The US electrical grid is in dire need of upgrading, but as is the case with infrastructure in general, the process is slow. Beyond the debate over energy sources for generating power, there is also a strong debate about the development of the next-generation electrical transmission and distribution (T&D) network.

In this chapter, we analyze the US market for electric T&D equipment. Electric energy in the current macro setting is discussed first, followed by a brief look at electricity supply and demand. Key regulations and technical developments that pose both restraints and opportunities are profiled. This is followed by a discussion of T&D equipment supply in terms of major product lines and T&D equipment demand by major end-use sectors. Then a specific sector, the commercial market, is highlighted. We conclude with an analysis of industry structure, marketing, collaboration, and merger activities.

Electric Power and the Macro Environment

Modern economies run on electricity; about one-third of the world energy is used for electric power. In the United States, electricity is integral and indispensable for homes, factories, and all types of commercial establishments. Any interruption in the steady supply of electric power is unwanted and can result in much economic
loss. The nation’s electric grid is a complex network of generation plants, transmission lines, and distribution systems. The North American grid consists of three major networks (Eastern, Western, and Texas) with 200,000 miles of high voltage transmission lines (110 kv to 765 kv) and million miles of distribution lines.

The federal government is currently pushing policies to upgrade the nation’s aging electrical network. In mid-June 2011, Secretary of Energy Steven Chu called for a speed-up in the development of the next-generation electrical network (Vastag 2011). This so-called smart grid would deliver power more efficiently, coordinate traditional and renewable sources, reduce consumption, and alleviate the number and length of outages. T&D equipment should then be able to respond immediately to demand, yet maintain an instant response system to connectivity and other operating variables. At present, the nation’s current electric grid is so creaky, according to Chu, that “Edison would feel at home with most of today’s power system.” Per US Department of Energy (DoE) figures, there were 349 blackouts in 2005–2009 vs. 149 in 2000–2004.

According to the chapter just cited, the new policies immediately drew skepticism, in part because the Electric Power Research Institute (EPRI), an independent institute funded by the electric utility industry, estimates the cost of implementation to be in the $338 to $476 billion range. Nonetheless, the federal government is determined to push the electric power companies to invest in new technologies, provide loans to upgrade the transmission lines in rural areas, and fund “smart grid” R&D activities from a DoE research hub. According to Dr. Chu, the technology underpinning the current US electrical grid lags behind that of other countries, including China and Ireland. Their systems have more efficient high-voltage transmission lines, up-to-date distribution equipment, and better integration of power generation from traditional and renewable sources.

If the administration’s policies are implemented, they would provide a major boost to T&D investment. However, the fate of enabling legislation is highly uncertain.

The supply and demand situation for electric power T&D equipment is clearly affected by both cyclical and secular macroeconomic variables. The most notable influence was the recent recession and ongoing slow recovery, causing slower spending patterns by households, business, and governments. The overall weakening in the economy has forced business firms to shelve major expansion plans through 2013. A significant share of T&D equipment demand is related to fixed investment activity. Both electric utilities and other industrial-commercial users are slowing down their purchases of switchgear, transformers, and other types of equipment.

**Electric Power (Electricity) Supply and Demand**

Before electric power is transmitted and distributed, it must be generated at conventional dedicated power plants, cogeneration facilities, or at such natural/renewable facilities as hydro dams, geothermal heat sources, solar farms, or wind turbines. The generation of electricity is forecast to climb at less than 1 percent per year to 4.3 trillion kilowatt-hours in 2013. This pace reflects the growing demand for electricity services being offset by efficiency gains from new appliance standards