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Why green jobs plans matter and where US cities stand in implementing them

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Editor's note: This report is the first in a two-part series exploring how cities can support green workers, especially amid historic federal infrastructure investment. The [second report](#) focuses on specific federal funding opportunities.

The transition to a cleaner and more resilient economy will be one of the most significant economic and physical transformations in U.S. history. Trillions of dollars will be required to adopt clean electricity, retrofit homes and businesses, establish new manufacturing processes, and protect cities and towns from changing weather patterns. Now, with landmark federal laws—including the Infrastructure Investment and Jobs Act and Inflation Reduction Act—bringing significant public capital and tax credits to further incentivize private investment, the transition is poised to gain speed in the coming decade.

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The rise of a green economy has also brought a renewed focus on green jobs. To put all this public and private capital to use, the country needs a sizable workforce to construct new power plants and transmission lines, modernize older buildings, and plan and deliver more resilient communities. Ideally, the transition to a green economy should offer durable and growing career pathways while it cleans the air, protects American neighborhoods, and grows U.S. industries.

However, there is reason for skepticism over whether there are enough workers ready to pursue all these projects. The workers who construct, operate, and maintain U.S. infrastructure are either in [short supply, aging, or leaving their jobs rapidly](https://www.brookings.edu/blog/the-avenue/2023/05/11/the-incredible-shrinking-infrastructure-workforce-and-what-to-do-about-it/) (<https://www.brookings.edu/blog/the-avenue/2023/05/11/the-incredible-shrinking-infrastructure-workforce-and-what-to-do-about-it/>). Transportation departments, water utilities, and other employers are struggling to [retain talent](https://www.brookings.edu/articles/infrastructure-workforce/) (<https://www.brookings.edu/articles/infrastructure-workforce/>), let alone find [let alone find](https://www.brookings.edu/articles/how-state-and-local-leaders-can-harness-new-infrastructure-funding-to-build-a-stronger-more-inclusive-workforce/) (<https://www.brookings.edu/articles/how-state-and-local-leaders-can-harness-new-infrastructure-funding-to-build-a-stronger-more-inclusive-workforce/>) the millions of new workers needed in the skilled trades and other related positions in the coming years. Growing a clean economy will require more analysts, managers, and other white-collar professionals to oversee and assess humanmade and natural infrastructure systems. The concept of a green job is still far too amorphous, with little understanding of the knowledge and skills it will take to execute more climate-focused work.

Preparing a climate-ready workforce requires an all-hands-on-deck approach among public and private leaders across the country—including federal policymakers, state community college systems, and individual employers—but these capacity-related gaps often come to ground in U.S. cities and regions. [Past Brookings research \(https://www.brookings.edu/research/not-according-to-plan-exploring-gaps-in-city-climate-planning-and-the-need-for-regional-action/\)](https://www.brookings.edu/research/not-according-to-plan-exploring-gaps-in-city-climate-planning-and-the-need-for-regional-action/) has highlighted how cities are essential to driving climate action. Many cities continue to make bold climate pledges, including commitments to achieve net zero emissions and protect the most vulnerable. They also play an active role in workforce development, including by funding educational and related training programs. But without a coordinated, comprehensive plan to retrain and recruit workers in well-defined, green-related careers, city leaders will be unable to achieve their climate ambitions.

This brief assesses 50 large cities' climate action plans (CAPs), which ideally should encapsulate many of the elements essential to local infrastructure workforce development. Local leaders need to articulate their training and hiring priorities, the various sectors in need of talent, and the funding and timelines required to accelerate action. Of course, CAPs are not the only planning efforts addressing such needs—amid other programs launched by federal and state leaders, in addition to innovations in the private sector—but this brief shows that many local leaders are not in a position to harness new funding and that they have more workforce planning to do:

- **Most of the relevant cities—47 of 50—mention green jobs in their CAPs, but they only tend to do so in passing.** While some cities do not refer to green jobs at all in their plans, most cities only include a more general call for equity and greater net opportunities.
- **Most of the cities—40 of 50—emphasize energy projects when discussing workforce needs, but considerably fewer cities emphasize workforce needs in terms of buildings, transportation, or other parts of the built environment.** Only about half of the cities (24) emphasize workforce needs around building upgrades and retrofits, while even fewer (20) emphasize these needs around transportation improvements.
- **Only 19 of the 50 cities include detailed information on collaboration with other institutional and organizational partners when discussing workforce development.** Examples of these partners include community colleges, community-

based organizations, and other groups essential to engaging new workers, training them, and providing supportive services.

- **Only 11 of the 50 cities include information on funding—or additional programmatic support—for workforce development.** Many cities do not spell out clear costs for needed training programs or propose specific funding and financing to support them.
- **Only 9 of the 50 cities include specific dates, benchmarks, or timelines for workforce development.** Most CAPs lack details on the duration of any green workforce development efforts or benchmarks to measure success.

This research brief does not aim to precisely define green jobs, especially amid continued debates among policymakers and researchers on how to isolate, measure, or forecast such employment figures. Rather, this brief seeks to address the information deficits limiting local and regional planning about green jobs. It first examines the scope of the green jobs challenge by outlining the major skills and training needs, before considering some of the essential ingredients for ongoing local workforce development planning. Then, using detailed findings from our review of 50 municipal CAPs, we describe many of the successful practices that city leaders and other stakeholders can adopt to expand climate-focused talent development. America is poised to unleash generation-defining climate investment—and the American worker is poised to be a central part of these efforts.

