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Introduction

Good afternoon Chairman Graves and Ranking Member Velazquez and Members of the Committee. It is an honor to appear before the House Committee on Small Business today to testify about the role that the Small Business Innovation Research (SBIR) program has played in ecoATM's success.

My name is Tom Tullie, and I am the Chairman and CEO of ecoATM. I have served in this capacity since December 2009. You are to be commended for your role in pursuing successful policies that have strengthened innovation, created jobs, and fostered innovation in the U.S. The SBIR program is one such example. As I will discuss further in my testimony, the SBIR program is among the critical factors that are contributing to ecoATM's early success – those factors that are currently taking us from a small startup to a full fledged corporation, on the verge of forever altering the wasteful lifecycle of consumer electronics in this country.

Earlier this month ecoATM was honored at the DEMO Conference for emerging technologies as one of the 6 most promising business's showcased. A few months earlier we were honored at the CES world trade show with an award for the most innovative technology, and just a short time before that we where honored by Popular Science as one of the best new companies in the US. In 2009 we were named the Most Innovative Product in the Cleantech category by CONNECT. The CONNECT Most Innovative Product Awards are San Diego's "Oscars" for regional tech innovation. (www.connect.org)

The SBIR program was and continues to be important to our success. We applaud the Committee for holding this hearing today to learn about ways in which the SBIR

program can be strengthened and renewed to ensure that other future success stories are possible for the benefit of the American people.

ecoATM Overview Today

Based in San Diego, California, ecoATM (www.ecoatm.com) is the first company to create an automated, self-serve kiosk system that uses patented, advanced machine vision, electronic diagnostics, and artificial intelligence to evaluate and buy-back used electronics directly from consumers for cash or store credit. ecoATM's eCycling stations provide a convenient buy-back and trade-in solution that:

- electronically and/or visually inspect virtually any consumer electronic device,
- connects consumers in real-time with a broad worldwide secondary market to ensure best pricing, and
- pays consumers immediately in cash and/or store credit, and
- automatically administers trade-in / trade-up promotions for retailers and manufacturers.

In its infancy, ecoATM was supported by EvoNexus, the incubator for early-stage high-tech companies, begun by San Diego's high tech industry group, CommNexus. Since then, ecoATM has been recognized by Popular Science, International Electronics Recycling Conference & Expo (IERCE), Green:Net, CES Innovations, and others. (www.ecoatm.com/about-awards.htm)

ecoATM was founded in 2008 with a vision of forever altering the path of consumer electronics in the United States and abroad. Today, following through on that vision, ecoATM has turned to technology itself as seen in the creation of the first fully automated self serve e-cycling station, the ecoATM. The ecoATM was conceived based on the core assumptions that convenience and immediate financial incentive would dramatically increase consumer recycling rates. Turns out this core assumption is true. In less than a year with only 10 machines, ecoATM has harvested over 50,000 mobile phones and paid out over $600k to customers. But before I delve into our success any further, let me shed some light on the current world wide e-waste problem.

Identification and Significance of the Opportunity

As the growth of wireless communications continues and constant innovation ushers in new-generation technologies with new and expanded features, the last few years have seen a relentless flow of retired mobile phones that are being displaced by new purchases. Greater than 80% of new phone sales replace an existing handset. Unfortunately, only a relatively small percentage of these displaced phones find their way into recycling channels.

In the United States alone, an estimated one billion used phones already sit in drawers, with more than 150 million newly-retired phones joining them every year. *The current drawer-bound cache of 1 billion phones has an estimated total value of $12.2 billion if they were to be recycled*. Recently displaced handsets that are less than 2 years old retain an average value of $18 each at collection and before any refurbishment. Upon

refurbishment, the average value jumps to well over $50. Phones that make up the next category generally are over 2 years old and still retain a vibrant aftermarket. These phones yield an average $2 value at collection and over $25 average value after refurbishment. The remaining phones are generally considered "end of life" and are worth roughly $.65 per phone when smelted down to reclaim precious metals.

On the other end of the recycling equation, the demand for refurbished mobile phones continues to rapidly accelerate, due largely to the explosive growth of wireless markets within developing countries. The number of subscribers in emerging markets is projected to surpass those in existing markets during 2010 and to continue accelerating over the next five years.

This widespread expansion in the market is due largely to the fact that many developing countries do not have extensive legacy investments in wireline-based communications and therefore are moving directly to wireless systems to meet their citizens' emerging communications requirements. However, with approximately 90 percent of the populace in these developing countries living on $3 or less per day, the cost of a mobile handset is a major consideration. In fact, the investment in a mobile handset for many buyers in developing countries can be comparable to the purchase of an automobile for buyers in developed countries.

