Brainstorm: The Smart Grid

Edited by Jason Lomberg, Technical Editor

What is your opinion on the smart grid? Do you support or oppose its deployment?

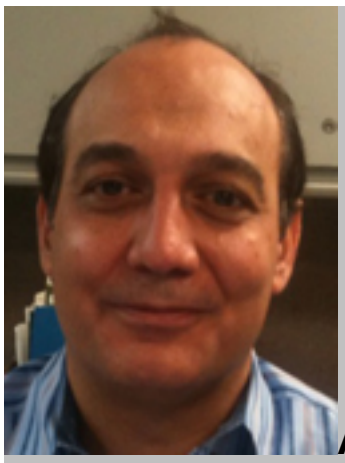
Jim Adams, Altera, www.altera.com [1]

Deployment of a smart electrical grid is a large undertaking, requiring the system to operate across many diverse service situations. Through collaboration of technology leaders, utilities and consumers, a smart grid network with 100% coverage can be successfully deployed, but only if these leaders work together to create solutions to do so.

Deployment solutions must promote innovation and cut costs, while modernizing the grid. Flexibility plus consumer education are the critical factors to the successful adoption and deployment of the smart grid. Hot, Flat and Crowded: Why we need a green revolution – and how it can renew America, Thomas Friedman's best-selling book, contends that technology exists to fundamentally change the way we use energy.

We support the deployment of the smart grid and take it even further to an FPGA-based "Energy Aware" appliance platform. This proven platform delivers reliable performance and rapid development that increases homeowner awareness and effectively saves energy by monitoring and controlling appliances connected to a home area network (HAN). Moreover, it enables utilities to remotely control and monitor consumer energy usage and to directly communicate to homeowners as necessary. In short, it offers a new way of life devoted to a greener, better environment for everyone.

Deployment of the smart grid can only be the convergence of IT and operational technology applied to the electric grid. This will allow sustainable options to customers and improved security, reliability and efficiency to electrical utilities. Technology leaders have the opportunity to deploy a smarter electric grid that many believe will help the world meet many of the challenges that may lie ahead.



Amir Asvadi, Microsemi, www.microsemi.com [2]

Microsemi actively supports Smart Grid deployment. It will significantly improve energy delivery while also enabling command-and-control capabilities that will create a more efficient ecosystem for renewable energy generation and distribution, and home/business energy management. According to a December 2009 report from Pike Research, cumulative global spending on Smart Grid technologies is expected to reach $200 billion between 2008 and 2015.

Achieving the Smart Grid's promise requires a robust network that can connect a wide variety of interoperable, cost-effective and power-efficient electrical appliances and smart sensors. This starts at the silicon level. For instance, Microsemi recently introduced a device for smart-metering applications that integrates all battery management, over-current and thermal detection, power failure and other functions into a single compact application-specific integrated circuit (ASIC). Combining these power-management functions into a single device will reduce the size and cost of Smart Grid products while shortening time to market.

Microsemi is also extending its power-management expertise into the creation of a variety of other Smart Grid solutions. We are applying our digital and analog IC expertise to combine standard blocks such as LDOs, regulators, battery chargers and I2C interfaces into ASIC solutions that solve a broad range of Smart Grid deployment challenges.

Video Response from **Tim Dry, Renesas,** www.am.renesas.com **[3]**

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