

## Wireless Charging Technology for Electric Vehicle Fleets



**Kathleen Chapman, CFO**



**Gregory Stahl, CMO**

### Clean Technology Wireless Charging for Electric Vehicles



Interview conducted by:  
**Lynn Fosse, Senior Editor**

#### About HEVO Power:

Built on the vision of creating the global standard for wireless charging, the mission of HEVO today is to accelerate the adoption of electric vehicles through the deployment of our wireless charging network. By offering a wireless charging option for electric vehicles, HEVO will provide a safe, fast and cost affordable method of charging EVs that eliminates the hazards and inconveniences associated with plug-in charging.

**CEOCFO:** Ms. Chapman, what is the basic concept at HEVO Power?

**Ms. Chapman:** We are building a wireless charging technology for electric vehicles that is focused primarily at commercial fleets, as well as military and university fleets, which are rapidly adopting electric vehicles. Most of these fleets currently use a plug-in station, but have issues with these stations, things as simple as drivers forgetting to plug the vehicles in, so when they go to use the truck the next day, the trucks are not properly charged. A wireless solution would help fleet managers avoid issues like this.

**CEOCFO:** What is the science? How can this be done in a wireless fashion?

**Mr. Stahl:** We use magnetic resonance technology. Imagine a FM tuner - you have a charging station that is fully embedded within the ground, like a manhole cover, and then you have a wireless receiver that is up-fitted on the electric vehicle. Like an FM tuner, when the car pulls up over the station it makes sure that it is operating at the same frequency, engages and starts charging your vehicle.

**CEOCFO:** Has this been thought of before? Was there no previous way to accomplish it or is it a new idea whose time has come?

**Ms. Chapman:** I think electric vehicles, especially in the commercial space, are a somewhat new phenomenon. Currently in the market there are about eighty-five thousand electric vehicles but that is forecast to grow to three hundred thousand vehicles by 2018. The simplest solution had been to use plug in stations, but as mentioned before there had been issues, not only forgetting to plug in but also damage to the stations themselves from drivers backing into them or issues with people tripping over the cord. Fleet managers are really looking for a wireless solution. There are some solutions in the market but those current commercial products either charge at lower charging rates than what we are doing or at lower distances than what our technology is doing so they are not really viable solutions for commercial fleets at the moment.

**CEOCFO:** Where are you in the process of commercializing? What is happening right now?

**Mr. Stahl:** Currently, we are still in technological development and have signed on some pilot partners. Our first pilot partner will be New York University and we will be launching a pilot with them in early 2014 near their campus. This will be an opportunity for real world testing; we will have a station that we can monitor and ensure that the technology is working as designed. We then anticipate a full commercial rollout near the end of 2014.

**CEOCFO:** What have you found so far as you have developed the product? What have you needed to tweak to get to the point where you are ready now?

**Ms. Chapman:** We are constantly making revisions in our manufacturing process. At first we thought about such big picture questions as “Should we manufacture the power stations ourselves?” or “Should we employ contract manufacturers?” We decided to employ contract manufacturers and now we have to consider things like the enclosures, including how we are going to enclose the product itself to protect it and ensure that it can withstand pressure, weather and all kinds of environmental impacts. We originally started out with an enclosure that weighed one hundred ten pounds and subsequently revised that product down to something that weighs closer to fifty pounds and is able to withstand the type of heat that we require.

**Mr. Stahl:** I would like to add that as we grow and adapt, we are finding new areas and challenges that we need to focus on. Like developing any hardware, building our charging technology has been an iterative process and that is to be expected. We are nearing the end of that process and getting to a point where we can go live with this technology, which is quite exciting for us.

**CEOCFO:** Do the people that should be aware of HEVO know about your progress? Has the industry been paying attention or are you still a little below the radar?

**Mr. Stahl:** We have tried to keep things slightly below the radar, because as we are working, our competitors are also working on technology, and we want to get it to a point where people are really excited about HEVO, where they can actually buy our products. We are not quite there yet. In terms of “do the people that we want to know, know?”; absolutely. We did quite a bit of research in the beginning to determine that commercial fleets were indeed the market that we wanted to go after. After making that decision early on, we developed relationships with the commercial fleet OEMs, so the manufacturers that are actually building these trucks and other types of vehicles. And also, the end users as well, so the Frito Lays, the Walgreens of the world, we have developed relationships with the right people there. Most recently we have

received some really positive press from publications like Wired, Business Week and Fast Company, talking about our technology and how unique it is and the prospects they see with HEVO. All said, I believe we have done a good job getting exposure to the people that we need to.

**CEOCFO:** I cannot imagine that people would not be interested; why would you want to plug in to something when you do not have to?

**Ms. Chapman:** It is a very exciting project to be involved with. I was at a Cleanweb event, for example, talking to people in all different aspects of technology and it is really fun to talk about what we are doing and hear how excited people are.

**CEOCFO:** What are the next steps? You mentioned a pilot program with NYU; what else is on the horizon?

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**Ms. Chapman:** There are lots of exciting things coming up. First of all, next week, myself, our CEO and COO are headed to California. We won the Cleantech Open Northeast Prize, so we are going out to California for the Global Competition, which has been great exposure for us as well as winning some prize money. Our pilot program begins in the first quarter of 2014. We are also working with manufacturers to determine which companies we are going to use to manufacture the product and how we are going to handle logistical aspects, including matters as simple as where we ship the product from and which pieces we manufacture in which location.

**Mr. Stahl:** I would just add one quick point in that the pilot program. As we have said, NYU is our first partner but we have lined up several other partners. We will be running multiple pilots with different types of vehicles in different locations under different settings. We are really excited to launch with these partners and they are ex-

cited as well to have this technology and be some of the first people to experience it. Running multiple pilot programs is going to be something that confirms what we are doing here will work in the real world.

**CEOCFO:** Are you funded for the next steps?

**Ms. Chapman:** We are not currently funded for the next steps. So far we have mostly been funded by the VA. Our founder is a service disabled veteran and so we have gotten some VA money as well as funding from friends and family. We are currently doing a \$500,000 convertible note round, of which we have one angel investor involved as well as some money we received from winning the Cleantech Open competition I mentioned earlier.

**CEOCFO:** Why should the business and investment community pay attention to HEVO Power today?

**Ms. Chapman:** We are on the verge of bringing an exciting technology to the market. Technology that I think people in the market today are already asking and looking for. We have developed the necessary relationships to bring that product to the market. The progress that we have made to today is tremendous and we are, like I said, on the verge of bringing this exciting new product to the market, something that people have not really seen before.

**Mr. Stahl:** I would just add to that as well, we are going after a piece of the market that we have confirmed has huge potential, the commercial fleet market. This is where the current real need lies and we see a very bright future with our commercial fleet partners. With that being said, down the road we see most certainly a need for a public charging infrastructure, and this has been confirmed by both the cities of New York and San Francisco and their desires to have on-the-road charging for people to utilize. Also, we believe that if we can crack the commercial fleet market and create a product that truly is reliable and works in many conditions, this will be something the passenger market is also interested in.