History of Fossil Fuels

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The U.S. electric grid is aging and hard-pressed. As the population increases, the electric supply demand increases in the United States despite moving towards renewable energy. The solar plants still need electricity backup for a continued supply. The United States needs more power plants for more energy production in order to meet the demand, however, the grid system continues to fail. The power delivery is hampered due to the barriers caused by old transmission lines and huge steel towers. The cost of service interruptions is too expensive. Moreover, there is a huge investment gap (Halsey III, 2012).

Smart grid is an electrical network for monitoring and managing the delivery of electricity from the production sources to the end consumer. It uses digital and other innovative technology such as information and communication technology. It is designed to address issues like energy wastage due to old electric grid systems, poor transport monitoring, and distribution sources (Shomali & Pinkse, 2016). This new system will introduce the improved energy infrastructures and allow the producers and consumers to control the energy demand and bring changes in network management.

Some of the challenges associated with the implementation of the smart grid are changing the supply network, supplies and the regulation plan. The regulators and the consumers will have to adapt to the new system which might not be quite feasible or quick. There are also issues related to the security and privacy of energy consumption on the user end (Xiao, 2013). Another challenge that smart grid faces is the changing pattern of the energy demand. As there have been changes in the energy costs and environmental concerns, consumers have been trying to shift to renewable energy. These inconsistencies are a big threat for the execution of smart grid systems (Feller, 2018).

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