

Written Testimony of
Ellis Guiles
Director of Sales & Marketing,
TAG Mechanical Systems, Inc.
Of Syracuse, New York

On Behalf of the
Air Conditioning Contractors of America (ACCA)

Submitted To the House Small Business Committee
Full Committee Hearing on “The Role of Green Technologies in Spurring Economic
Growth”

July 10, 2008

Introduction

Chairwoman Velazquez, Ranking Member Chabot and members of the Small Business Committee, thank you for the opportunity to provide testimony on the economic growth and job creation potentials of green technologies in the heating, ventilation, air conditioning, and refrigeration (HVACR) industry.

My name is Ellis Guiles and I am the Director of Sales & Marketing of TAG Mechanical Systems, Inc, a heating, cooling, and indoor air quality service company that serves both residential and commercial customers in the Syracuse, New York metro area.

I come before you as a member of the Air Conditioning Contractors of America (ACCA). I currently serve as the Chairman of the Government Relations Committee for ACCA. I am also a member of ASHRAE, and served as a past president of Central NY Chapter. I am a Board Member and Treasurer for the Building Performance Contractors Association of New York State. And I authored "LEED, Follow or Get out of the Way" a book describing how mechanical contractors can implement green building practices in their businesses to make them more profitable.

Every day, thousands of ACCA members help homeowners, small business owners, and building managers realize the comfort, convenience, and cost benefits of energy efficient HVACR equipment. What I hope to demonstrate today is that going “green” with new HVACR equipment can have a positive impact on the bottom line for home owners, small businesses, and the overall economy.

ACCA and its industry partners foresee a wealth of *job creation and economic development* opportunities from the burgeoning “green movement” right here in America. The majority of residential and commercial HVAC equipment sold in the United States is manufactured and warehoused in the United States. And the installation jobs held by contractors cannot be exported.

At the same time, ACCA members see tremendous possibilities in *greater energy efficiency* through emerging and existing technologies that will benefit homeowners and small businesses through lower utility costs, improved indoor air quality, fewer CO₂ emissions, and more money to invest or spend.

The potential for America's small businesses and the HVACR contractors that service those small businesses, for job creation, economic growth, and environmental protection are limitless. However, in order to turn this potential into reality, Congress needs to provide direction and assistance through **tax incentives, increased public awareness, proper installation and maintenance, and code enforcement.**

Energy Use and the HVACR Industry

Increased efficiency is the low hanging fruit in the effort to reduce energy consumption, promote national security, and stimulate the economy. According to the Department of Energy's 2005 Buildings Energy Databook and the Energy Information Administration, residential buildings account for 22% of all US energy consumption. Of that, 30.7% goes toward space heating and 12.3% goes toward space cooling, with another 12.2% going toward water heating. Commercial buildings account another 18% of total US energy consumption. Within those buildings, 14.2% of the energy consumed goes toward space heating, 13.1% goes toward space cooling, and 6% goes toward ventilation. All told, nearly \$142 billion was spent nationally in 2005 on space heating and cooling for both residential and commercial buildings combined.

Now consider that according to the 2005 Residential Energy Consumption Survey, 39% of the residential central air conditioners and 60% of residential heating equipment were more than 10 years old. Since 1990, only 30% of commercial buildings have had their main heating equipment replaced, and only 37% have had their main cooling equipment replaced.

Realizing a 15-20% reduction in energy consumed by residential and commercial buildings, using available technology, is not unreasonable. This would result in \$28 billion in saved energy expenditures while creating a tremendous number of jobs within the HVACR industry as demand for more efficient equipment and its installation occurs. There would also be an increase in tax revenues due to increased jobs and sales/installation of equipment providing a funding mechanism to allow for a balanced approach (tax revenues offsetting tax incentives) to funding tax incentives for individuals and businesses who want to take advantage of technologies available today.