A full list of the 50 cities analyzed is available in an interactive map below and described more extensively in a [downloadable methods appendix \(https://www.brookings.edu/wp-content/uploads/2023/07/Green-Jobs-50-Cities-Scan_Methodological-appendix.pdf\)](https://www.brookings.edu/wp-content/uploads/2023/07/Green-Jobs-50-Cities-Scan_Methodological-appendix.pdf).



FRAMING THE GREEN JOBS CHALLENGE AND OPPORTUNITY

Hiring and training more workers in the green transition to a cleaner, more resilient economy represents a huge challenge, but also a huge opportunity. New technologies and designs—including solar panels and rain gardens—are spreading across the country, and the scale of needed climate investment to fuel this transition could [exceed \\$2.5 trillion over the next decade \(https://www.brookings.edu/research/a-new-climate-finance-framework-for-investing-in-urban-resilience/\)](https://www.brookings.edu/research/a-new-climate-finance-framework-for-investing-in-urban-resilience/), as [cited by](#) the U.S. Department of Treasury. Combined with historic flows of federal funding, this massive surge in investment will require local leaders from utilities, transportation agencies, and other infrastructure entities to carry out a variety of energy, water, transportation, and related improvements.

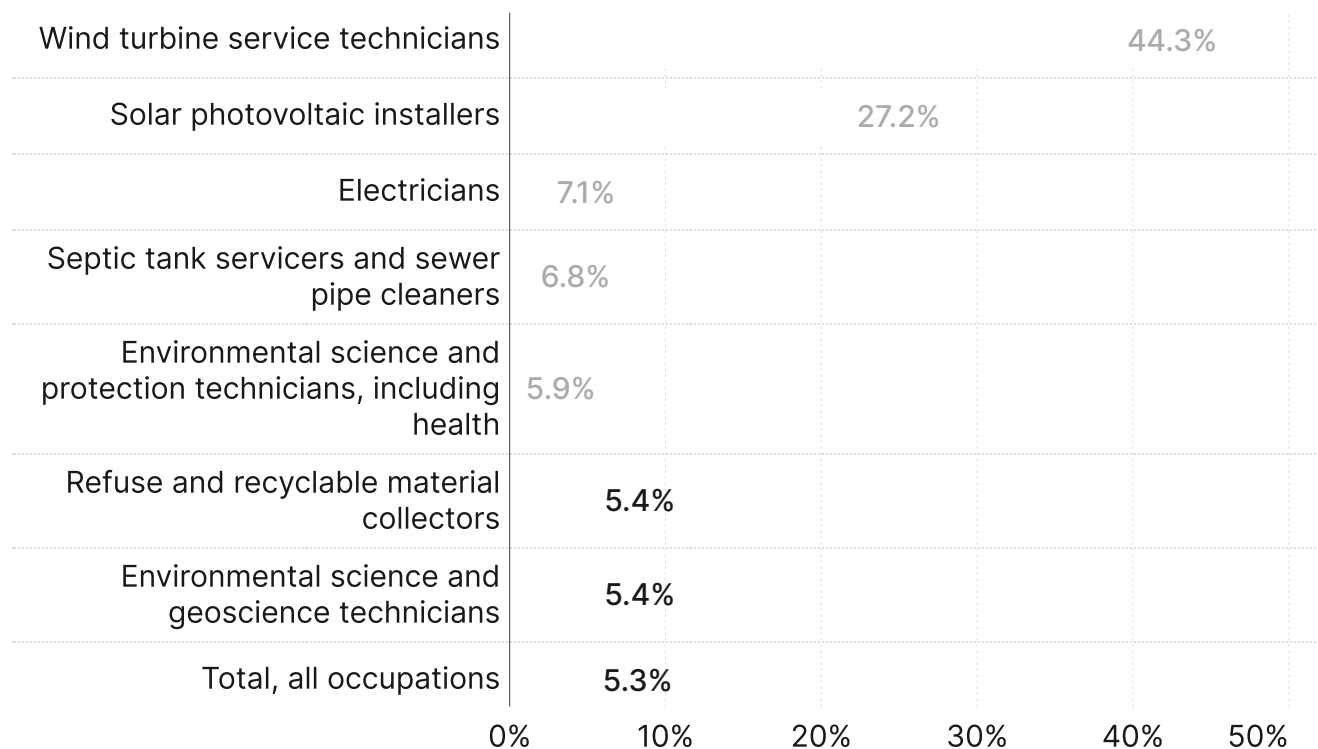
To complete these projects, [millions of additional workers](#) will likely be needed in the years to come, on top of the [8 million workers](#) already involved in renewable energy alone; yet the occupations these workers fill, the tasks they carry out, and the training pathways available to them are often poorly defined and addressed across the country. Many of these jobs are not limited to short-term construction but are involved in a variety of operations and maintenance activities over many years, extending well beyond power plants and transmission lines. In turn, more jobs are emerging as the green economy transitions; according to [analysis by Lightcast and WorkingNation](#), there has been a 50 percent increase in the number of green jobs since 2019.

Projections from the U.S. Bureau of Labor Statistics (BLS) as seen in figure 1 illustrate [further gains through 2031](#) across a variety of occupations, including wind turbine technicians (+44.3%), solar installers (+27.2%), electricians (+7.1%), and recyclable material collectors (+5.4%)—all occupations whose rate of growth is projected to be faster than the national average across all occupations (+5.3%).

