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Network architecture and gear to keep your data safe and moving

[PoE and the Green Enterprise](#)

Posted by Arthur Cole on June 3, 2008 at 5:25 pm

The enterprise networking community is caught in a bind. Like many sectors of the modern economy, it finds itself having to serve two masters: increased performance and productivity on the one hand, and lower energy consumption on the other.

This divide is most prevalent on the Ethernet. On the one hand, you have pressure from groups like the [Energy Efficient Ethernet](#) consortium trying to squeeze as much juice out of Ethernet PHYs as possible. On the other, you have the growing Power over Ethernet (PoE) movement that promises to increase the network energy draw.

The latest research seems to indicate that [increased power consumption will be the wave of the future for the Ethernet](#). Research from UK network solutions provider Panduit indicates that PoE is about to make the jump from relatively low-power applications like VoIP and wireless access to more high-powered devices, like thin client computers. The next-generation PoE standards are expected to boost power availability up to 30 watts.

And current technology is already pushing beyond that. Taiwan firm [Phihong](#) recently introduced a 45W DC-DC PoE splitter that the company says can be used to run everything from remote workstations to LED ad displays. The device works with 10BASE-T, 100BASE-T and 1000BASE-T rates up to 100 meters over Cat5 cable or better.

These developments are no doubt causing a certain amount of hand-wringing in Ethernet circles, but the problem may not be as serious as it seems. As Microsemi Corp.'s Daniel Feldman points out in [this white paper](#), the question isn't whether PoE increases energy consumption on the Ethernet alone, but rather, does it help to reduce consumption in the enterprise overall? His analysis of PoE vs. AC adapter usage indicates that PoE is more efficient, particularly with the higher-voltage devices that typically populate the network. There's a lot of math here to explain these conclusions, so I'm sure all you engineers will love it.

And Networking's Jon Collins reports here that top switch vendors are already planning for [power regulation technologies](#) in their PoE products to, say, redirect energy away from devices that aren't moving any data at the moment.

It would be a shame if short-sightedness and limited thinking were to get in the way of an energy-efficient development like PoE. Regardless of which infrastructure, or which device, uses more or less energy, the goal is overall reduction. The best way to determine if a new technology is efficient is to check the number at the bottom of the electric bill each month.

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