

# Smart Homes and Smart Grid

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## ABSTRACT

In our quest to move towards a wider dependence on renewable energy, a necessary first step is to reduce the overall amount of energy we use. Smart grid helps us towards that goal by leveraging the most effective motivator of human behavior: cost.

The wholesale cost of power to a local utility is determined on an hourly basis just one day ahead, with the given cost at any moment based on supply and demand. Factors influencing price include: price of fuels used to generate electricity; consumer demand; transmission constraints; and line losses. Over the course of the year, costs can swing widely.

Currently, most consumers pay a relatively flat rate. Even Time-Of-Use rates, which reflect on- and off-peak rates, are fixed by tariff.

Smart grid is a technology that provides two-way communication between the utility and its customers. It has the potential for utilities to notify customers of real-time power costs; track usage and bill customers for the value of power at that moment; and importantly, for customers to have the ability to adjust their power consumption in response to rising costs.

This presentation will provide a background on smart grid technology, how it is currently being applied on a limited basis, regulatory drivers, and forecasts for implementation.

## BIOGRAPHY

Mr. Bertuch has more than 30 years professional experience as a consultant and plant engineer. He is currently Principal - Energy Solutions for Bergmann Associates in Syracuse, NY. He is a registered professional engineer (NY, MA, MI), Certified Energy Manager, and LEED accredited professional.

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