FIGURE 1

Fast-growing green occupations, by percent employment change

2021 to 2031



Source: Brookings analysis of BLS Employment Projections data



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Still, since green jobs lack a consistent definition among policymakers, practitioners, and researchers, it can be difficult to quantify the full range of workers needed and to characterize the exact nature of the work they must be prepared to do. [A 2019 Brookings report \(https://www.brookings.edu/research/advancing-inclusion-through-clean-energy-jobs/\)](https://www.brookings.edu/research/advancing-inclusion-through-clean-energy-jobs/) explores 320 unique occupations spread across three major industrial sectors: clean energy production, energy efficiency, and environmental management. The report highlights the wide variety of workers involved in the green

transition—including electricians, roofers, and septic tank servicers—and their concentration in the skilled trades. Several additional reports and research efforts over the last few years—including the [Department of Energy's Energy and Employment Report](#), the [Labor Center Green Economy Program](#) at the University of California, Berkeley, and past [BLS green job surveys](#), among [many](#) [other](#) analyses—similarly describe the enormous range of industries and workers involved in the green transition.

Rather than defining and counting a specific number of green jobs, this research brief is more concerned with the major workforce development needs facing local leaders amid the green transition—and amid the current influx of federal funding. The brief considers the broadest array of positions involved in carrying out activities with environmental benefits and what types of training and preparation workers will need in support of a [long-term talent pipeline \(https://www.brookings.edu/blog/the-avenue/2021/01/29/biden-needs-to-create-an-infrastructure-talent-pipeline-not-just-more-jobs/\)](https://www.brookings.edu/blog/the-avenue/2021/01/29/biden-needs-to-create-an-infrastructure-talent-pipeline-not-just-more-jobs/). Training the next generation of green workers hinges on more intentional, proactive local leadership around a core set of challenges:

- **The need to emphasize green skills more than green jobs.** Building knowledge and awareness in science, technology, engineering, and math (STEM) fields is especially important for prospective workers in these careers, knowledge often gained through on-the-job training and [work-based learning opportunities \(https://www.brookings.edu/research/desegregating-work-and-learning/\)](https://www.brookings.edu/research/desegregating-work-and-learning/) such as apprenticeships and internships. At the same time, based on recent job postings, [research from LinkedIn](#) notes several green skills that these workers are gaining as a result: environmental auditing, environmental remediation, ecosystem management, and more. Yet not enough workers are gaining these skills fast enough according to [analyses by Lightcast and other researchers](#). Even if these workers can gain knowledge and skills without extensive post-secondary education—[roughly 50 percent of workers \(https://www.brookings.edu/wp-content/uploads/2019/04/2019.04_metro_Clean-Energy-Jobs_Report_Muro-Tomer-Shivaran-Kane.pdf#page=18\)](https://www.brookings.edu/wp-content/uploads/2019/04/2019.04_metro_Clean-Energy-Jobs_Report_Muro-Tomer-Shivaran-Kane.pdf#page=18) involved in energy efficiency, for instance, only have a high school diploma or less education compared to about a third of all workers nationally—that does not mean they are doing so. They have greater reliance on certifications, licenses, and other credentials, which may [not always be easy to obtain or hold onto](#) over time depending on their employer, geographical location, or life circumstances.

- **The need to recognize the greening nature of existing work**, including in occupations that many employers may not consider green. Managing the green transition not only includes physical infrastructure investments, but also investing in individual workers who are going to oversee these projects and must navigate a changing workplace, where new tasks, skills, and competencies will be necessary. For example, with additional federal tax credits to upgrade home energy systems, heating, ventilation, and air conditioning (HVAC) technicians will need to install heat pumps and deal with building retrofits. Will there need to be more HVAC technicians? Maybe, maybe not. But HVAC technicians will need to have more and different skills. The nature of their work is changing, and that [requires more intentional training and educational efforts—and likely credentials ↗](#). It is in the [broader context of sustainability and adaptability ↗](#) that leaders need to view the transition of current work.
- **The need to boost equity and reach more and different types of workers.** Although green jobs offer more competitive pay—exceeding national mean wages by up to [19 percent, in some cases \(https://www.brookings.edu/wp-content/uploads/2019/04/2019.04_metro_Clean-Energy-Jobs_Report_Muro-Tomer-Shivaran-Kane.pdf#page=16\)](#)—many prospective workers struggle to seize such opportunities. That is especially the case for women and people of color who have traditionally been [underrepresented across the infrastructure space \(https://www.brookings.edu/research/reversing-americas-poor-track-record-on-inclusivity-in-infrastructure-jobs/\)](#), including in several specific green jobs. Under 20 percent of workers in clean energy production and energy efficiency are women [according to past Brookings research \(https://www.brookings.edu/wp-content/uploads/2019/04/2019.04_metro_Clean-Energy-Jobs_Report_Muro-Tomer-Shivaran-Kane.pdf#page=25\)](#), while Black workers fill less than 10 percent of these jobs. A lack of awareness that these careers exist, a lack of flexibility around training, and a lack of supportive services (such as childcare) act as barriers. Meanwhile, existing workers in fossil fuel industries, such as mining and oil and gas extraction, [face a number of “just transition” issues \(https://www.brookings.edu/research/how-renewable-energy-jobs-can-uplift-fossil-fuel-communities-and-remake-climate-politics/\)](#) as they may lose their jobs or look to fill new green jobs.

Addressing the green jobs challenge requires national action—among [policymakers ↗](#), [federal agencies ↗](#), [national associations ↗](#), and other groups. Private-sector leaders, including employers, also need to recruit and train more workers. But given the

importance of local governments owning and operating infrastructure, leading economic development, and designing workforce development plans, city leaders are essential for supporting the green transition on the ground. Their ability to target new federal funding around upskilling and reskilling, community outreach, and other activities will be crucial for preparing workers for this transition.



