



Policy Positions

2021

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Introduction

The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) is the trade association for over 300 member companies that manufacture quality, safe, efficient, and innovative residential, commercial, and industrial air conditioning, space heating, water heating, indoor air quality, and commercial refrigeration equipment and components for sale in North America and around the world. AHRI's member companies represent more than 90 percent of the heating, ventilation, air-conditioning, refrigeration (HVACR) and water heating equipment manufactured and sold in North America.

AHRI is also the leading and recognized voice of advocacy for the HVACR and water heating industry. The statements below outline and describe AHRI's positions on many issue areas. These statements are meant to guide AHRI's advocacy efforts during the development and implementation of international, federal, and state policy that affects our industry. Additionally, these statements can serve as a reference for AHRI member companies and the public interested in AHRI's position on a particular issue. As policies and issues evolve, these statements will be updated to reflect the industry's position.

I. Energy

AHRI members rely on dependable, affordable energy to compete in the global marketplace. AHRI supports an "all-of-the-above" approach to energy. This strategy promotes the responsible development and use of all energy sources and recognizes the importance of energy efficiency to meeting future energy demands. Overly restrictive regulations and the implementation of policies that limit or eliminate energy sources create production increase costs for manufacturers and ultimately for the consumer. Additionally, AHRI favors policies that encourage clean, reliable energy sources that provide the power necessary for AHRI members' equipment to operate efficiently and as intended, with minimum impact to the environment, and on an affordable and consistent basis for consumers. AHRI also favors policies that promote energy storage which will make the best use of our electric grid and lower costs for consumers.

a. Energy Efficiency and Conservation

AHRI believes in the importance of energy efficiency, as well as the development and use of products that achieve increased energy efficiency. AHRI members are committed to producing more energy efficient products to help reduce the demand for energy, lower costs for the consumer, and decrease greenhouse gas emissions. Sensible efficiency and waste reduction measures will benefit both businesses and consumers across all sectors of the economy.

AHRI members' equipment makes homes comfortable, businesses operational, and climates habitable. Our members manufacture products that are critical in human health, preservation of food, data storage, telecommunications, pharmaceuticals, and other medical supplies and services critical to saving lives. AHRI supports policies that promote the use of energy efficient HVACR and water heating equipment, while maintaining that these policies must not place undue burdens on stakeholders involved in the development of these new technologies. Additionally, consumers that ultimately must bear the cost of purchase and installation and operation must also be protected from these undue

burdens and not have their choice of products unfairly restricted. AHRI supports regulations based on sound economic analyses with strong federal preemption and sensible compliance mechanisms.

AHRI supports the adoption of technically feasible and defensible minimum energy performance standards (MEPS) for achieving energy efficiency. Individual countries and regions are responsible for the development and implementation of MEPS, including the assurance of stakeholder engagement. Global bodies can be helpful in providing encouragement for the development of harmonized methodologies and MEPS that could work across developing and developed countries, including the promotion of the positive benefits of MEPS implementation. In addition to an effective MEPS program there are other important building blocks of energy efficiency. These include: the selection of properly sized equipment, and properly designed buildings, and the proper installation, maintenance, and operation of that equipment by a trained workforce.¹

The Energy Policy and Conservation Act (EPCA), passed in 1975, is the governing policy for energy conservation standards, and thus energy efficiency, for Department of Energy (DOE) consumer covered products and commercial covered equipment. EPCA language should reflect current technologies and economic realities, and be amended with an understanding that there are diminishing returns as efficiency nears “max tech.” DOE should promulgate rules in a manner that creates certainty for manufacturers and allows them to remain globally competitive while continuing to create American jobs. While a continuous regulatory cycle, when aligned with technology improvements, can allow industry to develop more efficient products at similar costs, often it forces consumers to pay higher up-front costs for heating, cooling, and water heating equipment. This can disincentivize customers from replacing their less-efficient equipment with high efficiency new equipment, lead to the use of alternative methods of indoor climate control, which can compromise consumer comfort and safety, reduce energy savings, and in some cases, use more energy to achieve the same result.

Analyses used by DOE to determine whether minimum energy efficiency standards meet the law’s required tests of economic justification, technological feasibility, and significant energy savings should be publicly available, verifiable, and empirically based. Proper analytical methods ensure rules are well conceived and constructed, which prevents placing an undue burden on both manufacturers and consumers. DOE should follow Executive Order 13563, which was designed to improve the regulatory process and regulatory review across the federal government.

