



TOPIC BRIEF

# Cities and Clean Energy Workforce Development

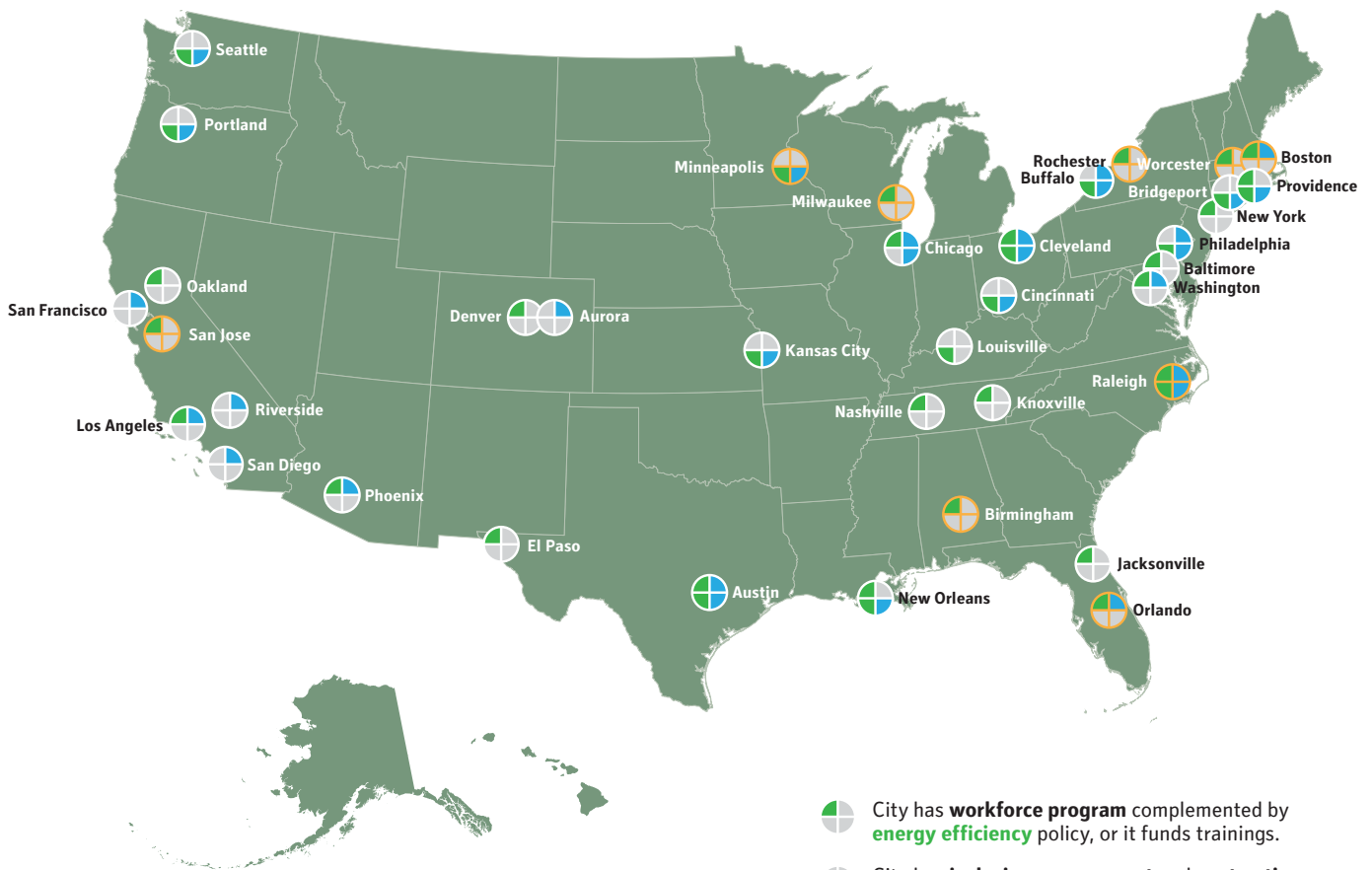
**Local governments across the United States are increasingly enacting policies and offering programs to save energy. Their success depends on a strong and capable energy efficiency workforce.**






To ensure that trained workers are available to capitalize on efficiency investments, local governments can set workforce development goals and coordinate training programs. They can also give underrepresented community members, such as women and minorities, equal access to energy efficiency jobs by implementing equity-focused workforce development programs and inclusive procurement and contracting policies. This brief provides an overview of policy options, a review of current city efforts, and two case studies of workforce programs that can serve as examples for others to adopt.

# Clean Energy Workforce Development Programs in Cities

ACEEE has identified 37 cities with energy efficiency and renewable energy workforce development strategies and/or programs.<sup>1</sup>

Cities take various approaches to workforce development for energy efficiency. In some cases, green-job goals guide a city's activities. In others, the city directly ties energy efficiency job creation to local efficiency programs or citywide policies, such as building energy benchmarking requirements.<sup>2</sup>



-  City has **workforce program** complemented by **energy efficiency** policy, or it funds trainings.
-  City has **inclusive procurement and contracting strategies** for **energy efficiency** projects.
-  City has **workforce program** complemented by **renewable energy** policy, or it funds trainings.
-  City has **inclusive procurement and contracting strategies** for **renewable energy** projects.
-  City has **workforce development program** with **equity component**.