EXPLORING WHAT A GREEN JOBS PLAN SHOULD INCLUDE

The green transition is already happening, given the emergence of new technologies and the rise of more frequent climate impacts. And the influx of new federal climate funding offers unparalleled opportunities to embrace this transition, while preparing more workers for green jobs. But are cities ready to manage all these workforce needs?

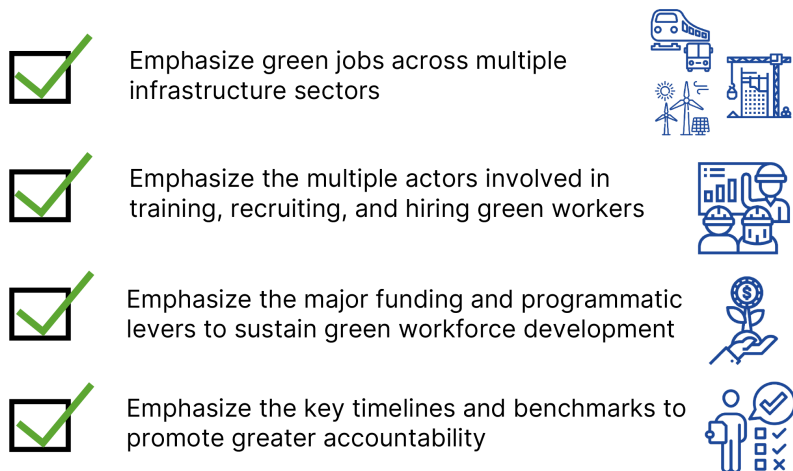
Too often, policymakers overemphasize short-term job creation and a [narrow range of fast-growing positions](#)—such as solar installers and wind turbine technicians. They may overstress [short-term construction projects and needed labor inputs](#) (<https://www.brookings.edu/interactives/beyond-shovel-ready-the-extent-and-impact-of-u-s-infrastructure-jobs/>). Or they may overemphasize short-term training and other needed credentials to get more workers on the job quickly, rather than supporting [more portable, stackable credentials](#). Local leaders face a need to

develop comprehensive, longer-lasting plans that not only capitalize on the current window of federal funding, but also use this window to support systematic changes to their workforce development approaches. Ideally, plans around green jobs would promote more collaboration among different employers, educators, and other regional actors; create more visible and flexible hiring and training strategies; and define more sustained funding and data-driven benchmarks to guide future action.

Just as with their [CAPs](#)—centralized documents that pledge specific reductions in greenhouse gas emissions and outline detailed steps to help with those efforts—cities can benefit from roadmaps to guide action around green workforce development. Whether these green jobs plans are standalone documents, nested within a city’s CAP, or contained in other regional strategies is beside the point. Any green jobs plan should address four key ingredients (see figure 2):

FIGURE 2

Four key tasks for city leaders on green workforce development planning



Source: Brookings’ authors



- **Emphasize green jobs across multiple infrastructure sectors.** Again, while no single definition or statistical measure captures the full range of green jobs across the country, these jobs touch several different parts of the built environment and involve a variety of activities across a project’s full lifecycle. Green workers, as with [all types of infrastructure workers \(https://www.brookings.edu/blog/the-avenue/2014/05/09/infrastructure-jobs-theyre-more-than-you-think/\)](https://www.brookings.edu/blog/the-avenue/2014/05/09/infrastructure-jobs-theyre-more-than-you-think/), are not just

involved in clean energy projects, such as power plant upgrades or transmission and distribution line installation. Nor are they just involved in simply [building new facilities](#) such as charging stations over a few months. Rather, these workers are responsible for constructing, operating, and maintaining more sustainable and resilient improvements across a variety of energy, transportation, water, and other systems over many years. As the Department of Labor emphasizes in its own [occupational planning efforts](#), these workers include construction managers who oversee green building retrofits, bus drivers and mechanics who operate and maintain new electric vehicles, and chief sustainability officers and energy auditors who help regulate and monitor all these activities. Local leaders navigating the green transition similarly need to consider the multiple branching career pathways—and multiple employers and workers—involved in ongoing planning efforts.

- **Emphasize the multiple actors involved in training, recruiting, and hiring green workers.** Given the wide range of industrial activities and workers involved in the green transition, it stands to reason that a wide range of actors are involved in filling all these shoes. For starters, these actors include local government leaders, including mayors, planners, and other practitioners who develop and implement environmental policies and coordinate economic and workforce development activities—particularly on [workforce development boards](#). Public and private employers—including energy and water utilities, transportation agencies, construction firms, and other contractors—are directly responsible for identifying job candidates, [hiring a more diverse, local pool of workers](#), and equipping them with the skills and experience they need on the job. Educational institutions, particularly community colleges and technical schools, [develop curricula](#), [offer courses](#), and immerse students in career fields in this space. Community-based organizations, such as [nonprofits that provide supportive services](#), are vital to helping more diverse, lower-income job seekers navigate these careers. And labor groups, including [unions and other alliances](#), are central to protecting and negotiating for workers.
- **Emphasize the major funding and programmatic levers needed to sustain green workforce development activities.** Even with a surge in federal infrastructure funding—including [additional eligibility and flexibility](#) (<https://www.brookings.edu/research/how-state-and-local-leaders-can-harness-new-infrastructure-funding-to-build-a-stronger-more-inclusive-workforce/>) for workforce development—local leaders have a constrained set of financial, technical, and programmatic resources to accelerate planning and training for green jobs. (A future Brookings brief will explore specific pots of federal funding for these