EPCA and other energy conservation policies should continue to preempt the possibility of conflicting state regulations and should ensure that the regulatory process is fair and efficient for all stakeholders. AHRI supports policies that would:

- Ensure new efficiency standards are justified by requiring regulators to analyze current standards to determine their effectiveness with respect to costs and energy savings, taking into account part load and full load efficiencies;

¹ According to a TEAP Task Force Report on energy efficiency, a trained workforce can improve the energy efficiency of equipment by 50% (Technical and Economic Assessment Panel Decision XXIX/10 Task Force Report on Issues Related to Energy Efficiency while Phasing Down Hydrofluorocarbons)

- Prevent equipment from being subjected to multiple levels of efficiency standards through the promulgation of efficiency standards for the components of already covered equipment;
- Institute a more realistic standards revision schedule to allow time for manufacturers and DOE to properly evaluate the current standards in effect and to allow time for the market to adjust to new standards;
- Require regulators to use a more inclusive and transparent rulemakings process, such as utilizing negotiated rulemaking processes or early stakeholder engagement working groups, which incorporate manufacturers and other stakeholders throughout the process;
- Consider other existing measures such that all measures harmoniously encourage energy savings;
- Ensure all definitions, assumptions, analysis, data and terminology be accurate, clear, concise, and widely understood by all stakeholders;
- Require DOE to work closely with the Environmental Protection Agency to ensure efficiency rulemakings and refrigerant approvals are aligned;
- Align current DOE test procedures to reflect industry recognized and respected consensus standards and industry certification programs;
- Encourage the use of negotiated rulemakings through the Appliance Standards and Rulemaking Federal Advisory Committee (ASRAC) when appropriate;
- Require DOE to follow its own Process Rule when establishing new or revised energy conservation standards for all covered equipment, and ensure consistency in the sequencing of timelines between test procedures and efficiency standards; and
- Convene all stakeholders for the purpose of creating a new regulatory framework for federal energy efficiency rulemakings, while not impacting those currently in place or in the pipeline.

b. System Efficiency Approach

Manufacturers play a significant role in improving the efficiency of buildings. AHRI supports further development of market and institutional reforms that grow opportunities to expand energy efficiency in buildings.

System efficiency (as opposed to component equipment efficiency) recognizes that energy performance is dependent on how parts of the system relate to each other, not just on the efficiency of its equipment components. This is particularly true for today's HVACR and water heating installations that more frequently utilize complementary systems that enable use, recovery and storage of energy sources and efficient control methodologies that can all be integrated to improve building performance and reduce energy use. The magnitude of system efficiency savings for a single building and for the entire nation are

not truly quantified, but the AHRI Systems Steering Committee and others have estimated that the opportunity is significantly larger than continuing the path of specific component equipment regulations.

Energy efficiency evaluation methods and government policy, where current methods are insufficient, should move toward metrics that encourage transparency in net building energy use and recognize, measure and promote integrated system efficiencies based upon sound science and favorable consumer economics. Continued funding to research all possibilities to improve system efficiency is needed in order to continually strive for maximum energy efficiency and energy security within the building sector.

c. Codes and Standards Adoption

Building codes have emerged as a tool to achieve reductions in the nation's energy consumption and are one of the easiest and most cost-efficient ways for states and local jurisdictions to implement energy demand-management policies and goals.

State, local, and international jurisdictions should adopt, implement, and advance industry consensus building energy codes that are consistent with federal energy conservation standards and are technologically neutral. AHRI supports federal policies that would further encourage state and local jurisdictions to adopt the latest version of ASHRAE 90.1 within two years of publication. The proper implementation and enforcement of these codes will ensure consistency for manufacturers in the marketplace and help reduce energy consumption in the built environment.

AHRI supports the traditional role of the U.S. Department of Energy in analyzing the energy efficiency effectiveness of new code measures and believes that federal energy conservation standards should preempt building codes to ensure consistency for manufacturers in the marketplace.

Building codes should allow for the use of next generation refrigerants in a safe and responsible manner that will permit the United States to be recognized as a leader in implementing the international Montreal Protocol treaty, and the Kigali Amendment on the phase-down of high global warming potential (GWP) hydrofluorocarbons (HFCs).

Agencies should defer to industry consensus safety standards where available and applicable to avoid duplicative standards and processes.

II. Regulatory Reform

A favorable business climate is fostered through a sensible regulatory approach. The regulatory system must use sound science to address societal needs in a way that does not impede innovation, research, development, consumer choice, and product deployment. In the regulatory process, the vital national public policy objectives of international competitiveness and technological innovation should be given priority.