We identified several common workforce development strategies in these cities and provide examples for each.

### **Align energy efficiency and workforce development goal-setting efforts.**

Milwaukee identified access to jobs as a top priority in its 2013–23 sustainability plan, ReFresh Milwaukee. The plan describes how actions across eight main themes, including buildings and energy, create jobs. ReFresh Milwaukee also includes a goal to grow its cluster of energy-efficient and clean tech companies to create local jobs and clean energy exports.

### **Partner with local energy efficiency businesses and utilities to create workforce development programs.**

Boston is working with both National Grid and Eversource (the city's gas and electric utilities, respectively) to leverage utility funding for energy efficiency training. The utilities reimburse tuition costs for eligible local government facilities staff for the 74-hour Building Operator Certification training. Denver worked closely with Xcel Energy to co-deliver training to its 1,200 trade contractors. Trainings covered topics ranging from completing health and safety repairs to increasing sales and obtaining Building Performance Institute certifications.

### **Create apprenticeship programs, particularly targeted toward young adults.**

San Jose's Work2Future program trains young adults from disadvantaged populations in energy-efficient building construction and places them in pre-apprenticeship programs. Since 2014, the program has successfully trained 276 young adults and has an 82% job placement rate.

### **Look to colleges and universities to help building owners and others meet energy efficiency and renewable energy policy requirements.**

The Los Angeles Trade Technical College offers a course to train building engineers to benchmark building energy use. Trainees participate in a pro bono benchmarking certification program and then work with economically disadvantaged building owners who cannot afford to hire an expert to help them comply with city benchmarking requirements.

### **Target marginalized groups through training programs.**

Boston developed a project labor agreement for energy efficiency improvements to public housing properties. The agreement provides pre-apprenticeship training to residents of Boston Housing Authority and Section 8 properties, young adults eligible for YouthBuild, and other low-income Bostonians.

## CASE STUDY

# City of Orlando Clean Energy Workforce Development Programs

**Orlando supports its local clean energy workforce through energy benchmarking workshops, a youth training program, and curriculum support for a local technical college.**

### **Benchmarking 101 Workshops**

For the past three years, Orlando has hosted free ENERGY STAR® 101 and 102 workshops and webinars to teach commercial building managers about building energy benchmarking. The city hosts these workshops in partnership with the United States Green Building Council (USGBC) and receives additional support from the City Energy Project, an initiative to improve the efficiency of large buildings in American cities. The workshops train participants on how to use ENERGY STAR Portfolio Manager to track energy performance at multiple properties and generate performance statements. The city also works with the Building Owners and Managers Association and the Apartment Association of Greater Orlando to recruit program participants.

### **Valencia College Energy Management and Controls Technology Program**

Orlando partnered with Valencia Technical College to develop the curriculum for an Energy Management and Controls Technology associate in science degree program. The program provides students with the necessary skills to efficiently manage and control electrical and mechanical systems in buildings.<sup>3</sup> The city reports that participants have varied in age and are racially diverse. With the opportunity to complement classroom time with internships, students can gain experience in the field. The program prepares students to pursue the following certifications: Association of Energy Engineers Certified Energy Efficiency Practitioner, International Society of Automation Certified Control System Technician Certification, and the Project Management Institute Certified Project Management Professional.







### GreenPrint Pilot Program

Orlando is in the process of creating a workforce development vocational training initiative called GreenPrint. In 2018, the city, IDEAS For US (a nonprofit), and esaSolar (a solar contractor) launched the first step of this initiative: a one-day pilot program called Brighter Futures. They enrolled 12 youth leaders from a low-income community in Orlando known as Parramore in a series of mini workshops on energy policy, solar energy basics, and solar installation. In summer 2019, the city worked with the USGBC and American Society of Heating, Refrigeration, and Air-Conditioning Engineers to expand the GreenPrint pilot to include energy efficiency–focused content. In the future, the city plans to offer the training to at-risk youth, veterans, and low-income community members.<sup>4</sup>

### Challenges

- **Recruitment.** The city faced difficulty recruiting new participants for benchmarking workshops.
- **Programming for different career levels.** The city offers workforce development programs for both college students and those already in the workforce.

### Takeaways

- **Green jobs creation target.** Orlando’s sustainability plan—Green Works Orlando—includes a green economy focus area through which the city set a goal to increase the green job count from 11,000 in 2018 to 45,000 by 2050. This includes jobs in green construction, renewable energy, and other sustainable industries.<sup>5</sup>
- **Connection to city policy.** Orlando’s Building Energy and Water Efficiency Strategy (BEWES) requires existing commercial and multifamily buildings larger than 50,000 square feet to benchmark whole-building energy use.<sup>6</sup> The City Energy Project helped Orlando develop BEWES and funded Orlando’s benchmarking 101 workshops to provide building management staff the training needed to carry out this policy.
- **Iterative program design.** The program issues a survey following each benchmarking workshop to gauge public opinion.