activities.) Local governments have limited budgets and revenue streams for climate planning in general, typically as part of their environmental departments. Meanwhile, labor departments and workforce development boards consistently lack durable funding or staff to support more [forward-looking planning, forms of collaboration, and supportive services \(https://www.brookings.edu/blog/the-avenue/2022/11/10/how-local-leaders-can-prepare-a-workforce-of-the-future-three-takeaways-from-the-transforming-cities-lab/\)](https://www.brookings.edu/blog/the-avenue/2022/11/10/how-local-leaders-can-prepare-a-workforce-of-the-future-three-takeaways-from-the-transforming-cities-lab/) . Identifying new pots of funding, supporting greater cross-agency coordination [via intermediary organizations ↗](#), and experimenting with new programmatic approaches—especially around [work-based learning and career and technical education ↗](#)—are among the steps local leaders can take to build capacity, steps that ideally would be captured in their plans. Critically, since the private sector will employ many green workers, and will benefit from enhanced skills and a larger labor pool, city officials should find ways to secure direct funding from industries with growing demand.

- **Emphasize the key timelines and benchmarks required to promote greater accountability.** Because cities are making time-based climate pledges and the private sector continues to pour more money into specific climate-focused projects, city workforce strategies should be clear about how many workers a regional economy needs and by when. Those inputs will create a powerful tool to estimate labor shortfalls. City leaders can also use a more consistent framework to define job quality, including the types of skills developed, levels of pay offered, and individual worker outcomes achieved in their green workforce development efforts over the next few years. Some individual employers, [such as water utilities \(https://www.brookings.edu/blog/the-avenue/2018/03/06/investing-in-water-infrastructure-and-workers-examining-the-bay-areas-regional-approach/\)](https://www.brookings.edu/blog/the-avenue/2018/03/06/investing-in-water-infrastructure-and-workers-examining-the-bay-areas-regional-approach/) , are already doing just that while they recruit and train a more diverse pool of workers as water treatment operators, environmental technicians, and other mission-critical occupations in their annual capital planning process. The Department of Labor is also [using ↗](#) a definition of good jobs in its infrastructure-related work.

In this way, green jobs plans are not just another training exercise aimed at filling a handful of positions in the short term. As local leaders access new federal infrastructure funding, they will have chances to fill short- and long-term hiring and training gaps by [testing new ways ↗](#) to do projects, bridging planning across multiple partners, and reaching disadvantaged workers.

Critically, their eligibility and competitiveness to receive such funding depends on it, given the parameters for [certain federal grants](#) and President Biden and his administration's overall emphasis on [climate equity](#). Now is the time to demonstrate a willingness and capacity to lead forward-looking green workforce development efforts.



ASSESSING CURRENT GREEN WORKFORCE DEVELOPMENT EFFORTS WITHIN CAPS

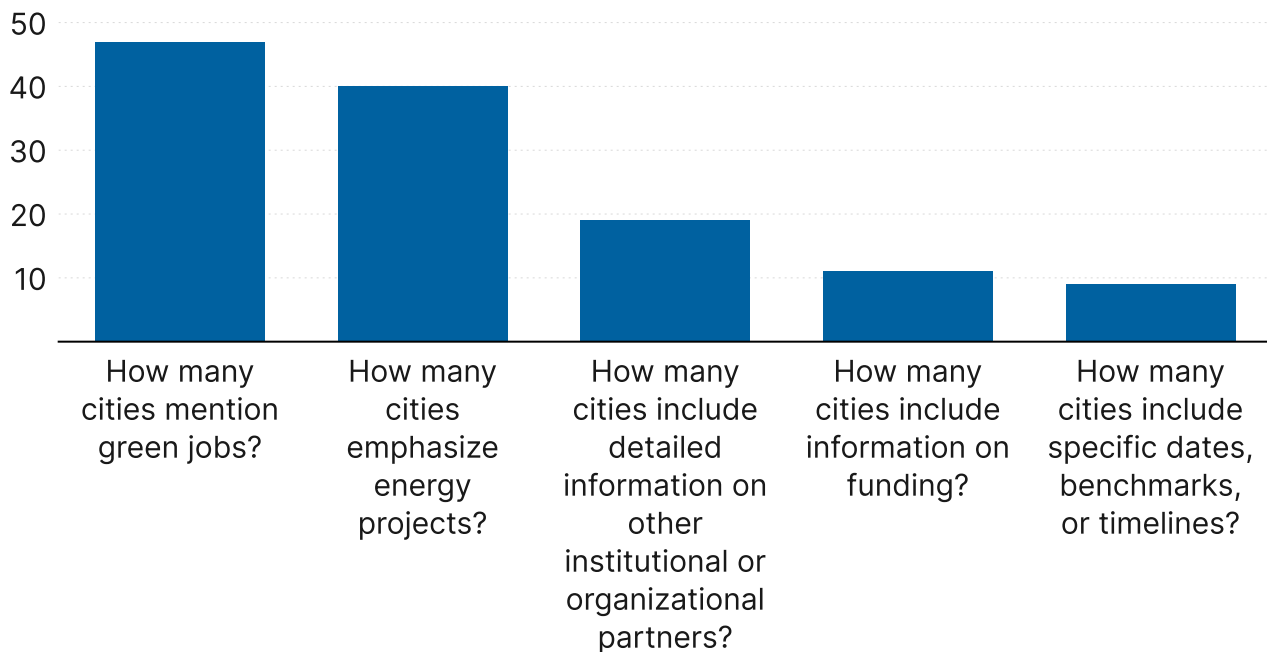
CAPs have emerged as the leading way for cities to define their climate ambitions and activities. CAPs also serve as ways to boost coordination among the multiple local jurisdictions and entities involved in climate planning, including counties and related authorities (such as transit agencies and utilities). Ideally, workforce goals and strategies would appear in these plans too, as cities look to adopt clean electricity, protect vulnerable populations, and achieve other climate-focused outcomes.