In order to advocate the policies and positions of the industry, serve the general public, and protect individuals and the environment, regulatory policies should adhere to sound principles of effective

regulation that are performance based, advance market driven initiatives, and adhere to sound principles of science, risk assessment, and robust cost-benefit analysis.

- Agencies should defer to stakeholder consensus standards or procedures when available and feasible rather than create unnecessary or duplicative standards or procedures.
- Executive departments should engage in regular and transparent periodic review of all their regulations to determine effectiveness, compare actual results to predicted results, and evaluate continued need for the regulations.
- Regulatory programs' success should be measured by outcomes and improvements in economic and social welfare.
- Federal agencies should focus resources on the most cost-effective and least intrusive means to achieve voluntary compliance. Compliance assistance programs, especially for small businesses, better serve the public's interest in achieving beneficial outcomes.
- Federal rulemakings should allow for flexibility in the requirements if an agency is engaged in a Negotiated Rulemaking or a Direct Final Rule.
- Agencies at all levels of government should be in regular communication with one another, as well as industry representatives, to gain a clear understanding of the cumulative regulatory burden that proposed actions may have on manufacturers.
- Industry self-regulation, by means of access to new technologies and market drivers, should be given an opportunity to develop in new areas as the first alternative to government regulation.
- Agencies should effectively implement the Information Quality Act, including having transparent, established systems for ensuring that information disseminated by an agency is of high-quality, and for dealing fairly and expeditiously with petitions for correction of such information. An unbiased peer review of scientific and technical information should be an integral part of the regulatory process.
- AHRI believes that public participation in the agency decision-making process is an essential mechanism that ensures accountability. Transparency and stakeholder input is key to the regulatory process. Public comment periods should be consistent with the complexity of the document and the amount of time the agency needed to prepare it. Public comment and agency responses to comments should be included in an online public record system. Due to the complexity of proposed rulemakings and the impacts on consumers and the HVACR and water heating industry, agencies should allow a period of at least 90 days to comment on information collection requests and other administrative actions. Proposals for data collection, reporting, or recordkeeping requirements should not duplicate existing requirements, and every effort must be made to use available information within the federal government. Information should be collected and reported in the most cost-effective manner, subject to appropriate protection for confidential business information.

III. Certification and Enforcement

The federal government should recognize voluntary verification and certification programs for air conditioning, furnace, boiler, heat pump, refrigeration, and water heating products as a way to demonstrate compliance with federal energy efficiency and conservation standards and the ENERGY STAR program.

Relying on industry-consensus certification and verification programs reduces duplicative efforts between the federal government and industry, encourages energy efficiency compliance, reduces regulatory burdens, and saves taxpayer dollars—all while enhancing global market surveillance.

IV. ENERGY STAR

The ENERGY STAR program has proven to be a successful tool in advancing the development and use of energy efficient technologies for adoption by the general public. The program has also promoted economic expansion and job growth for participating manufacturers across the nation. In order to maintain the program's success, the Environmental Protection Agency (EPA) relies on third-party voluntary independent verification programs (VIVPs) to validate manufacturers' efficiency claims. These VIVPs save businesses time and money, while ensuring a robust ENERGY STAR program and safeguarding consumer protection.

The DOE should seek to exceed the ENERGY STAR Program for the verification testing of federally regulated covered products. Policies that create duplicative verification testing and that deviate from industry accepted testing methods should be avoided to prevent an additional cost or burden to manufacturers that are already participating in autonomous, comprehensive VIVPs that use independent, third-party laboratories to ensure compliance with applicable standards.

The requirements to be an EPA Partner and go through the ENERGY STAR qualification and listing process is a voluntary compliance burden, therefore EPA should work to minimize those additional requirements, especially for manufacturers who participate as part of a third-party verification program on an ongoing basis. For such manufacturers, EPA should align with DOE requirements where possible. It is reasonable to have additional requirements for those manufacturers who are not part of an ongoing third-party verification program to maintain integrity of the ENERGY STAR brand.

V. Environment

A high standard of living depends upon a healthy environment, robust economic growth, and an adequate and dependable supply of energy at globally competitive prices. Quality of life encompasses complex economic and social considerations, requiring both environmental protection and economic development. Environmental laws and regulations should be designed with utmost care to ensure that they are effective in achieving their desired objectives while at the same time avoiding adverse economic and social impacts.

