Unlocking new federal infrastructure funding to drive green workforce development

Executive summary

The transition to a cleaner, more resilient U.S. economy continues to gain speed. Shifts toward renewable energy generation, battery technologies, and adaptive designs are reducing pollution and protecting our built environment amid climate change. But a lack of skilled workers to power the green transition is threatening to stall this momentum.

Whether constructing transmission lines, installing electric vehicle charging stations, or operating and maintaining more energy-efficient and storm-resistant buildings, millions of workers are already employed in this transition. Yet millions more are needed. Policymakers and researchers continue to debate the exact number and types of "green jobs" (broadly defined as positions involved in carrying out activities with an environmental benefit) emerging nationally, but one point is clear: The U.S. does not have a durable pipeline of talent ready to address these needs.

Similar to the country's broader infrastructure workforce, green workers tend to specialize in the skilled trades. Even though these positions pay competitive wages, tend to not require a four-year college degree, and have massive hiring needs, many prospective workers don't know such jobs exist or don't have flexible ways to get needed on-the-job training for them. That is especially the case for younger people, women, and people of color who lack supportive services such as child care and transportation, and face other long-standing barriers in the workplace. Meanwhile, employers—including utilities, contractors, and other public and private entities—compete against each other for a limited pool of talent.

The challenge—and opportunity—to connect more workers to green careers is even more urgent given the historic influx of federal funding for clean energy, transportation, water, and related improvements. Together, the Infrastructure Investment and Jobs Act (IIJA) and Inflation Reduction Act (IRA) are pumping $1.25 trillion across a variety of projects over the next five to 10 years, many of which focus on climate-related upgrades. As federal, state, and local leaders coordinate to implement all this funding, they are scrambling to simply get projects done. Harnessing this money to support workforce development is often an afterthought.

Local government and business leaders are in a prime position to accelerate new green investments and green workforce development efforts. Energy utilities, transportation departments, water agencies, and other local infrastructure owners and operators have widespread eligibility and flexibility to use federal funding for workforce development purposes. They can support apprenticeships, create additional work-based learning opportunities, and forge collaborations with community colleges, labor groups, and other partners. In other words, the IIJA and IRA give local leaders wide latitude to determine how—and how much—funding goes toward workforce development.

This brief builds off past Brookings research on city-led green jobs plans to examine what federal infrastructure funding is available to support green workforce development, with a particular focus on how local leaders can access workforce funding. That previous analysis showed local leaders must do more planning around green jobs, from collaborating with community partners to establishing detailed statistical benchmarks. This report describes what IIJA and IRA programs can aid in these efforts or (in many cases) reward localities for being proactive on their green workforce needs.

This report aims to help local leaders make more informed decisions around workforce development amid a deluge of documents on federal infrastructure funding and a range of competing priorities. We find that:

- **Fifty-four programs within the IIJA and IRA—totaling $75 billion—emphasize or allow green workforce development activities.** Only four programs in the IIJA and IRA (totaling $260 million) are exclusively dedicated to green workforce development. However, there is a broader set of 54 programs that offer flexibility for local leaders to use funding to support technical education, training, and other workforce-related activities. This flexibility comes despite the fact that these programs primarily focus on funding capital projects, particularly in energy and transportation. Ten of these 54 programs are tax credits within the IRA, which hold considerable promise in incentivizing action at a local level. But their ultimate reach and impact remain difficult to forecast.

- **A wide range of entities are eligible to receive IIJA and IRA funding for green workforce development activities.** Forty of the 54 previously mentioned programs (totaling $62 billion) include more than one eligible entity, such as educational institutions and nonprofit organizations. Government agencies most commonly receive funding, especially state and local government departments focused on infrastructure. But the flexibility built into the IIJA and IRA is already supporting new workforce programs and collaborations across the country.

- **Most IIJA and IRA green workforce-related programs have already started to provide funding.** Thirty-four programs (totaling $47 billion) have started to provide funding over multiple quarters throughout the federal fiscal calendar (October 2022 to September 2023). These span multiple agencies (e.g., Department of Energy, Department of Transportation), yet many are closing or about to close—signaling the need for local leaders to ensure timely grant applications.

As with the previous Brookings research, this report does not aim to precisely define green jobs, especially amid continued debates on how to isolate, measure, or forecast such employment figures. Rather, it aims to explore which federal infrastructure funding programs emphasize or allow green workforce development activities—filling a crucial information gap for local leaders pledging or already taking climate action.

We first contextualize the country's green workforce needs that the IIJA and IRA can potentially support. We then dive deeper into both laws to uncover the types of green-workforce-related programs and amount of funding available. Finally, we end with a discussion of where local leaders need to take their green workforce planning to maximize the current window of federal funding and beyond.

SECTION 1: CONTEXTUALIZING THE CHALLENGE AND OPPORTUNITY

Contextualizing the green jobs challenge and the federal funding opportunity

There is a widespread need to recruit, train, and hire workers for green jobs. From wind and solar power installations in Appalachia and the Mountain West to new flood barriers and rain gardens in New York, public and private leaders are investing in a variety of cleaner, more resilient infrastructure improvements that demand skilled workers. We have previously shown that 320 unique occupations are involved in clean energy production, energy efficiency, and environmental management. These sectors employ millions of workers in the skilled trades and other administrative, financial, and support occupations.