Building off [prior Brookings analysis on local climate planning \(https://www.brookings.edu/research/not-according-to-plan-exploring-gaps-in-city-climate-planning-and-the-need-for-regional-action/\)](https://www.brookings.edu/research/not-according-to-plan-exploring-gaps-in-city-climate-planning-and-the-need-for-regional-action/), we examined the extent to which 50 U.S. cities have incorporated considerations about green jobs in their CAPs, using a two-step process. First, we judged whether a given city's CAP even mentions

green jobs. Second, we explored the level of detail around the four ingredients described in the prior section: (1) the variety of infrastructure sectors described, (2) the range of actors involved, (3) the funding levers identified, and (4) the timelines and benchmarks established. Viewed in isolation, CAPs are obviously not designed to define or lead all the various workforce development efforts needed across cities in the green transition. However, they represent the most comprehensive documents around reductions in greenhouse gas emissions (and climate action more broadly), capture a city's major planning and programmatic priorities, and signal immediate and future steps toward implementation. A downloadable appendix provides more background information on the scope and methods of this analysis.

Most cities are not ready to maximize green workforce development, at least based on their most current CAPs. Local governments responsible for developing these plans tend to lack clarity around the workforce implications of their climate investments, struggle to identify clear partnerships to train green workers, and fail to go into much detail on durable funding streams or programs to accelerate green workforce development over time (see figure 3).

Number of city climate action plans describing different elements of green workforce development



Source: Brookings' analysis of municipal CAPs

B | Brookings Metro

[Download image](#)

Most cities—47 of 50—mention green jobs in their CAPs, but they only tend to do so in passing.

While some cities, such as [Las Vegas](#), do not refer to green jobs at all, most cities include a broader call for equity and opportunities in terms of future job creation. From [Baltimore](#) to [Tulsa](#), these plans discuss a range of projects, such as additional recycling, tree plantings, and building retrofits that will support local jobs, but they tend to lack dedicated strategies (or chapters) that include steps for measurement, funding, partnerships, and overall implementation.

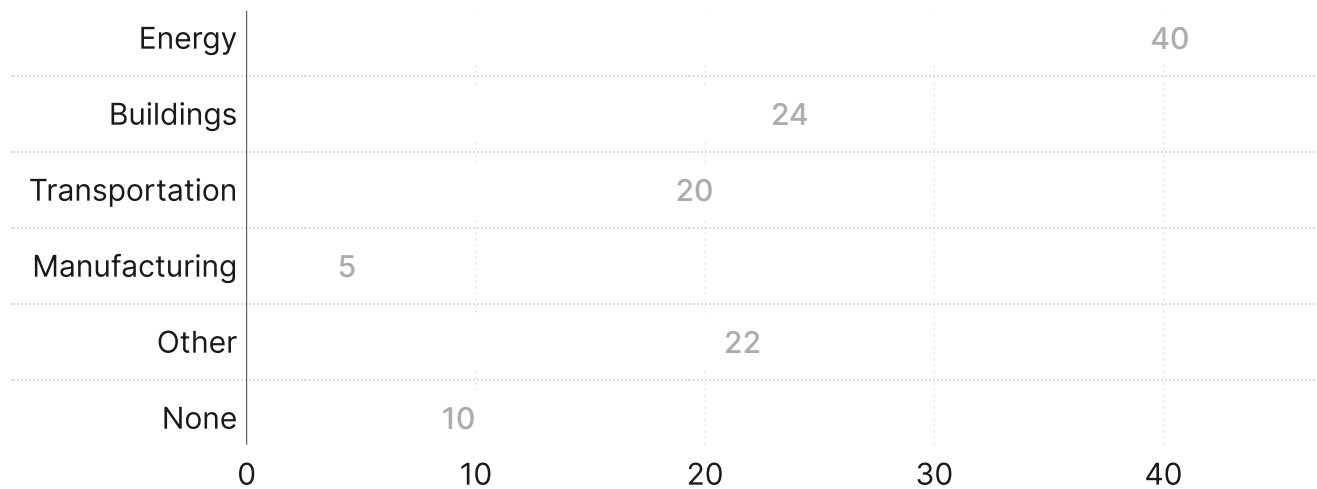
The cities that do go into greater detail include specific programs, cost estimates, and other milestones to guide action. Two of the more prominent examples include the Green Cincinnati Plan and [Los Angeles' Green New Deal](#). Leaders in Cincinnati outline a “City-University-Corporate Partnership for Education” that will target students, young professionals, and low-income residents to enter green careers in

three to five years. Meanwhile, leaders in Los Angeles include an entire chapter on “Prosperity and Green Jobs,” with the aim to create 400,000 green jobs by 2050 by expanding sector partnerships, developing new green jobs courses in the community college system, and highlighting specific climate projects and place-based innovations already underway. Whether these cities can act on all their stated goals remains to be seen, but there is at least a template for action in place within their CAP.

