Smart green power

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(Smart Grid),???

Smart grid technology is enabling the effective management and distribution of renewable energy sources such as solar, wind, and hydrogen. The smart grid connects a variety of distributed energy resource assets to the power grid. By leveraging the Internet of Things (IoT) to collect data on the smart grid, utilities are able to quickly detect and resolve service issues through continuous self-assessments. Because utilities no longer have to depend on customers to report outages, this self-healing capability is vital component of the smart grid.

The relationship between the smart grid and renewable energy revolves around gathering data. For example, wind farms use mechanical gears that require each link to support multiple sensors. Each sensor is able to note current climate and environmental conditions. This information is then quickly sent though the grid to alert the utility of any issues, which improves both the quality of service and safety.

"You"ve got this story of this invisible, dangerous commodity that travels at the speed of light that we call electricity and for the last hundred-plus years most people could interact with it in only the most rudimentary ways," says Mark Feasel, vice president of smart grid for Schneider Electric. Companies are now deploying much more advanced sensing devices. According to Feasel, some devices can continually capture information on electricity up to 60,000 times per second.

Semiconductor materials, such as silicon, are supporting the creation of green energy with smart grid technology. Due to their ability to hold millions of minuscule transistors, these materials have enabled IoT advancement. In turn, this advancement has allowed the smart grid to link up devices throughout the system, which ensures that the supply of energy is equal to the demand. It also keeps the current evenly distributed.

Smart grids equipped with parts made from semiconductor material reduce the usage of electricity. For example, electric vehicles can charge at night-- a time when offices and homes are not typically using much electricity. Lights switches and furnaces can also automatically power on and off. In this way, energy usage becomes “smart” by not using more than what is needed.

As smart grid technology becomes more promising, both local and federal governments are exploring potential grid improvements.

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By 2037, Thailand wants a third of its energy to be generated by renewable energy sources. This means that Thailand’s grid will need to be modernized to handle the varying levels of energy provided by renewable sources. Any modernization plans will also need to take the country’s growing demand for electric vehicles (EVs), which is predicted to grow in coming years.

"When we have more renewable energy, the grid will become more difficult to manage, and then we will need to give them more flexibility with the digital to make it smarter," says Dr. Surat Tanterdtid, Chief of Enterprise Architecture of the Electricity Generating Authority of Thailand. Smart grid technology can help monitor and predict the supply of renewable energy into Thailand’s grid. This may allow the country to anticipate power outages and prepare accordingly.

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