Accordingly, measures to protect environmental quality should:

- Address an identified need;
- Be based on factual data and credible science, and include a full lifecycle approach considering both direct and indirect impacts;
- Use the least costly means of implementation and compliance, with due regard for total impacts on employment, other regulatory burdens, energy used, resources, land use, and other regional, national and international social and economic considerations.
- Promote innovation and recognize that technological advances over time have generally reduced the environmental impacts of both energy production and consumption;
- Recognize the technological advances made by manufacturers and allow for economic growth and the protection of our environment;
- Include careful review of the anticipated achievements through regulation, such as energy efficiency levels, as technologies relied upon may be proprietary;
- Utilize appropriate risk management processes to better focus our national effort and resources on environmental problems that pose a significant risk;
- Employ rigorous, transparent, economic analysis to better understand potential economic impacts, job losses and cost-benefit relationships;
- Include a careful review and evaluation of the compliance timeframes that manufacturers are given to meet new standards or regulations with respect to current safety, energy, environmental and code requirements already enforced by other entities; and
- Integrate a complete cumulative analysis of regulations' impacts on regulated industries, manufacturers and the economy.

a. Climate Change

AHRI members are committed to minimizing the impacts of climate change from stationary and mobile HVACR equipment. AHRI supports policies that promote environmental stewardship while meeting societal needs in an energy-efficient, safe, and cost-effective manner, and that appropriately address five key principles:

- **Provide Global Regulatory and Business Certainty:** A balanced, global regulatory policy framework will avoid costly compliance issues when meeting market demand. Conversely, if not harmonized individual climate regulations in multiple markets can be costly and unnecessary barriers to trade. Global regulatory certainty provides companies the long-term assurance to justify the large financial investments needed to develop innovative products.
- **Emphasize Lower Environmental Impact:** To reduce greenhouse gas (GHG) emissions from HVACR equipment, the climate change impact of both indirect (electricity and gas use) and direct (refrigerant emissions) effects must be well understood for policy making and should be determined by a life cycle climate performance analysis (LCCP). Such an analysis can provide perspective on how to assess (and if appropriate, regulate) carbon dioxide (CO₂) equivalent

emissions from both indirect and direct sources. Additionally, as energy efficient operation and maintenance play an important role in overall GHG emissions from HVACR equipment, AHRI supports reducing such emissions through quality installation, and sustainable operation and maintenance practices.

- **Ensure Product Safety:** Employing lower GWP alternative refrigerants safely requires thorough risk assessment research, as well as the revision of codes and standards to allow for their use. AHRI (partnering with ASHRAE, DOE, EPA, and the State of California) is leading a research program to provide risk assessment analysis that will inform the revision of safety standards and codes, which are needed to address the properties of some new low GWP refrigerants.
- **Allow for Technology Neutrality:** To provide for consumer choice, manufacturers must continue to have flexibility in their product designs. As the industry transitions to lower GWP refrigerants, there will need to be consideration for regional climate conditions, technologies, safety issues, energy efficiency requirements, and end-user specifications such as building designs. This means that a transition to lower GWP refrigerants should be done using a large variety of refrigerant options, and policies should not limit refrigerant choice in the marketplace. Refrigerant choice is particularly important in developing countries, where the commercial availability of lower GWP substitutes continues to grow increasing consumer access to essential products. Furthermore, environmental policies should not unfairly restrict consumer choice by favoring the use of specific energy sources and excluding alternatives. To enable innovation and advancement of technologies, policies should be performance based, allowing for consumers to make the best purchase choice for themselves from available equipment types.
- **Promote the Responsible, Safe Use and Handling of All Refrigerants:** To avoid refrigerant emissions, the containment of refrigerant is critical during equipment service maintenance and disposal. Leak detection is an important component of refrigerant management. For most refrigerants, venting is prohibited, and they must be recovered, recycled or reclaimed, properly disposed of, or destroyed. Finally, flammable lower GWP refrigerants present additional safety concerns for technicians during installation and servicing. Industry-led examples of global training and education efforts include the Global Refrigerant Management Initiative (GRMI) and the Refrigerant Driver's License (RDL) program, jointly being developed by AHRI and the United Nations Environment Programme (UNEP). AHRI recognizes that the training needs for developed and developing countries may differ and should be addressed in training and education programs.

b. Principles for Sustainability

Manufacturers are committed to advancing sustainability efforts that positively impact manufacturing and industry's contributions to environmental protection, economic performance and the social well-being of the employees, communities, customers, and consumers they serve. Industry recognizes these challenges and will respond by encouraging the adoption of sustainability best practices; in their products, manufacturing facilities, and building sector while applying life cycle analysis practices to further a sustainable society.

c. Air Quality Control

The Clean Air Act requires federal regulators to review the National Ambient Air Quality Standards (NAAQS) for criteria pollutants, including particulate matter and ozone, every five years. NAAQS should be set in a transparent manner with consideration of the public health and welfare, energy and economic impacts, and the non-attainment offset requirements should be tied to reasonable and available reduction opportunities. Regulators should consider economically balanced cost thresholds when establishing these requirements. In some U.S. locations, the availability of offsets is very limited and thus the cost is tremendous. Air quality goals should be commensurate to the expense associated with implementation of those goals.

