Magnetic Resonant Storage for Energy Transmission

A Research and Development to Product Summary

In the current technological age energy generation, storage, and transfer present fundamental engineering challenges to a society increasingly dependent. Diversity of energy in technological growth is the driver of future innovation beyond state-of-the-art. This document will briefly discuss a means of resonant storage and transmission of electrical currents applied to solving real world problems while enhancing the customer experience. Regarded more generally under the principle of wireless energy transfer, the product is a specific type of highly-efficient electrical energy distribution so as to give the user the ability to transmit electrical power transparently at a distance without wires.

Typical applications would require that enough electrical power be transmitted so that real-world consumer appliances, portable devices, and interior lighting schemes could operate. Robotics appliances, namely their recharging stations, are ideal candidates. Applications where it is desirable power be transported through walls is possible. We have models which can ignite lamps at a distance and power flows on flexible surfaces. In more advanced frames, wireless power aids in magnetic containment of particles and energies. Energy storage is an innovative technological field which benefits high-density magnetic field containment of energetic reactions such as those in nuclear fission and fusion.

A stand-alone product example would be: a pearlescent streamlined pillbox case with sublimely rounded corners with the script *Wireless Power* embossed. There is a two-position button: first press is for oscillator power, second press is to engage the antenna which connects to small pins on the body at the front apex. The product comes with two receivers, in one model, with lamps. The product this package offers the user is the ability to set the unit with its receivers in close-proximity at a harmless frequency who receive their power through the magnetic field.

An integrated product example would be: a tandem device embedded where movements of a rotating knuckle or shaft has a sufficient geometric problem where the transfer of currents by wire are inappropriate or infeasible. Also, the transfer of currents by induction in very close-proximity schemes where connectors have to be sealed in a form of insulative polymer.

The company is primarily engaged with research and development of technical knowledge and expertise of wireless power at near and mid-range distances which also performs manufacturing of oscillators, antennas, and ancillary or supplemental parts such as components required for setup and calibration of the implementation or in variation of the product styles and lines in a laboratory setting.

The company, Cartheur Technology Research, is a start-up owned and administered by an American engineer and his Czech wife in the Netherlands. I am looking to implement the subject of my dissertation, *Wireless Power by Magnetic Resonance*, and the prototypes it has thus far yielded. Besides conducting research on the aforementioned topic in a laboratory setting, we will be involved in some manufacturing activities. There is a rising opportunity to create a niche market in advanced satellite, space, and defense sectors, some of which have already been explored by myself as being good opportunities to create specifically-tailored, highly advanced products. The technology is also applied to the advancement of metamaterials and investigation into the phenomenon of quantum teleportation. The consumer market remains untapped in its potential and a presence has yet to be established despite WiTricity, Powermat, and other companies.

We are looking to raise in total $15M (€10M). We are also looking for financial management advice on our 1st round of funding. Some of our operational funding can be secured through grant schemes within the European Union in both commercial and academic spheres from 2012 beyond. Potential future projects can yield €600k of cost-reimbursement through FP7 and other thematically-related frameworks. Publically-funded collaboration is possible in the US, EU, and UK. This activity, however, presents challenges to profitability as opposed to private funding.

This opportunity is new and potentially vast. Power transmitted via the air without wires not toxic to a human presence. My work in this field demonstrates that such technologies have lain dormant over the history of electrical engineering; in the right hands they could dramatically improve the lives of many people in their activities across socio-economic groups over the long-term. There is little competition presently and room for a pioneer to enter the arena. Measured by the members of the Wireless Power Consortium, there is a great industrial interest. Personally, when I have shown wireless power operational in private engagements, in many cases they find it indistinguishable from magic.

Thank you for your kind attention.

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