Real World Residential and Commercial Examples

During the last 2 years my company, TAG Mechanical, has worked with Actus Lend Lease as part of their military housing privatization initiative at Ft Drum, NY. During this time we have installed HVACR systems in 845 homes and have also rated over 600 (all 845 will be rated before end of September 08) of these homes to New York State's Energy Star New Home criteria. Our initial efforts involved "right sizing" the HVACR systems and then working with Actus Lend Lease to achieve homes which generally have 30% or lower energy usage as compared to a comparable "code" home. This results in

lower energy costs for the soldiers who live in these homes, improved indoor environments and lower greenhouse gas emissions. A win for everyone because Actus Lend Lease was concerned about providing a superior product to their military customer.

TAG Mechanical Systems, Inc was awarded a contract to perform renovations at the New Boston Air Force Space Command Center located in New Boston, NH. During the initial kick-off meeting for the project multiple stakeholders expressed their views and opinions on the current state of the buildings HVAC system. This facility monitors satellites for the US Air Force and has more than 60% of the facility with mission critical environments which must be maintained 24/7. A major renovation was designed in 1999 and was only now, in 2007, on its third and final phase. Through all of these renovations major operational issues and concerns had not been adequately addressed or corrected and new ones (such as dust accumulating on sensitive data processing equipment) had arisen.

After our initial meeting with the facilities' stakeholders, we performed an extensive operational survey of the facility, collecting data on the existing building's construction, current use and anticipated future requirements. Based upon these findings and development of extensive computer models of the facility we provided a revised scope of work which is projected to reduce utility expenses by approximately \$48,000 per year, improve the reliability of the existing HVACR system, improve temperature and humidity control through-out the facility and provide a simple payback of under 2.5 years (based upon the incremental cost increase from the original contract amount to the proposed new contract amount).

None of this would have been possible if the Air Force had taken a simple "this is what was designed" approach to this particular project. Instead they were willing to consider alternatives that would address their perceived needs and perhaps even a few they didn't know they had.

In the end, the Air Force will have a more efficient facility performing their mission for less cost with better performance from their staff because the environmental conditions will be more acceptable to everyone in the facility.

Tax Incentives

Improved efficiency may be the low hanging fruit in our nation's efforts to reducing energy consumption, but not everyone can reach that fruit to take advantage of its benefits. In the last ten years, efficiencies for central air conditioners, heat pumps, and furnaces have increased tremendously, both through mandatory regulations and research and development by HVACR equipment manufacturers. For example, in 2006, the minimum energy efficiency rating for a residential and light commercial central air conditioning set by the federal government increased 30 percent. In the two years since the Department of Energy raised the federal minimum energy efficiency rating standard for central air conditioners and heat pumps, equipment manufacturers have seen a 25% decrease in the sale of new units, and a 25% increase in the sale of replacement parts. Consumers find it harder to afford the minimum level, so they are forced to maintain

older, inefficient equipment that is more costly to run instead of investing in new, high efficiency models.

Cost is the greatest hurdle to these technologies for homeowners and small businesses. The higher efficiency products cost more in upfront costs, due to higher component costs, installation requirements, and economies of scale. However, the initial investment on a high efficiency appliance earns a shorter payback period with lower life cycle costs.

ACCA has advocated for tax incentives to make higher efficiency equipment more attractive to residential and commercial clients. These tax incentives assist homeowners and building owners in making a more informed choice when purchasing new HVACR and plumbing equipment. In many cases, the incentives helped justify the added cost of a high efficiency system by reducing the payback period of the investment.

Residential Buildings

Section 1333 of the Energy Policy Act of 2005 created a residential tax credit for energy saving home improvements. Homeowners that installed qualifying high efficiency appliances, including central air conditioners, heat pumps, furnaces and boilers, water heaters, and furnace fans during the years 2006 and 2007, could claim a cumulative total \$500 in tax credits over the two years by filing IRS form 5695.

During the years it was available, ACCA members found this particular tax credit to be a strong incentive for home owners to select a higher efficiency furnace, air conditioner, heat pump, boiler, or water heater.

An extension of this tax credit has been included in one of the several energy efficiency and renewable energy tax credit proposals passed by the House and Senate. As you know, these bills have been bogged down due to disagreement over offsets and other issues. I am concerned that the delay in extending this successful tax credit is causing homeowners to miss the opportunity to benefit from lower utility costs and increased energy efficiency.