Furthermore, AHRI strongly supports review of the NAAQS by diverse and well-qualified representatives of the scientific community with relevant expertise, based on sound, peer-reviewed, objective studies. The EPA should not rely on internal re-analyses of published peer-reviewed studies if the EPA's re-analysis has not itself been individually peer-reviewed and published.

VI. Tax

AHRI believes that tax policy at all levels play a critical role in the ability of its members to thrive in the United States and effectively compete in a global economy. Tax policies should not place an additional burden on manufacturers and should promote economic growth as well as HVACR and water heating industry job creation. Additionally, tax policies should be simple, stable, and predictable. Tax rates, deduction, exemptions, and credits should continue to be established by statute. Taxes should not be retroactively imposed or increased by either statute or regulation, as such practices are fundamentally unsound, unfair, and punitive.

a. Encouraging Investment and Providing Incentives

Capital investment is key to economic growth, job creation, and competitiveness. An effective way to spur business investment and make the tax system more competitive is through a robust capital cost recovery system. Any tax reform plan should allow full deduction for all business costs. AHRI believes in encouraging investment through policies involving the following:

- **Capital Cost Recovery/Expensing:** Promoting investment by reducing the cost of capital should be an integral part of U.S. tax policy. An effective way to spur business investment and make U.S. manufacturing more competitive is through a strong capital cost recovery system. An ideal system would allow companies to expense the full cost of capital equipment in the tax year purchased. Full first-year expensing lowers the cost of capital, increases the number of profitable projects a firm can undertake, and supports job creation and retention. Any system should also include air conditioning and heating equipment, and water heating equipment as qualifying equipment. The inclusion of such equipment would provide greater energy efficiency and would reduce energy costs for consumers, as newer equipment offers greater energy efficiency.
- **Accelerated Cost Recovery System/Depreciation:** The tax code should accurately reflect the expected life of properly designed, installed, and maintained products, which for HVACR

equipment is between 15 and 20 years, and 10 to 15 years for most water heating equipment. An accurate depreciation period aligns tax policy with the reality of the market and encourages the purchase of new, more energy efficient HVACR equipment when it is needed. This alignment has the added effect of lowering energy costs for consumers, as well as lowering overall energy consumption.

- **Deductibility of Interest:** The deductibility of interest is an important capital structure measure. HVACR manufacturers believe it is important to maintain full deductibility for interest on bona fide debt given the role it plays in funding new investments and business operations.
- **Provide Strong R&D Incentives:** It is critical that any tax reform plan recognize the important role of research and technology investment in creating U.S. jobs and spurring innovation. The goal is for the United States to retain and attract global research and development (R&D) activities and to ensure manufacturers in the U.S. are the world's leading innovators. Policies should also recognize the contribution of industry and academic partnerships, making available programs and incentives to further educational institutions' work in leading energy and energy efficiency technologies.
- **Tax Credits and Tax Holidays:** Tax credits and holidays encourage investment in energy efficient technology regardless of the cost of energy, thus continuing to spur job growth while lowering overall energy consumption. AHRI recommends Congress and state legislatures focus on authorizing tax credits in a forward and permanent manner in order to have the desired effect on purchasing behavior and provide more certainty. Gaps in tax policy that result in retroactive extensions of expired tax provisions should be avoided. AHRI supports policies that incentivize consumers to install highly efficient products that provide increased energy savings for consumers, while at the same time contribute to making the nation's energy economy more resilient.
- **Early Retirement Programs:** AHRI supports policies that encourage early retirement programs that provide incentives for consumers to replace old HVACR and water heating equipment with more efficient technologies.

b. Corporate Income Tax

AHRI supports maintaining the lowest possible top federal corporate tax, which allows for economic growth, enables U.S. companies to effectively compete in the global marketplace, and attracts foreign direct investment to the United States. Any future rate reforms should not increase the tax burden on manufacturers.

