Power Generation
The incorporation of nontraditional power-generation resources such as wind and other renewable energy systems is creating new technical challenges within the industry. Some resources, such as rooftop photovoltaic systems, are being placed in parts of the electric system where previously power generation resources never existed—for example, a house or commercial building.

Gordon van Welie, president and chief executive officer of the Independent System Operator New England (ISONE) explains the issue. “Over the next 10 to 20 years, the power system will have a much greater penetration of intermittent resources like renewable energy resources, demand resources and distributed generation. It wouldn’t surprise me to see that, 10 years from now, 20% to 30% of our power will be generated from alternative resources, which will be less predictable and will increase the complexity of the system operator’s job. Development and implementation of smart grid technology will help us manage that complexity and operational risks, in particular, by increasing the speed and granularity of data acquisition, as well as improved software tools that will enhance the operator’s ability to ensure power system reliability.”

Traditional resources such as coal, nuclear and natural gas plants will also continue to play an important role. Despite its high carbon dioxide and other emissions, most industry analysts expect coal, which currently supplies 50% of the electricity generated in the U.S., to continue being the workhorse of the industry. In the view of Michael Morris, president and chief executive officer of American Electric Power, one of the largest utilities and owners of generation assets in the country, “I am clear in my mind that carbon-control technology will be deployed in the 2020–2030

AT&T: A Smart Choice for Utilities
The key to fully tapping the promise of the smart grid in the electric utility industry is highly secure and reliable communications—without that the data is, essentially, meaningless. One company that knows a great deal about providing such communication services is AT&T, and it is moving forcefully into this market, offering utilities a trusted provider to manage the backbone networks that will make the smart grid a reality.

AT&T already has teamed up with Itron, SmartSynch, Cooper Power Systems and Silver Spring Networks to provide a suite of solutions for utilities looking to move forward with their smart grid installation plans. In this effort, AT&T is drawing on its industry-leading role in enabling highly secure 3G wireless communications to simplify the digital transition for the electric utility industry. With its crucial behind-the-scenes communications needs taken care of, the industry will be better positioned to complete the smart grid rollout.

The smart grid is often mistakenly thought of solely in terms of meter solutions. However, the smart grid encompasses the entire grid—it must be used to control and manage the grid, to communicate with customers about their usage, and to improve the utility’s environmental footprint. While the smart grid is starting with meter reads and outage information, it will soon progress to a two-way, interactive real-time relationship with an increasing amount of data to transmit and manage. The management, processing and storage requirements will create opportunities for AT&T to assist energy companies in meeting these goals. Toward this end, all of AT&T’s traditional products and services—highly secure communications over wireless and wired networks, data storage, hosting and network management—are ready to help meet this demand for secure communications and efficient data management.