Electric car test track coming to USU | SELECT

09/17/2014

Standard Examiner — September 17, 2014

NORTH LOGAN – Utah State University will break ground Tuesday for its Electric Vehicle and Roadway Research Facility and Test Track, the first facility of its kind in the United States.

The complex will include a 4,800-square-foot research building and electrified quarter-mile oval-shaped test track designed to demonstrate in-motion wireless power charging for electric vehicles.

The EVR provides a glimpse into a visionary future of transportation: electric vehicles with unlimited range. Using wireless inductive power transfer pads embedded in the roadway, electric vehicles can seamlessly charge while in motion, drastically reducing the need for large battery packs and cumbersome charging stations.

This technology, adopted at a market penetration rate of only 20 percent by 2035, could result in $180 billion in annual cost savings, a 20 percent reduction in air pollution and a 10 percent reduction in CO2 emissions in the United States, USU says.

In-motion wireless charging technology will help alleviate common concerns about electric vehicle ownership including safety, convenience and range anxiety. Researchers and project leaders at Utah State anticipate that vehicles equipped with this technology will cost 30 percent less than current electric vehicles and 75 percent less to operate than conventional, gasoline-powered vehicles. The net effect will be transportation that could cost up to 60 percent less to own and operate than a traditional vehicle purchased today.

Utah State began pioneering wireless electric vehicle technology starting with stationary wireless charging. Rob Behunin, vice president for Advancement and Commercialization at USU, said, “The desire to move along this trajectory from stationary charging to in-motion charging has always been part of the research strategy. It’s about working out the bugs, the challenges and the science.”

The facility will have a 750 kW power capacity, complete with AC/DC power distribution to the roadway. Electricity used to power the roadway can also come from future solar panels to be built in the center of the track oval. The entire facility will also be fully networked, allowing data on roadway and vehicle performance to be collected in real-time.

Regan Zane, USTAR endowed professor of electrical and computer engineering, is the principal investigator for the EVR project. He will be a key contributor to the scientific research and development opportunities provided at the EVR. Zane is the founder of the USU Power Electronics Lab in the College of Engineering and primarily focuses his academic research on power engineering and design.

A USU-led team is cultivating funding opportunities and industry partners in order to jump start technology development in related fields, including modular power electronics, energy storage and management and environmentally conscious propulsion. The development of these technologies will lead to additional opportunities for USU and further promote the efficacy and impact of the EVR.