VII. Trade

AHRI supports trade policies that strengthen manufacturing opportunities for AHRI members. Fairly negotiated trade agreements provide opportunity for growth and expansion of manufacturing, increase the range of goods and services available to consumers, enhance market-based production globally, and contribute to closer understanding and cooperation among nations. This objective can best be achieved by limiting costs and other impediments imposed on U.S. manufacturers and by pursuing and utilizing a

rules-based international trading system that enhances the role of free market forces and promotes respect for the rule of law, while seeking to eliminate market-distorting governmental intervention.

AHRI also supports credit agencies that operate at no cost to the American taxpayer. These agencies support jobs through facilitating the export of U.S. goods and services while directly providing benefits to both large and small businesses by leveling the playing field for U.S. goods and services competing against foreign entities.

a. International Trade Negotiations

In seeking to level the playing field globally for manufacturing in America, AHRI supports initiatives that obtain genuine market access for U.S. manufacturing and that promote strong standards to protect private property and grow commercial activities in a predictable rule of law based system, including through trade agreements that offer mutually-beneficial commercial opportunities. AHRI supports the office of the U.S Trade Representative to be funded adequately to enable effective negotiation of multilateral, regional, and bilateral agreements.

In today's global market, many AHRI companies are multi-national or utilize a global supply chain. Trade negotiations should seek to ensure consumers are not adversely affected through changes in policy or barriers to the open market which would disrupt global industry operations.

International trade agreements should promote the creation and maintenance of U.S. jobs and economic growth by supporting the negotiation of international trade agreements to open foreign markets. Trade agreements should likewise seek the elimination of market-distorting governmental intervention in international trade and promote effective and enforceable compliance to agreed and transparent rules of fair competition and the protection of private property, including intellectual property, contracts, and related commercial activities. In this process, the effectiveness of U.S. trade laws must not be diminished.

Trade agreements should promote maximum harmonization of standards to the extent they do not preclude the use of standards more appropriate to the situation or product and which also meet the definition of an "international standard" according to WTO's Agreement of Technical Barriers to Trade (TBT) and subsequent relevant decisions of the TBT Committee. Regulatory requirements should be harmonized and should, where possible, reference voluntary standards. AHRI's development of voluntary standards and certifications offer a major contribution to industrial development, without impairing the flexibility of innovation in the marketplace. HVACR and water heater manufacturers should be able to continue to develop consensus-based, comprehensive, integrated standards that are consistent with advancing the industry. Trade can be facilitated by eliminating unnecessary technical barriers and promoting good regulatory practices and the value of a public-private partnership for standards development.

Trade agreements should be negotiated to be mutually beneficial, comprehensive, and enforceable. Efforts should be made to reduce both tariffs and non-tariff barriers in order to generate greater market access, reduce foreign market distortions and facilitate trade expansions. Reducing tariffs and non-tariff barriers can play a particularly important role in lowering opportunity costs to allow for small businesses to enter the market. Reducing non-tariff barriers through customs harmonization, financial services liberalization, the enabling of electronic commerce, and the harmonization of international standards

and the elimination of duplicate product safety and performance testing all help to create an environment in which all manufacturers can actively participate in international trade, and AHRI supports the inclusion of such features in trade agreements.

b. Trade Enforcement

Trade enforcement policies should give the International Trade Administration the ability to safeguard and enhance the competitive strength of U.S. manufacturers against unfair trade. AHRI supports the adequate funding of agencies responsible for enforcing U.S. trade laws, and trade remedy laws. Punitive tariffs utilized as trade enforcement without consideration of industry impact and cost to the consumer should be avoided. Policies on trade enforcement should protect the health, safety, and welfare of American consumers by recognizing the harmful effect of counterfeit and pirated products on the public and on our economy, while also protecting manufacturers from losing business to counterfeit and unregulated foreign products. Enforcement policies, both public and private, and strong interagency coordination and public education should be strengthened to help eliminate this threat. Industry should be encouraged and incentivized to use advances in technology and manufacturing processes to help curb the dissemination of counterfeit and pirated products, many of which do not meet federal minimum standards.

VIII. Workforce

The ability of manufacturers to succeed in the highly competitive global marketplace depends on access to an educated, diverse, inclusive, flexible, and knowledge-based workforce. American employees, in turn, need the education and skills to participate in a high-performance workforce for the robust and dynamic U.S. manufacturing economy.

