



The Indoor Environment &  
Energy Efficiency Association

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State Energy Offices  
National Association of State Energy Officials

Dear NASEO Member:

As an energy leader in your state, you are certainly aware of the role that efficiency programs play in reducing energy demand and emissions. However, it may surprise you to learn how much energy is wasted due to improper heating, ventilation, and air conditioning (HVAC) installations.

The National Institute of Standards and Technology (NIST) released a study in 2014 that examined the energy penalties in residential HVAC units<sup>1</sup>. NIST found that duct leakage is the most significant fault, which can account for a 30 percent energy penalty. Additionally, equipment oversizing and refrigerant undercharge can each decrease efficiencies by 20 percent. If there are multiple faults in a residential HVAC system, 30 percent duct leakage and 20 percent refrigerant undercharge for example, then the annual increased energy consumption can be more than 40 percent.

U.S. homes consume about 10.18 quadrillion BTUs, and residential HVAC systems account for nearly 48 percent of total energy consumption in U.S. households<sup>2</sup>. A 30 percent energy loss in HVAC systems for failing to observe ACCA installation, duct work, or home performance procedures wastes about 1.5 Quads, or 439,606,625,000 kilowatt hours (kWh). With 124.6 million households in the U.S., and an average energy cost of 13 cents per kWh, each household wastes about 3,500 kWh (\$458 per year).

ACCA – the Indoor Environment & Energy Efficiency Association’s goal is to promote low-cost, energy efficiency solutions, and to encourage energy leaders to develop programs to improve HVAC contractors’ quality installations, duct work design, and home performance techniques. We have developed a user-friendly, online platform called Qtech to teach contractors these energy saving techniques.

We are encouraged by the early success of Qtech. In fact, we have been working with utility and energy companies to decrease energy demands by providing training pathways to HVAC technicians. By providing technicians with our training programs, the energy industry is able to help homeowners obtain energy efficiency rebates. Additionally, the technicians develop valuable skills that lead to career long opportunities.

ACCA is not advocating or dismissing the Clean Power Plan (CPP), but I do want to highlight the prominence that energy efficiency has in the plan. The Clean Energy Incentive Plan offers credits for investments in energy efficiency that result in “quantified and verified electricity savings (MWh) through demand-side EE measures implemented in a low-income community.”<sup>3</sup> Although the CPP is being

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<sup>1</sup> [http://www.nist.gov/el/building\\_environment/hvac-110714.cfm](http://www.nist.gov/el/building_environment/hvac-110714.cfm)

<sup>2</sup> <http://www.eia.gov/consumption/residential/index.cfm>

<sup>3</sup> <https://www.epa.gov/cleanpowerplan/fact-sheet-clean-energy-incentive-program>

contested, we expect that the Federal Government will continue to push energy efficiency programs and we want to be pro-active to help reduce the demand for energy in cost-effective ways.

We appreciate your leadership and are hopeful that we can work together to reduce the demand for energy. ACCA is certain that if HVAC installation crews are taught to perform to the highest installation, duct design, and home performance standards then we can reduce energy demands by billions of kilowatts and save homeowners hundreds of dollars on their energy bills.

As you can see from the NIST study, quality installation of HVAC systems is a sure way to save your citizens money and promote jobs for energy efficiency technicians. We would like to work with you to advocate for quality installations with utilities, energy producers, and other parties that may have an interest in decreasing energy demands. ACCA is also ready to help develop HVAC contractor training programs into your state's energy efficiency plan.

We would appreciate the opportunity to discuss HVAC contractor training programs in greater detail with you or your staff. Your leadership at the state level is essential to these efforts.

Please contact ACCA's Director of Industry Relations, Todd Washam, at [todd.washam@acca.org](mailto:todd.washam@acca.org), or 703-824-8864 to learn more about our energy efficiency training programs.

Sincerely,



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Air Conditioning Contractors of America  
The Indoor Environment & Energy Efficiency Association