And now we are facing the prospect of significantly higher prices for heating fuels, such as heating oil, natural gas, and propane. Federal and state governments spend billions on heating fuel assistance for low income individuals. Perhaps some consideration should be given to also assisting in upgrading to more efficient heating equipment.

Most homeowners replace their older, inefficient HVAC and plumbing equipment when it breaks down beyond repair, which typically occurs in January and February for heating equipment, and June, July, and August for cooling equipment. In order to make sure consumers can take full advantage of an extension, action by Congress must be completed in the very short term.

While the extensions proposed would be retroactive to January 1, 2008, these tax credits must be extended beyond the proposed expiration date of December 31, 2008. More than half of the proposed extension has already passed and includes the months that see the

highest incidence of HVAC and plumbing equipment replacement. Homeowners faced with equipment replacement since the beginning of the year could not rely on information that Congress may pass an extension. As a result, we will never know how many homeowners that purchased a new furnace, air conditioner, heat pump, boiler, or hot water heater since the beginning of the year would have opted for a higher efficiency product.

In order to get the maximum impact, Congress must consider at least a two year extension of this important provision. Doubling the term of the extension should not double the cost in lost revenues.

Commercial Buildings

Section 179D of the Internal Revenue Code authorizes the Commercial Building Tax Deduction until December 31, 2008, which allows buildings owners to claim a tax deduction of up to \$1.80 per square foot for expenses incurred for energy-efficient commercial building property in the year in which the building or improvements are placed into service. Extending §179D would give building owners more time to make energy efficiency improvements and take advantage of the \$1.80 per square tax deduction.

Renewal of the residential tax credit and an extension and increase of commercial building tax deduction are critical to encouraging the transition to high efficiency HVACR equipment. ACCA is working to extend these important tax incentives in order to promote energy efficiency and reduced energy consumption.

Accelerated Depreciation Schedules

Under current tax law, a building owner must treat HVACR equipment as non-residential real property and therefore its costs may only be recovered over 39 years. Because the expected lifespan of properly maintained HVACR equipment is only 15 to 20 years, commercial building owners have little or no incentive to upgrade to newer, more energy efficient HVACR equipment.

HR 4574 was introduced by Representatives Melissa Bean and Peter Hoekstra to correct this disparity and reduce the holding period to a more realistic 20 years for HVACR equipment that is 10% more efficient than the federal minimum standards and a 25 year schedule for all other HVACR equipment.

In addition to providing a more realistic depreciation schedule, HR 4574 promotes economic stimulus and energy conservation. Passage of HR 4574 would stimulate domestic job creation at the manufacturing, distribution, and contractor segments in the emerging green market economy. In the past 15 years there have been dramatic advancements in HVACR technology, making the equipment manufactured today extremely energy efficient, which means lower utility bills and less energy use. Providing a financial incentive to building owners now would encourage them to upgrade to more energy efficient equipment instead of waiting until their outdated equipment breaks down beyond repair, which is the current practice today.

Small Business Loan Programs

Rep. Heath Shuler's Small Energy Efficiency Act that was passed into law as part of the Energy Independence and Security Act will encourage small businesses to upgrade by expanding eligibility under current federal loan programs to energy efficiency improvements. The Small Energy Efficiency Act will help America's small businesses take advantage of newer, more efficient heating, ventilation, and air conditioning (HVAC) technologies. This important bill will encourage small business owners to upgrade to systems with lower operating costs instead of simply maintaining their inefficient systems through repair, freeing up more funds for capital investment and job creation.

Increased Public Awareness

The Energy Policy Act of 2005 created two HVAC-specific energy efficiency consumer education and public information initiatives that direct the Environmental Protection Agency, the Department of Energy, and the Small Business Administration to work together and promote energy efficiency by small businesses and home owners and landlords.

Section 132 of the Energy Policy Act directed the Department of Energy and the US EPA to "carry out a program to educate homeowners and small business owners concerning the energy savings from properly conducted maintenance of air conditioning, heating, and ventilating systems." Section 132 also directed the Small Business Administration and the US EPA to develop an Energy Star for Small Business Program.