## CASE STUDY

# Chattanooga green|spaces, Build It Green Workforce Development Program

**In 2018, the city of Chattanooga partnered with the local nonprofit green|spaces to launch the Build It Green (BIG) workforce development program. BIG uses mentorship, soft-skill development, and technical training in the sustainable construction trades in its program model.<sup>7</sup>**

Over the course of the 12-week program, BIG prepares participants for entry-level residential energy services and weatherization jobs while cross-training them in community engagement.<sup>8</sup> Modeled after the Socially Equal Energy Efficiency Development program in Knoxville, BIG enrolls young adults from low-income communities. Program participants spend the first six weeks developing soft skills, learning how to engage their communities, and understanding how to conduct themselves professionally in the workplace. They spend the following six weeks sharpening technical skills through a combination of job shadowing and off-site training. Graduates earn Occupational Health and Safety Administration (OSHA) certification as well as certificates in lead abatement and trade education, ensuring the skills they develop from the program are transferable.<sup>9</sup> The program is funded primarily through a grant from the Southeast Sustainability Directors Network.<sup>10</sup> BIG built on its program model in 2019 by keeping cohorts small and working to increase demand for sustainable construction and socially equal job opportunities.





## Community Partners

Chattanooga and green|spaces partnered with the following organizations to deliver the BIG program:

- **The City of Chattanooga Office of Workforce Development, City Council, and Office of Public Safety** assisted with program funding and trainee recruitment.
- **Local specialty contractors and builders** mentored students and placed them in jobs.
- **Build Me a World**, a local nonprofit that supports community members who have experienced gang-related crime, offered a soft-skills training for BIG program participants who have been in and out of the reform system.<sup>11</sup>
- **The Association of General Contractors of East Tennessee** sponsored OSHA-10 certification courses and helped develop program goals.

## Challenges

The program experienced a few challenges during design and implementation.

- **Recruitment.** green|spaces faced difficulty finding individuals interested in energy-efficient construction.
- **Gender diversity.** green|spaces found it challenging to enroll women in the course.
- **Trade engagement.** green|spaces found it difficult to forge connections with trade personnel like HVAC technicians because they were often understaffed and busy.
- **Job retention.** Program graduates had difficulty keeping jobs after the program. BIG attempted to address this issue by reinforcing soft skills, such as timeliness in the workplace, in its training curriculum.

## Takeaways

- With each class, BIG exceeded its goal of a 75% graduation rate and a 90% job placement rate. Most graduates found a job in the field within six months.
- Businesses and students have responded positively to the program. Contractors have also been satisfied, and several made commitments to host specialty trainings and hire workers from the program.
- Despite a low citywide unemployment rate, green|spaces has led a successful workforce development program by targeting marginalized community members for enrollment. BIG recommends that other cities direct energy efficiency workforce development effort to these community members.

## ENDNOTES

- 1 D. Ribeiro, S. Samarripas, K. Tanabe, H. Bastian, E. Cooper, A. Drehobl, S. Vaidyanathan, A. Jarrah, and M. Shoemaker, *The 2019 City Clean Energy Scorecard* (Washington, DC: ACEEE, 2019). [aceee.org/research-report/u1904](http://aceee.org/research-report/u1904).
- 2 M. Shoemaker and D. Ribeiro, *Through the Local Government Lens: Developing the Energy Efficiency Workforce* (Washington, DC: ACEEE, 2018). [aceee.org/research-report/u1805](http://aceee.org/research-report/u1805).
- 3 Valencia College, "Future Students" (2019). [net1.valenciacollege.edu/future-students/degree-options/associates/energy-management-and-controls-technology/](http://net1.valenciacollege.edu/future-students/degree-options/associates/energy-management-and-controls-technology/).
- 4 C. Castro and B. Sellers, City of Orlando Office of Sustainability and Resilience, personal communication, October 24, 2019.
- 5 City of Orlando, *Green Works Orlando: 2013 Community Action Plan* (Orlando: City of Orlando, 2013). [www.cityoforlando.net/greenworks/wp-content/uploads/sites/9/2017/06/GreenWorksOrlando\\_CommunityActionPlan.pdf](http://www.cityoforlando.net/greenworks/wp-content/uploads/sites/9/2017/06/GreenWorksOrlando_CommunityActionPlan.pdf).
- 6 City of Orlando, "Building Energy and Water Efficiency Strategy" (2019). [www.cityoforlando.net/greenworks/building-energy-and-water-efficiency-strategy/](http://www.cityoforlando.net/greenworks/building-energy-and-water-efficiency-strategy/).
- 7 green|spaces "Build It Green" (2019). [www.greenspaceschattanooga.org/build-it-green](http://www.greenspaceschattanooga.org/build-it-green).
- 8 Ibid.
- 9 OSHA training teaches participants to recognize, avoid, abate, and prevent safety and health hazards in workplaces.
- 10 The Southeast Sustainability Directors Network (SSDN) is a professional network of local government sustainability officials that works to build community sustainability.
- 11 Ibid.

### **American Council for an Energy-Efficient Economy**

529 14th Street NW, Suite 600

Washington, DC 20045

[www.aceee.org](http://www.aceee.org)