HVACR and water heating industry is facing a serious shortage of skilled trade employees. There is a broadening skills gap due to several factors, including: the retirement of the baby boomers, advancements in technology that require new skills, increased job competition in the global marketplace, failure to cultivate a highly skilled workforce, the negative perception of manufacturing jobs, a societal focus on four-year degree programs as opposed to technical education, a lack of emphasis on the necessary skill sets for advanced manufacturing, and difficulty in retaining skilled talent. To better mitigate the skills gap and aide in cultivating a workforce with the necessary skills, policymakers should encourage schools to offer a diverse array of career and technical education (CTE) programs that are up-to-date and reflect current manufacturing technology and installation techniques. Secondary and post-secondary schools should also promote and incentivize CTE career programs to students and encourage completion of industry-recognized certification programs, with a focus on encouraging more women to enter the manufacturing workforce.

Critical to any student learning program is the integration of CTE. CTE provides students with real-world job skills and is a vital component of a 21st-century workforce. Students should be given the option to take CTE courses that integrate contextual and technical learning with core academic courses. Successful CTE initiatives should integrate and incorporate rigorous academic programs that should promote both work readiness and a link between learning and real-life applications. Furthermore, they should encourage students to complete schoolwork and pursue a more advanced skills training at the post-secondary level. Schools should ensure that every student graduates from high school ready for work

and ready for post-secondary education. CTE programs should ensure graduates have the core academic and workplace competencies for employment.

a. Training and Certification

HVACR and water heating manufacturers have identified the core competencies necessary for workers to succeed in virtually all entry-level jobs across all sectors of the industry. A system of industry-recognized skills and credentials is necessary to reform education and training for 21st-century manufacturing. A successful system would provide skills assessments, standardized curriculum requirements, and nationally portable credentials that validate the attainment of critical competencies required by industry.

Closer alignment of education and training programs to marketplace demands is critical to ensuring students and workers are prepared for the challenges of a high-skilled, dynamic workplace. Federal, state, and local education initiatives and programs should be coordinated and developed into a comprehensive learning continuum. The learning continuum must include input from the business community to help develop strategies, programs, and curriculums that address skill and labor shortages and to help prepare students for careers in advanced manufacturing. Programs must also take into account a strong focus on continual knowledge training for the next generation of educators, as a skilled-worker shortage will only increase without adequately trained educators.

Industry-recognized skills certifications provide guidelines for an educational pathway to achieve credentials, ensuring that workers have the required occupational foundational competencies in health and safety, quality assurance and continual improvement, manufacturing process, development and design, production and supply chain logistics, as well as training and credentials in specific sector and/or occupational areas in demand in their regional economies. Industry recognized and supported entities, such as North American Technician Excellence (NATE) among others, provide real world working knowledge of HVACR systems that are developed by a committee of industry experts nationwide. Proper certification leads to quality installation and repairs, which ensures that the manufacturer's equipment is operating to maximum performance and efficiencies

b. STEM Curriculum

The United States faces the daunting challenge of ensuring that every student possesses the appropriate knowledge and skills required to succeed in the 21st-century global economy. A consistent, challenging and rigorous curriculum aligned to the highest international standards—especially strong reading, math and science standards—will help prepare students with the basic academic training needed in today's workforce.

Quality education in Science, Technology, Engineering, and Mathematics (STEM) at the elementary, secondary, and post-secondary levels will help incorporate career and technical education content that integrates contextual and technical learning within core academic courses. Every student should graduate or receive a credential with both the knowledge and skills necessary to be successful in the global economy. Institutions of higher education can increase a skilled workforce by developing better STEM retention programs for students who indicate an interest in a STEM career field.

c. Applied Learning

Effective “hands-on” learning programs are critical to helping students understand the knowledge behind technology and its application to real-world environments and situations. Every student should have access to programs that integrate rigorous curriculum and learning criteria with real-world scenarios. High-quality programs also incorporate career development and work-based learning, including internships and apprenticeship programs.

IX. Installation and Permitting Compliance

AHRI relies on a close relationship with HVACR industry partners, such as the contractors and technicians who install and service AHRI members’ products. This important relationship helps to ensure that the equipment is properly designed or selected, installed, and serviced to maximize efficiency and effectiveness. If not properly installed, HVAC and water heating equipment, including cutting-edge energy-efficient technologies, will not provide important energy-saving benefits and will undermine our national energy efficiency initiatives and compromise consumer safety. AHRI supports the adoption of more uniform quality installation requirements on a state by state basis, which should include replacing and addressing ductwork at the time of installation as it is the primary culprit of energy efficiency loss. Additionally, HVACR and water heater manufacturers support proper installation practices that would reduce leak rates and minimize the release of refrigerants into the atmosphere.

