



**Verbal Testimony of**

**Gordon P. Sharp  
Chairman  
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**Before**

**The House Small Business Committee**

**On**

**Climate Change Solutions for Small Businesses and Family Farmers**

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Chairwoman Velazquez, thank you for the opportunity to speak before you today on how small business can and is addressing climate change. My name is Gordon Sharp, and I am the Chairman and founder of Aircuity. I have started and successfully grown several small businesses built around technology innovation for energy efficiency and am the holder of over 25 US patents.

Aircuity is an example of the impact of small business innovation on addressing climate change. Aircuity has commercialized technology to optimize ventilation for commercial and institutional buildings without sacrificing comfort, safety, or occupant productivity. Since most buildings are actually over-ventilated, properly controlling outside air and building ventilation is the single largest factor affecting both building mechanical system related energy efficiency and indoor environmental performance.

Aircuity's innovation was to develop an improved means for measuring the indoor environment that enables a reliable demand based ventilation approach. Borrowing from the data networks world, we architected a multiplexed sensing system that routes air packets from throughout the building to a centralized set of high grade sensors. The result was a cost-effective, accurate, low maintenance solution that addresses the deficiencies of conventional approaches.

For example, this hearing room is a good candidate for our technology since much of the time this space is not fully occupied requiring less outside air, however like most buildings, it is probably always ventilated at the same high rate wasting significant amounts of energy on cooling, heating and fan power.

In terms of the climate change impact, Aircuity's forecast for 2009 should represent more than \$7.5 million in annual energy savings or an annual reduction of 38,700 metric tons of CO<sub>2</sub>. This is the climate change impact of 30.5 Megawatts or about \$225 million of installed solar PV capacity which is about 7.5% of the total capacity installed last year.

Whereas Aircuity represents a younger small business in a rapid growth stage, Phoenix Controls, another small business that I founded that was later sold to Honeywell, is a more mature business in the field of energy saving airflow controls for laboratories. The climate change impact of their sales last year was roughly equal to the total new US solar PV capacity installed last year. In fact, Phoenix Controls' current installed base of systems is reducing energy consumption by about \$1.1 billion annually representing a carbon footprint reduction of 5.6 million metric tons of CO<sub>2</sub> or the energy equivalent of 1 ¼ days of imported foreign oil.

Regarding the financial practicality of these energy efficiency solutions, cost is often raised as an obstacle whereas in reality, they are solid financial investments. For example Aircuity's systems usually deliver paybacks of from one to 4 years which represent internal rates of return of from 100% to about 20%.

A larger obstacle is actually owner concerns that the projected savings are not achievable or that the technology is too new and from a lesser known small business. This credibility gap can be difficult to cross until there is a critical mass of proven installations. As I have personally experienced, "pioneers are the ones with the arrows in their backs".

One means to help bridge this gap is to introduce incentives from both utilities and the government to reduce the financial barriers for early adopters that are effectively increased by these concerns. Additionally, carbon credits may represent another helpful financial boost. Over time this assistance becomes less important as the technologies' true financial returns become known.

Due to the current high cost of renewable energy, the interest in using energy efficiency to address climate change has increased dramatically. In fact our business has nearly tripled in the last 6 months. On a broader front, in the last 4 years the value of green building construction has gone from about 2 % to a level approaching almost 10% of new construction starts. In the next four years, the green building market is projected to reach between \$96 and \$140 billion annually versus \$36 to \$49 billion today.

There has never been a more important time for small businesses to pursue innovation for energy efficiency and sustainable climate change. Aircuity is proud to be one of many small businesses doing its part to achieve these ends. I want to thank the Committee for the opportunity to appear here today and I would be happy to answer any questions that you might have.