Brainstorm: Smart Grid & Alternative Energy

What market segment is in the direst need of an alternative energy overhaul and why?

Joe Keating, Infinite Power Solutions, www.infinitepowersolutions.com **[1]**

These days most people immediately think of cars or homes as the main beneficiaries of alternative energy. Results to this point have been mixed due to the challenges of producing successful, economical alternatives to fossil fuels. However, one market in particular, wireless sensors, is poised to reap great benefits from alternative energy in the form of micro-energy harvesting resulting in self-powered sensor networks. Small, inexpensive energy harvesting devices such as solar panels, piezo-electric films and thermo electric generators are available now that can harvest sufficient energy from their ambient environments to recharge a permanently installed, long lasting and low leakage energy storage device, such as a solid-state, rechargeable, THINERGY Micro-Energy Cell (MEC) from Infinite Power Solutions. This combination of micro-energy harvesting and storage enables decades of maintenance-free, reliable power for autonomous wireless sensor operation.

In addition, this pairing has two major benefits, the first being that the cost of operating the sensor nodes is greatly reduced (no labor costs) since no batteries will have to be changed for the lifetime of the sensor nodes. The second major benefit is that this will allow a much larger deployment of sensors since no additional wiring (often cost prohibitive) will have to be added to communicate with or to power the sensors. Greater sensor deployment will, in turn, reduce equipment maintenance costs, increase operating safety of many types of systems (like aircraft or some public transportation), and will reduce building operating costs by making HVAC systems run more efficiently. Consequently, alternative energy powered wireless sensing networks utilizing micro-energy harvesting and solid-state MECs for energy storage will make target systems more energy efficient while resulting in great savings in maintenance and operating costs.

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