

New Technologies Harvest Energy From Movements, Sound And More

Steve Johnson, San Jose | [Phys](#)

Fed up with constantly having to recharge or replace batteries in your ever-expanding trove of electronic gadgets? The solution may be just a few steps away.



“Energy harvesting” promises to [power](#) innumerable consumer devices, often with nothing more than your body’s movement or heat. Dozens of companies around the world already offer such products, primarily for controlling lighting and temperature-control systems, but many experts believe the market for the technology could explode thanks to [electronic gadgets](#) being developed for the Internet of Things.

“It’s huge,” said Graham Martin, CEO of the EnOcean Alliance, a San Ramon-based group of businesses that promotes wireless energy-harvesting technologies.

With the Internet of Things expected to incorporate billions of devices, “if they’re all battery-powered, we’ll have a problem because there’s not enough lithium in the world,” he added. “So a lot of them will have to use energy harvesting.”

Among the most basic forms of the technology is body power. When certain materials are squeezed or stretched, the movement of their atoms creates an electrical charge. Automatic watches have employed the concept for decades, for example, by winding themselves when their user moves their arm. Now, the concept is being considered for a multitude of other devices.

Consumer electronics giant Philips sells a switch that wirelessly operates room lights, powered only by the tap of a finger. A similar light switch developed by EcoHarvester of Berkeley, displayed at the 2014 Consumer Electronics Show in Las Vegas, gets its energy when someone merely gives it a turn.

Leg power also has promise, according to energy consultant Christine Hertzog. By generating [electricity](#) from students walking across a floor, she has blogged, “schools could harness the pitter-patter of little feet to power some of their building needs.”

In fact, some European nightclubs already supply some of their energy from people dancing on floors, which compress to generate electricity.

Apple has been mulling a slightly different approach. In a patent it obtained last year, the Cupertino company proposed using magnets beside a circuit board with printed coils to generate electricity “when a user shakes the system or when the user walks or runs while holding the device.” The consumer-products leviathan said it envisions the technology being useful for video recorders, cameras, laptops and other devices.

[\[read full post here\]](#)