Funding for Section 132 was "authorized to be appropriated such sums as may be necessary to carry out this subsection, which shall remain available until expended." However, funding has never been requested in the federal budget for this program, or appropriated by Congress.

Section 134 directed the Secretary of Energy to carry out a "comprehensive a comprehensive national program, including advertising and media to inform consumers about the practical, cost effective measures that consumers can take to reduce consumption of electricity, natural gas, and gasoline, including (a) maintaining and repairing heating and cooling ducts and equipment. The intent of section 134 is to promote energy efficiency on a national scale with a general message about by reducing consumption of electricity, natural gas, and petroleum.

The Energy Policy Act authorized \$90,000,000 a year from FY06-FY10 for the purposes of carrying out Section 134, but no money has ever been requested by the White House or appropriated by Congress.

Code Enforcement

Over the course of the last four years, I've performed more heat loss/gain calculations on both residential and commercial buildings than I have in my previous two decades in our business, and there have been times when I've leaned back and thought, "These numbers

can't be right." Properly sized HVACR systems are critical to lowering energy consumption, improving comfort, indoor air quality and reducing greenhouse gas emissions. Too many HVACR systems are designed and installed using "rules of thumbs" and are not reviewed by local Code Officials for compliance with local and national codes. Investments in training code officials and HVACR contractors to understand compliance with the Energy Codes would provide lower energy usage, better indoor environments and more jobs.

ACCA supports HR 4471, the Community Building Code Administration Grant (CBCAG) Act which would award grants, on a competitive basis and with federal matching funds, to qualified local building code enforcement departments to increase staffing, provide staff training, increase staff competence and professional qualifications, support individual certification or departmental accreditation, or for capital expenditures specifically dedicated to department administration

Proper Installation and Maintenance

In too many cases, efficiencies are not realized because of improper or poor installations performed by under trained or poorly trained HVACR contractors. Improper installation of an HVACR system can result in efficiency reductions of up to 50%.

HVAC systems don't operate "out of the box". Today's contractor uses sophisticated tools and programs to design a system that matches the building's intended uses. ACCA members regularly use such programs as ACCA Manual J, N and D to properly size HVACR system prior to installation. They employ standards such as ACCA QI to insure these systems are installed properly and deliver the efficiencies stated in the manufacturer's literature. Finally, they encourage building owners to make use of Standards such as ASHRAE/ACCA 180's Commercial HVAC Maintenance standard to insure these systems continue to perform as specified and design over their intended lifetimes.

A significant market opportunity for improving the quality of HVAC equipment installations and service involves raising the awareness of consumers and building owners / operators about the benefits provided by professional contractors following industry-recognized quality installation practices (e.g., correct equipment selection, installation, and commissioning). Building owners / operators and residential consumers need to be informed of the links between comfort, humidity levels, utility bills, and indoor air quality with a proper HVAC system design and installation. Once aware, consumers will better understand the value of a high performance standard from their HVAC contractor. This understanding will also help position consumers and building owners / operators to consider the complete value-to-cost equation, not merely the "first price," when making HVAC equipment purchasing decisions. Customers who select contractors that promote high performance HVAC equipment – and their proper installation – enjoy enhanced comfort, reduced energy usage, improved occupant productivity, and enhanced occupant safety.

Heating Ventilating and Air-conditioning (HVAC) Contractors use different approaches for inspecting and maintaining HVAC systems. There are many types of “seasonal tune-ups”, “clean and checks”, and “maintenance services” performed on HVAC equipment. However, there was no way to determine if the minimum level of inspection tasks had been performed. This standard was written to establish a minimum level of acceptable compliance for HVAC equipment maintenance inspections.

HVACR systems are the heart of every building making them comfortable places to work and live. However, they are far too often overlooked because they aren't sexy or don't speak to the aesthetic needs of the individuals living and working in these buildings. You, as representatives in Washington, have a unique opportunity to put into place legislation encouraging Americans to take advantage of the technologies available today to help lower their individual energy usage and improve our national security by lowering our dependence on foreign sources of fossil fuels. Put together and pass legislation that will stimulate home and business owners to upgrade their existing HVACR systems.