RCT of Indiana-based electronics recycling and transitional jobs program RecycleForce—the one U.S. green jobs training program that has had really successful RCT results—found smaller, although still significant, reductions in recidivism, but larger, positive impacts on wages. RecycleForce offers myriad wraparound services beyond their on-the-job training and job placement services, including literacy tutoring, high school equivalency preparation, assistance with driver’s license reinstatement and housing, substance use and mental health services, tax preparation, and financial literacy programming. Understanding the multitude of barriers people face upon leaving incarceration, both CEO and RecycleForce recruit participants as quickly as possible after they are released.

One interviewee who used to manage a small green jobs program that served many people with criminal records but did not offer the wraparound supports of CEO or RecycleForce observed that, while not every person emerged from the program on a strong career pathway, nearly everyone left with vastly improved soft skills. According to him, participants learned to better navigate mishaps and conflict, and got comfortable with expectations that they were not asked to meet while incarcerated or out of work, such as arriving at different work sites at set times. This lesson—that transitional jobs can get people who are not currently working accustomed to typical employers’ expectations—is relevant to other groups with specific needs, whether they are people with disabilities or opportunity youth. Combining targeted hire goals for disadvantaged populations with transitional, skill-building jobs and wraparound supports that meet would-be employees’ needs can give anyone a chance at meaningfully increasing their economic opportunity. This recipe can extend to any group—Illinois’s 2016 Future Energy Jobs Act did not just include funding for training in the solar industry, but had numerical targets for job creation for returning citizens, low-income people in environmental justice communities, and for people who aged out of foster care.

## Facilitate inclusive contracting with community-based small businesses.

Governments—and other entities like utilities or government-affiliated economic development corporations that work with contractors using public dollars—should perform sustained, intentional engagement of small businesses in communities of color and immigrant and low-income communities. Among other tasks, these institutions can inform businesses of contracting opportunities and provide technical assistance to support them in winning bids. These activities will advance equity by keeping wealth local, as small businesses often hire from their local communities and have the necessary hard skills needed to perform many green jobs, such as building retrofits.

Government-backed technical assistance can be broad in scope. Small businesses may lack relationships with, say, their local utility or state government, and local governments can facilitate introductions to them, as well as environmental organizations and potential customers, like homeowners’ associations. Alternatively, businesses may lack a single necessary certification (e.g., an HVAC company may not

yet be certified to install air-source heat pumps), or they may need assistance with general business development or operations. Small contractors also may not have yet realized the business opportunity that new “green” activities, such as energy retrofits, could bring in addition to their traditional work. Public entities can provide education to address these needs. One community development financial institution employee interviewed for this report said that small businesses he had worked with needed particular help with cost estimating. He had seen some small businesses win contracts after bidding too low before losing money by project completion, and others had overbid and lost opportunities out of abundant caution. Public entities may also be able to introduce contractors to additional opportunities by listing them in publicly accessible databases, which can promote contractors’ relevant certifications.

Public entities can break up large contracts into smaller contracts where possible, and where not possible, can require subcontracts with equity goals. Government-organized networking events can connect small businesses to larger contractors to make meeting subcontractor equity goals easier. (Targets for Minority- and Women-Owned

Business Enterprise [MWBE] certification can help achieve subcontracting goals, but many de facto MWBEs don't have the proper certification, and requiring it can pose an additional burden.)

### **Support the growth of worker cooperatives, social enterprises, or other private sector entities that advance workforce equity.**

State and local governments, utilities, and green banks and other financial institutions should offer specific contracting, financing, and technical assistance opportunities to private sector organizations that prioritize equity in their hiring and other workforce practices. There are two strong examples of what these organizations can look like in New York City. Green City Force, a workforce development program that employs public housing residents to do green infrastructure work in their communities, set up a social enterprise both to employ some of their program graduates, and to provide additional training. And WE ACT for Environmental Justice launched a solar worker cooperative to install solar panels in areas of northern Manhattan that existing businesses were not adequately serving. Organizations such as these that have priorities beyond profit maximization are likely better positioned to help workers navigate some of the challenges specific to the green private sector, such as the fact that solar installation jobs are not typically available year-around.

### **States should allow education and training to substitute for work requirements for federal public benefits programs.**

As discussed in the section “We know what makes for effective job training,” the opportunity cost of unpaid training—not working and earning wages—may prevent people from participating in opportunities that could improve their economic situation over the long term. Creating a similar deterrent for some, the federal benefit programs Supplemental Nutrition Assistance Program (SNAP) and Temporary Assistance for Needy Families have work requirements attached to them. Yet it is a state-level policy decision whether work requirements can be met through enrollment in an education or training program. Allowing this

flexibility has the potential to significantly expand access to education and training for low-income individuals, allowing them to focus on building their own skills and knowledge in pursuit of better job opportunities. One community college president suggested that allowing more public benefits to flow to students could help ameliorate their financial vulnerability, which otherwise poses major barriers to adults completing their education. The president cited Real College's latest student survey, which reported that over half of two-year college students experience housing insecurity and marginal, low, or very low food security.

## **Green jobs can, and should, be a crucial part of the solution to our social ills.**

This country's long legacy of environmental injustice presaged how climate change is already wreaking havoc, hitting low-income people, communities of color, and immigrant communities the hardest. But public investments in a clean energy transition, if leveraged thoughtfully and with purpose, could begin to repair some of the damage that has been wrought. To do so, federal, state, and local actors need to provide the training, supports, and oversight necessary to help these same communities get newly created sustainability and resiliency jobs, and to ensure that they are good jobs. This goal is not out of reach, but achieving it will take additional resources and a renewed level of attention to implementation of new policies and programs by policymakers.

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## Notes

**1** This report defines environmental justice communities as those composed predominantly of people of color and/or people living in poverty, and that are or have been subjected to a disproportionate burden of environmental hazards relative to surrounding or comparable communities.

**2** Opportunity youth is a commonly used term to describe out-of-work, out-of-school youth.

**3** Some broader definitions include other low- or no-carbon jobs such as teaching and caregiving.

**4** One interviewee identified a tension here, in that there is a progressive case for having employers invest more in on-the-job training both so that they are upskilling and promoting their workers. (This report's author also used to help manage an incumbent worker training program in a prior job.) The interviewee noted that if companies do not train their own workers, green career pathways can still exist, but not necessarily within a single employer, potentially making them harder to access. She also pointed out that companies that perform activities that emit lots of greenhouse gases getting funding to retrain their workers to do "greener" activities could be a very direct way to decarbonize. These observations support the argument of many climate advocates that we need to both create new paths into good green jobs for historically excluded groups and to support workers in fossil fuel industries in transitioning to green jobs.

**5** Rigorously evaluating training programs without randomized controlled trials is difficult specifically because programs serve different people with different needs, and trainees often enter programs based more on geography and ease of access than any other criteria. This reality makes understanding participants' circumstances and monitoring performance data regularly all the more important.