In turn, definitions of the green workforce—including its size, geographic extent, and the nature of its work—also vary considerably, as multiple Brookings publications have explored.

Article continues at link below

UNEMPLOYMENT

Region	September 2022	August 2022	September 2023	Percentage Point Change	
				1 month	*12 months*
San José–Sunnyvale MSA	2.4%	3.9%	3.3%	− 0.6	+ 0.9
San Francisco MD	2.2%	3.5%	3.0%	− 0.5	+ 0.8
California	3.7%	5.1%	4.9%	− 0.2	+ 1.2
United States	3.3%	3.9%	3.6%	− 0.3	+ 0.3

INDUSTRY EMPLOYMENT

Sector — September 2023	San Jose MSA	San Francisco MD	Combined Region	Percentage Change (Combined Region)	
				1 month	*12 months*
Total Nonfarm	**1,181,700**	**1,202,000**	**2,383,700**	− 0.7%	+ 1.5%
Construction	56,000	39,400	95,400	− 2.4%	− 0.7%
Manufacturing	179,400	38,900	218,300	− 0.8%	− 1.4%
Retail Trade	72,600	66,200	138,800	+ 0.4%	− 0.8%
Information	105,100	123,500	228,600	− 1.8%	− 1.1%
Professional & Business Services	253,700	311,100	564,800	− 1.8%	− 0.7%
Educational Services	90,100	82,100	172,200	+ 3.9%	+ 2.4%
Health Care & Social Assistance	148,400	129,500	277,900	+ 0.2%	+ 6.4%
Leisure & Hospitality	109,000	128,000	237,000	− 0.9%	+ 7.7%
Government	97,700	135,700	233,400	+ 2.4%	+ 1.7%

Note: San José MSA (San José-Sunnyvale-Santa Clara Metropolitan Statistical Area) = Santa Clara and San Benito Counties
San Francisco MD (San Francisco-Redwood City-South San Francisco Metropolitan Division) = San Mateo and San Francisco Counties

Source: California Employment Development Department, LMID

LABOR FORCE & ANNUAL CHANGE

Labor Force by NOVA Jurisdiction — *Santa Clara County (partial) + San Mateo County (complete)*

	Labor Force			Unemployment			Unemployment Rate		
	September 2022	September 2023	*Change*	September 2022	September 2023	*Change*	September 2022	September2023	*Change*
• San Mateo County	456,800	455,100	− 0.4%	9,800	13,200	+ 34.7%	2.1%	2.9%	+ 0.8
• Santa Clara County	1,049,900	1,050,500	+ 0.1%	24,800	34,100	+ 37.5%	2.4%	3.2%	+ 0.8
Cupertino	29,300	29,400	+ 0.3%	600	1,000	+ 66.7%	2.1%	3.3%	+ 1.2
Los Altos	14,900	14,900	0%	300	500	+ 66.7%	2.1%	3.2%	+ 1.1
Milpitas	41,200	41,300	+ 0.2%	1,000	1,500	+ 50.0%	2.5%	3.6%	+ 1.1
Mountain View	51,500	51,600	+ 0.2%	900	1,400	+ 55.6%	1.8%	2.8%	+ 1.0
Palo Alto	36,500	36,500	0%	700	1,000	+ 42.9%	1.9%	2.8%	+ 0.9
Santa Clara	73,600	73,700	+ 0.1%	1,600	2,300	+ 43.8%	2.2%	3.1%	+ 0.9
Sunnyvale	88,400	88,400	0%	1,800	2,600	+ 44.4%	2.0%	2.9%	+ 0.9
NOVAworks Region	*792,200*	*790,900*	*− 0.2%*	*16,700*	*23,500*	*+ 40.7%*	*2.1%*	*3.0%*	*+ 0.9*

Note: NOVAworks Region consists of seven cities in Northern Santa Clara County and the entirety of San Mateo County

Source: California Employment Development Department, LMID

REGIONAL LAYOFF ACTIVITY

September 2023 Layoff Events

Company	Location	# Affected
Alto Operations California	Belmont	34
Amgen	San Carlos	4
Bloom Energy Corporation	Sunnyvale	12
Charles River Laboratories	South San Francisco	55
Codexis	Multiple cities	59
Fish Market Restaurants	Multiple cities	140
Headway Technologies	Milpitas	88
Illumina	San Mateo	1
Microsoft	Mountain View	40
Robinhood Markets	Menlo Park	23
Universal Protection Service	Menlo Park	37
USRA at ARC	Mountain View	4
Total		**497**

WARN SUMMARY

Events YTD[†]: **276**

Individuals Affected YTD : **13,974**

Individuals Previous YTD[‡]: **2,454**

* **WARN:** Worker Adjustment and Retraining Notification
  (notice of mass layoff or closure)
† **YTD:** Year to Date
  (Calendar year: January 1–Present)
‡ **Previous YTD:**
  (Same date range as YTD, one year prior)

Note: Layoff data are preliminary and should be considered an estimate of monthly regional activity

Source: California EDD, CalJOBS: WARN Data