AHRI supports policies that promote consumer education programs and incentives for proper installation programs based on the industry-supported, ANSI-recognized HVAC Quality Installation Standards to ensure manufacturer’s recommended minimum installation procedures are followed. At the state level, all contractors must be required to be properly licensed and certified to industry consensus best practices, as well as state and local regulations. Additionally, AHRI supports for existing permitting compliance at the state and local level that it is simple, and low cost for the installation and service of any HVACR or water heating related product. Proper permit compliance ensures that any installation or service request follows the proper procedures and regulations for the work to be done. Unpermitted work done by unqualified contractors can lead to improper installations, as well as the loss of energy and cost savings and compromised occupant safety. This issue is critical to the efforts of regulated equipment being able to provide expected energy savings to the consumer.

AHRI supports robust compliance enforcement programs through stronger penalties for unscrupulous contractors, streamlining the permit application process, and the full funding of enforcement agencies. AHRI does not support compliance enforcement policies that attempt to violate the confidential business information of member companies or burden the HVACR or water heating distribution line with higher costs. Due to consumer and customer privacy concerns, AHRI opposes any enforcement regimes that mandate HVACR and water heater registries, and any form of digital and/or serial number tracking.

X. Privacy, Property, and Confidential Business Information

The protection of proprietary and confidential information is of utmost importance to American industry at all levels of government. Confidential Business Information (CBI) must be given the full protection intended by Section 1905 of Title 18 of the U.S. Code. Because of the need to protect trade secrets and

other CBI, as well as the need to minimize paperwork burdens, information collection requests by federal agencies and their contractors should comply with the spirit and letter of the Paperwork Reduction Act. There should be no exception for surveys made pursuant to settlement agreements in citizen suits. It should not be left to Agency discretion what CBI may be shared publicly.

a. Information Security

A critical relationship exists between all manufacturers and those that entrust their data to them, as that trust and goodwill is based on industry's continuing efforts to protect the security, integrity, and privacy of that data.

Industry also recognizes that respecting and safeguarding privacy builds consumer confidence in new and innovative technologies and services. As a result, industry's best practices in the proper handling of data are constantly adapting or evolving to address new threats. Industry best practices, self-regulation, and market-based solutions should be used to protect data over government mandates, which can ultimately restrict innovation through requiring technologies or tools that can quickly become outdated. Privacy and security precautions should be driven both by the sensitivity of the information handled and the purposes for which it will be used.

b. Intellectual Property

Innovation is one of our greatest strengths and a major contributor to economic growth and industrial competitiveness. For this reason, it is important for policymakers both to nurture the creation and application of technology and vigorously protect intellectual property, as the creation of technology is the creation of intellectual property. Without strong protection, the incentives for future innovation-directed R&D will be diminished. U.S. domestic and international policy should reflect the vital importance of intellectual property rights for U.S. industrial competitiveness.

Policymakers should be strongly committed to supporting the rights of innovators to exploit their own inventions and should continually review the adequacy of our laws in the face of fast-paced scientific and technological change.

XI. Internet of Things

a. Connected Product Security

As more HVACR and water heating products increase their connectivity to the internet and to broader interconnected residential and commercial systems, steps must be taken to ensure that these products are secure and safe from the threat of hacking or malfeasance. Government policies should encourage innovation among manufacturers and should rely on voluntary, industry-led best practices. A prescriptive regulatory framework should not be imposed, and all policies should be technology-neutral, open, and interoperable and should leverage industry best-based practices and standards. AHRI supports the use of incentives to encourage manufacturers of all sizes to adopt voluntary cyber maintenance practices.

b. Innovation and Emerging Technology

It is critically important to educate policymakers and the general public on the importance of technology and innovation to our economic competitiveness. The government should support this effort by adequately funding and staffing existing institutions responsible for technology, science, intellectual property, and research and development (R&D) programs while not unnecessarily increasing the regulatory burden. Federal agencies also need to make the most efficient use of their resources and to coordinate their science and technology programs with industry with a view toward meeting national needs and priorities. Additionally, DOE should continue to adequately fund existing programs, such as the Better Buildings Program and the Weatherization Assistance Program, that break down market barriers and aid in the expansion of energy efficient technologies. DOE should explore additional opportunities, where appropriate and without increasing the regulatory burden, to provide market-based incentives, financing mechanisms, and increased opportunities to purchase energy efficient solutions.