Most cities—40 of 50—emphasize energy projects when discussing workforce needs in their CAPs, but considerably fewer cities emphasize these issues in terms of buildings, transportation, or other parts of the built environment.

Only about half of the cities (24) emphasize workforce needs in terms of building upgrades and retrofits, while even fewer (20) emphasize these needs in terms of transportation improvements. Just five of the cities emphasize workforce needs in terms of manufacturing (see figure 4). For instance, cities like [Portland](#), Oregon; [Boise](#), Idaho; and [Sacramento](#), California all stress jobs when discussing the energy transition—a central component of their plans and many other CAPs. That is especially true when they describe the jobs connected to renewable energy and the installation of clean energy technologies in buildings and other facilities. The [Houston Climate Action Plan](#) similarly emphasizes investing in jobs as part of the energy transition and in terms of optimizing building operations.

Frequency of sectors mentioned across 50 climate action plans



Source: Brookings’ analysis of municipal CAPs



Note: The other category includes waste management, food systems, and other miscellaneous activities

[Download image](#)

Plans that go a step further not only describe jobs connected to clean energy upgrades, but also explore careers in transportation, water, manufacturing, waste management, and even food systems. The [Cleveland Climate Action Plan](#) identifies “good jobs, green jobs” as key considerations across several cross-cutting priorities, including electricity generation, wastewater management, and light equipment manufacturing. [Washington D.C.’s Sustainable DC 2.0 Plan](#) similarly stresses green jobs and workforce development priorities across several sectors, pointing to prevailing training programs and projects involved in solar installation, building rain gardens, and other neighborhood improvements.

Only 19 of 50 cities include detailed information on collaboration with other institutional and organizational partners when discussing workforce development.

Examples of these partners include community colleges, other local government departments, and community-based organizations, among many additional groups. Since local environmental departments tend to take the lead on developing CAPs, the ultimate steps toward implementation may not always be spelled out clearly. This lack

of clarity is widespread, especially when it comes to defining needed collaboration around green workforce development and related training pathways. For example, cities like [Albuquerque ↗](#), New Mexico; [Kansas City ↗](#), Missouri; and [Richmond ↗](#), Virginia spell out several green jobs priorities in their CAPs—including educational campaigns, local hire programs, and other areas for future action—but the specific organizations involved in these efforts are not always clear, nor is the process for expanding such partnerships.

In contrast, the [Chicago Climate Action Plan ↗](#) identifies several key actors who are responsible for overcoming training hurdles; better measuring worker outcomes; and aiming to support equitable green jobs, including city departments involved in transportation, waste, and other functions. The [Detroit Sustainability Action Agenda ↗](#) also identifies green jobs and education as central priorities, working in concert with several partners in philanthropy and economic development. For instance, by working with the Detroit Economic Growth Association and local green industry employers, city leaders are looking to build off existing contractor training programs involved in stormwater infrastructure and expand youth workforce efforts via Grow Detroit's Young Talent program.

Only 11 of 50 cities include information on funding, or additional programmatic support, for workforce development.

[As with their broader climate planning efforts](#)

(<https://www.brookings.edu/research/how-us-cities-are-finding-creative-ways-to-fund-climate-progress/>), many cities do not spell out clear costs for needed training

programs or propose specific funding and financing to support them. As seen in

[Oklahoma City ↗](#), Oklahoma and [Louisville ↗](#), Kentucky, CAPs may point to the importance of preparing workers for the green transition and the potential to diversify the economic opportunities available to residents, but they do not necessarily specify how—or how much money—those efforts will take. If anything, they may refer to prevailing training approaches or seek to establish ad-hoc programs, with broad calls for additional state legislative support and education funding.

However, several cities have developed CAPs with clearly articulated training programs and funding sources. Denver's [Climate Protection Fund Five-Year Plan ↗](#) is among the most detailed examples, as it allocates nearly \$40 million in dedicated

funding annually to a range of climate investments, including equitable green workforce development. Denver's Office of Climate Action, Sustainability, and Resiliency is working closely with Denver Economic Development and Opportunity (DEDO) to create a green workforce strategy centered on measurable and fundable training outcomes, especially for women and people of color. While not quite as comprehensive on workforce development efforts specifically, [Climate Smart San Jose](#) [↗](#) does present the costs and benefits for local, transit-oriented jobs in addition to outlining different funding sources for a range of possible proposals.

Only 9 of 50 cities include specific dates, benchmarks, or timelines for workforce development.

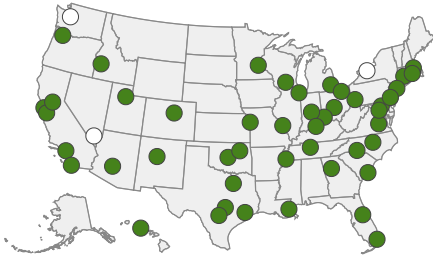
Not surprisingly, since many CAPs lack details on specific programs, partnerships, and funding, they also lack details on the duration of any green workforce development efforts or benchmarks for measuring success. [Charleston](#) [↗](#), South Carolina, and [Hartford](#) [↗](#), Connecticut, are among the cities that mention green jobs and the potential for job creation over time, but they do not go into much depth on any estimates or timeframes. Meanwhile, other cities such as [Boston](#) [↗](#), Massachusetts, and [Dallas](#) [↗](#), Texas, have more comprehensive CAPs overall and discuss job impacts while striving for reductions in greenhouse gas emissions—including through renewable energy upgrades, building retrofits, and more—yet they do not describe the scale or reach of such impacts either.

