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Indian economy is poised to grow at a significantly high rate. This economic growth will also mean high demand for electric energy. Major portion of electricity demand will be met through coal-based thermal station. While meeting the growing demand of electricity, it is necessary to minimize the impact on environment. This implies that we need to increase the contribution of clean renewable energy and increase the efficiencies on supply side as well as demand side. Supply side efficiency (efficiency in generation) as well as demand side efficiency (efficiency in consumption) will play a significant role in managing the energy needs in sustainable way. High commercial and technical losses are one of the big challenges that can be met through smart meters and advanced metering infrastructure. MW-scale renewable generation by centralized wind and solar farms will be required to reduce the cost of generation, however, variability of generation due to unpredictable nature of this type of generation would have challenges in managing the grid and smart solutions will be needed. Rural areas where electricity grid has not reached can be served by small size and distributed generation, along with microgrids for distribution. Reliability and quality of power supply can be maintained through self monitoring, self healing grids using smart controllers. Various engineering applications, technologies and management practices are being developed in the Smart Grid domain that will enable meeting the electricity demand with minimum environment impact, thereby, acting as enabler to country's economy.