Today, in India alone, a market of over 1 billion potential subscribers with a current 40% penetration rate, as many as 15 million mobile subscribers earning less than $1,000 per year are being added to the mobile networks per month. As a result, *the cost-advantages of refurbished handsets present a significant ongoing, lasting value for a significant number of subscribers in these emerging markets*.

Another key factor in laying the groundwork of opportunity has been the evolution of mechanisms and channels for handling recycled mobile phones. A number of companies are OEM-certified and carrier-certified to perform complete software and hardware repair, and have already established solid industry reputations by helping to pioneer the ecosystem for efficiently refurbishing and redeploying displaced handsets back into the US and into emerging markets.

An equally important and quickly maturing aspect of this business is the collections of used phones from consumers. Methods vary from donation drop boxes, to e-waste drives, to mail-in programs, to point-of-sale buy-back systems.

Consumer electronics retailers are struggling to comply with growing federal, state, and local laws governing the "take-back" and recycling of the consumer electronics they sell. Eager to turn these cost-centers, take-back programs into profit centers and find a competitive advantage, many retailers have successfully embraced trade-in / trade-up incentive programs driving foot-traffic, revenue-lift, and sales of new devices through manual or POS-driven eCycling take-back systems. However, the labor and complexity of the "reverse-logistics" process to date has negated any potential profit gains and overwhelmed store staff and corporate logistics. *Therefore, consumer electronics retailers, OEMs, and wireless carriers are eager for a turn-key solution which complies with regulations, fully automates the take-back and reverse-logistics process, and manages the incentive rewards programs*.

In summation, we see a mounting cache of unused devices with value, while a

simultaneous and growing demand exists for these devices in emerging markets. The problem at hand is how to efficiently connect this growing supply with this growing demand and in the process keep this devices from becoming toxic eWaste in our landfills.

Environmental Threat

Many people may not realize that their cell and smartphones contain chemicals that pose a threat to humans and the environment if they are discarded and end up in landfills. Once in landfills, those chemicals will eventually seep into the water-table as a toxic stew. Each year, over 75,000 tons of cell/smartphones find their way to landfills. Additionally, in the making of just one phone, 3 tons of mining waste is generated. Thus, our activities protect the environment by keeping toxic waste out of landfills and maximizing legitimate product reuse, mitigating the need for additional resource mining. Our streamlined operations mean that we collect and move materials more efficiently than other systems, and we prove our beneficial impact on the environment every single day by measuring the removal of carbon and toxic waste from the environment.

The ecoATM Solution

The ecoATM has demonstrated a strong potential to bring **hundreds of millions** of dormant phones and other consumer electronics out of household drawers and into the recycling stream. ecoATM's self-serve Automated e-Cycling stations visually and electrically inspect used consumer electronics, and will allow consumers to receive immediate cash remuneration for their used electronics. We believe the ecoATM stations will become commonplace in electronic retailers over the next few years by allowing retailers to automatically monetize this supply of used devices and comply with evolving eWaste laws.

ecoATM and The SBIR Program

During its critical 2nd year, ecoATM received a Phase 1 SBIR grant that directly funded the development of our advanced vision and electrical test systems for the identification of electronic devices. The objective of the Phase I program is to experimentally verify that ecoATM's patented technology enables phones to be accurately inspected both visually and electronically by an ecoATM Automated eCycling Station. This provides the key factor that appeals to consumers (immediate financial incentive and convenience), plus important benefits to the retailers that host the ecoATM Automated eCycling Station (generating money to be spent in the store). ecoATM has made great strides with its visual and electrical test systems and continues to require funding and resources to further develop this critical piece of the ecoATM solution. The vision system is now capable of identifying over 1000 phone models with error rates in the fractions of a percent range.

The vision and electrical systems are the most resource and capital intensive component of the ecoATM kiosk and also the most important factor for an effective

kiosk. The vision system needs to not only identify the make and model of a device, but must be capable of evaluating the mechanical condition of the device, the condition of the screen, and ultimately determining the device's value.

After the benefits we received from the Phase 1 award, we are in the process of applying for a Phase 2 award. A Phase 2 SBIR grant would allow ecoATM to expand vision and electrical technology development to include additional device take-back categories including but not limited to, laptops, digital cameras, GPS systems, video games, e-readers, ink cartridges, printers, and PCs. Phase 2 would also bring even more precision to the vision component and further improve error rates and device identification and condition accuracy.

Additionally, Phase 2 funding would allow us to explore methods and apparatuses for the development of a standard process for the erasure of personal data from flash memory based devices, such as mobile phones, MP3 players and increasingly laptops, tablets, e-readers and other portable electronics. Lack of an industry standard for flash memory based device data erase has created a major impediment to consumers and enterprises to recycle these devices due to concern over personal or corporate data security. In fact, it's estimated that the US government alone has stashed tens of millions of used flashed based mobile phones locked in storage based on this concern, not to mention millions of other flash based device types.