The few plans that do specify clearer green workforce development targets and timelines include many of those cities previously described, such as Los Angeles and Detroit. Both discuss specific job creation goals, needed levels of green investment, and reducing unemployment gaps. [Sustainable Columbus](#) [↗](#) represents another CAP that also sets clearer targets and timelines for action; it aims to improve access to “quality jobs” and expand workforce diversity through several initiatives, including the establishment of “green job qualifications” across the city, annual reporting mechanisms, and supporting 10,000 new green jobs by 2030 through additional financial assistance for local businesses.

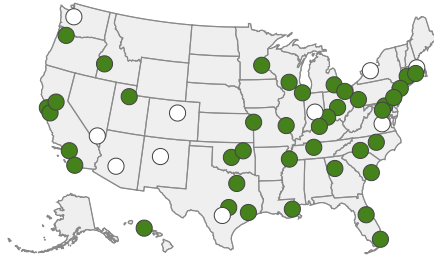
What do city climate action plans (CAPs) describe around green workforce development?

Included in a city CAP?
 No Yes

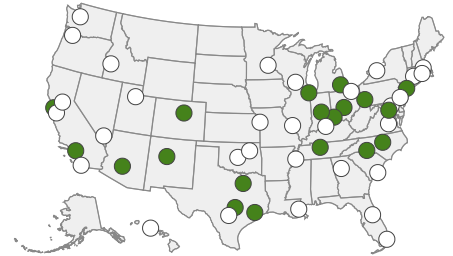
Does the city CAP...
 ...mention green jobs?



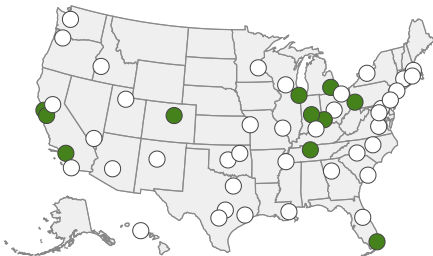
...emphasize green workforce needs
 in terms of energy projects?



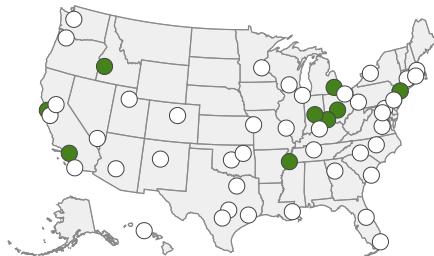
...discuss efforts to collaborate
 with other partners on green
 workforce development?



...include information on
 funding for green workforce
 development?



...provide specific dates,
 benchmarks, or timelines for
 green workforce development?



Brookings analysis of city climate action plans. Additional details on the 50 cities and CAPs analyzed are available in a downloadable methods appendix.



OTHER EMERGING EFFORTS INVOLVING GREEN JOBS

CAPs, of course, only scratch the surface of many emerging green jobs efforts underway across different cities nationally. This is especially true given the enormous federal incentives for cities to do more on this issue in the coming years; many cities have only launched dedicated and coordinated green jobs strategies over the past couple years. Notable examples include Austin’s [Green Pathways Plan](#) and the [King County Green Jobs Strategy](#) for the Seattle metropolitan area, both of which include numerous statistics, partnerships, and forms of programming around green workforce development. They describe short- to long-term training efforts, including building career readiness, equipping more workers with needed credentials, and reaching disadvantaged communities. Multiple other cities have started to develop more

detailed green workforce development efforts of their own, including [Miami](#), Florida, and [New York City](#).

These city-led efforts also do not capture all the various green jobs plans and programs being launched across different organizations and states, as well as nationally and internationally. For instance, the [EcoInnovation District Plan](#) in Pittsburgh, Pennsylvania; the [Bridges to Green Jobs Program](#) of the Local Initiatives Support Corporation (LISC) Boston; and the [Green Jobs Training Program](#) by Detroiters Working for Environmental Justice all represent place-based, bottom-up efforts aimed at supporting green career pathways in partnership with multiple community organizations. The latter two examples—in Boston and Detroit—are from non-profit organizations, specifically. States such as [New Jersey](#), [Pennsylvania](#), and [Colorado](#) are among those with plans and analyses aimed at better defining current and future opportunities for green jobs. Continued national and international efforts around green jobs—including city climate planning coalitions—are also evident among groups such as [C40](#) that is based in the U.K., but does work across nearly 100 cities globally.

Momentum for green jobs is building across different cities in response to new technologies, rising climate impacts, and new funding opportunities. But is this interest too little, too late when it comes to the funding from the Infrastructure Investment and Jobs Act and the Inflation Reduction Act? Are local leaders truly ready to harness this funding now to promote greater equity and long-lasting career pathways over time? Or are they set up to lunge at pots of money with a lack of clarity around key workforce partners, programs, and plans? Time will tell how effectively local leaders will use this federal funding, but their existing CAPs show there is still a lot of work to do. Mentioning the importance of green jobs and focusing on their role in energy upgrades, for instance, shows that city leaders are weighing workforce considerations in their ongoing planning efforts. Yet, the lack of clear collaborations, funding sources, and timelines for action could limit the reach of these efforts.

Business-as-usual approaches—centered around the same types of infrastructure projects and hiring and training approaches—seem likely across many cities, but leaders still have a chance to set a new course, experiment with new forms of collaboration, and ultimately equip workers with the skills and training they need to thrive in the green transition.

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