

DOE Recognizes Eight Organizations for Excellence in Expanding Use of Smart Diagnostic Tools for Efficient HVAC Performance in Residential Buildings

The U.S. Department of Energy (DOE) 2023 [Smart Tools for Efficient HVAC Performance \(STEP\) Campaign](#) recognized eight organizations for impactful commitment to quality residential HVAC installation by using smart diagnostic tools and/or adopting these tools in HVAC workforce training programs. The organizations were recognized on September 26, 2023, during an Energy Efficient Building Association (EEBA) webinar highlighting the benefits of smart diagnostic tools for Inflation Reduction Act-incentivized heat pump installations.

Now in its second year, the STEP Campaign is part of DOE's Residential Buildings Integration Program. The Campaign is designed to broaden adoption of smart diagnostic tools and to raise awareness that the use of these tools by HVAC technicians for commissioning and diagnostics helps ensure high efficiency residential HVAC systems are performing as designed, and without energy waste due to common installation and maintenance faults.

Recognized Organizations

Smart Local 265 is recognized for its commitment to keeping its HVAC training program ahead of the curve, including ensuring students master the use of smart diagnostic tools for HVAC system performance verification. Smart Local 265's on-site laboratory allows students to gain hands-on experience with different HVAC equipment—and smart tools provide the ability for all students to watch the readings change in real time as test conditions are adjusted. When Smart Local 265 attends career fairs to raise awareness of HVAC career paths and its training program, staff bring smart tools with them to attract the next generation HVAC workforce by demonstrating the organization's commitment to cutting-edge technology and training.

"I definitely recommend that other training organizations use smart tools in their curricula," said Joe Carone, Smart Local 265's senior apprentice and journey person service instructor. "Because of these tools, students exit our program with the ability to really fine-tune a piece of HVAC equipment. We believe this skillset makes them higher-value recruits for hiring contractors."

Johnstone Supply is recognized for its new smart diagnostic tool [training program](#) for HVAC technicians, offered in the company's state-of-the-art training facility in Denver, Colorado. As a wholesale distributor of HVAC equipment and supplies that operates across the United States, Johnstone Supply knows that quality training is a win for all parties involved in HVAC projects. When technicians have the skills and tools they need to maximize an HVAC system's capacity, performance, and longevity, the result is an improvement in customer satisfaction, contractor profitability, distributor sales, and manufacturer reputation. Johnstone Supply in Denver is also offering a "train the trainer" program to help other Johnstone locations conduct similar training in their own markets.

"Smart diagnostic tools enable technicians to generate data and reports that clearly demonstrate the equipment is installed and performing according to manufacturer specifications," said Johnstone Supply Sales Manager Dean Wolfe. "This is important for bringing peace of mind to all parties involved."

The team behind the Department of Energy [Career Pathways to Advance the Trades in HVAC Services \(PATHS\) program](#) is recognized for its commitment to empowering HVAC technicians through the use of smart tools. Led by **Frontier Energy** and other industry members, the PATHS pilot program provides community college training and mentorship for new HVAC technicians in California's Inland Empire. The program equips its students with the knowledge and skills to perform high-quality HVAC installation, maintenance, and service. The pilot is designed to provide new opportunities for underemployed and non-traditional workers while also building the HVAC workforce needed to support a growing regional population. Another goal for this pilot is to serve as a template for other communities to launch HVAC workforce development programs.

PATHS makes significant use of the Visual Service tool as an educational platform. Developed in part by the [Institute of Heating and Air Conditioning Industries](#) (IHACI), Visual Service is a video-enabled field service technology that brings together the readings from Bluetooth-enabled instruments to allow them to be reviewed in context. It has not only been helpful in the field for PATHS trainees diagnosing issues and communicating options to customers, but has also been useful in the PATHS classroom for teaching foundational knowledge on how various HVAC systems work.

"The industry needs smart tools that enable smart technicians to become even smarter," said Frontier Energy Engineering Manager Kristin Heinemeier. "These tools empower technicians to do what they do with excellence, and provide them with live support when they need it."

Portage Lakes Career Center (PLCC) in Uniontown, Ohio, is recognized for its commitment to quality smart diagnostic tool training as part of its adult HVAC curriculum. The 37-week night course contributes to growing and empowering the local HVAC workforce by offering an affordable, accredited education supplemented with \$2,000 worth of tools (including smart tools). The suite of tools benefit students both in the classroom and in future HVAC-industry jobs. The program has earned a reputation among local contractors for the skill of its graduates, resulting in a 97% job placement rate for students who complete the program. With the skills and smart tools they receive and master through the program, graduates can commission and troubleshoot HVAC systems just as efficiently as their senior colleagues, often leading contractors to request smart tool training from PLCC for their other technicians.

"Smart tools have helped us flatten the HVAC learning curve and halve the amount of time it usually takes for a new technician to become proficient in the field," said PLCC Instructor Ben Chouinard. "Once you learn the analog diagnostic approaches and all the required math, then see how efficiently and accurately smart tools can do those calculations—there's no going back."

The following four professional HVAC businesses are recognized by the STEP Campaign for their use of smart diagnostic tools for commissioning and servicing residential HVAC systems. To realize the energy savings promises of high efficiency heat pumps and air conditioners, these systems must be properly installed from the start. Through ACCA's Quality Installation certificate pilot program, these contractors are using smart diagnostic tools to commission HVAC systems for their customers, maximizing capacity, performance, and longevity of their HVAC systems:

- Jackson Comfort Services (OH)
- Ray O. Cook Company (CA)

- Simpson Salute Heating & Air (OH)
- Eco Plumbers, Electricians, and HVAC Technicians (OH)