SBIR, Start-Ups, and Venture Capital

SBIR funds should not be artificially prohibited or limited in relation to private investments. Venture capital does not artificially avoid investing in companies that receive SBIRs and the reverse should not be true because VCs and SBIR funds are aligned in their interest in spurring innovation and commercial success. The SBIR program is a great tool for start-ups to achieve financial support in a currently very difficult fundraising market which can often be the major barrier to commercial success. I would like to share with the committee my three main points related to the allocation and disbursement criteria of SBIR grants to venture capital backed companies:

VC's are good at picking technology and commercial winners

First, companies successful at raising capital through private sources or traditional VC's should not be precluded from receiving an SBIR grant. In fact, the achievement of VC funding should serve as an indicator for a strong possible SBIR grant candidate. VC's are very effective at their core competency, which is identifying technologies and companies with significant commercial potential. Grant money should be allocated where it has the best chance to add value, make a commercial impact, and make a return to the community. In this very important sense, the intent of VCs and the SBIR process are naturally aligned.

SBIRs create a catalyst for private investment

Secondly, when a small company such as ecoATM lands SBIR funds, this helps provide a critical catalyst for attracting private investment. It brings

credibility to the company and the technology which helps attract private investments from VC's for later rounds. Regardless if a company has raised money, the allocation of grant money can allow an already promising company to allocate additional capital for quicker development or direct capital to an ancillary piece of their business. And it also makes the overall economics more attractive for investors. I believe there is no reason for any rules to exist that force any artificial separation of government investments from private investments because both are aimed at achieving the same goal; providing capital to a deserving candidate with potential for success.

Criteria for allowing a grantee to receive both SBIR and VC monies should be based on broadened criteria and not artificially limited to 25% of total funds

Thirdly, the criteria should not be simplified to a binary issue of whether or not public and private investments are allowed or at a specific threshold of 25% or otherwise. A more meaningful and granular set of criteria would focus other criteria such as whether or not the investment has a public and/or environmental benefit (double bottom line and/or triple bottom line). A double bottom line is a business which not only demonstrates a strong financial bottom line but also provides a public benefit or bottom line. A triple bottom line would be a business that in addition to financial and public benefits, contains a 3rd benefit such as an environmental contribution. Investments that can demonstrate multiple bottom lines should be given special consideration for SBIR allocations and not be passed over because of a 25% or any other artificial threshold.

ecoATM is a great example of a business with a triple bottom line and there are many others. Aside from the financial viability of our business, we have demonstrated an impressive second bottom line in that it creates a large financial stimulus package for the public from devices that would otherwise become toxic eWaste in our landfills, and puts these used devices into the hands of people both foreign and domestic who may not be able to afford them otherwise. The 3rd bottom line for ecoATM is the environmental benefit which is substantial. In fact, after 1 year of 12 pilot kiosk deployments, the average ecoATM kiosk has the equivalent offsets of; diverting 25,681 tons of toxic mining waste by reclaiming/recycling precious metals, off setting 4,309 Kg of greenhouse gases, saving 426 gallons of oil, removing 21 houses from the grid (electricity saved), removing 16 automobiles off the road, or planting 2000 trees. The ecoATM kiosks have a tremendous environmental impact and continue to grow in their collection of electronic devices. *The SBIR grant we received has helped tremendously in our pursuit of all 3 bottom lines and without that support we cannot pursue our business as quickly or effectively.*

Conclusions

In conclusion, it's a pleasure to share the ecoATM story and our financial, social, and environmental benefits. However, I should be clear that the SBIR process should not preclude investments in companies like ours that happen to be successful at raising

private venture capital. SBIR has already played an important role in our early success with a Phase 1 grant but because we have recently been successful at raising private venture capital we are in jeopardy of being disqualified for a Phase 2 grant because we no longer fit the mold. While hypothetically we may have still survived and existed without a Phase 1 grant or Phase 2 grant in the future, the grants are an accelerator and provide critical mass at a critical phase. Granting the same money elsewhere would not result in a greater public good.

I am sure the Committee shares my belief that it is critical for the US to retain its role as the world's leader in innovation. And in my view, allowing a mixture of SBIR and private investments is exactly the kind of public and private partnership that is needed to boost our mutual fortunes. I hope my testimony has been clear and will play a role in convincing the Committee, and the rest of the House of Representatives, that artificial limits on mixing SBIR with private investments should not be governed by the simple blunt instrument of a 25% cap but instead could be broadened even further, and in that expanded process should consider other criteria such as public benefit and probability of commercial success as important factors to future grants.

Thank you again for the opportunity to appear before this Committee. I look forward to answering your questions.