



# Smart Grid System in India

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**Abstract.** *The smart grid system is very useful in our India. Over electrical supply system is upgrade when use this technology. In this work introduce to smart grid system in India. This is new generation grid system for save our power energy. It reduces the black out when the power consuming higher than the produce of the electricity. The smart grid system also balances the generate power and consume power. The numbers of sensors for collect the data and produce electricity according to its requirement so we can save larger amount of electricity. It also shows the real time price of electricity so we can use our heavy electric equipment when the electric price low. It's also found the default in electric supply system with the help of sensors so we can easily solve the electricity default. The smart metering also collects the real time-consuming data for the consumer. It also helps for billing the electricity bill with the help of sensors. When the smart gride system install all our in the India then the power supply system easy to be handle. The smart gride system collect the data easily for any district.*

**Keywords:** *Smart Grid System, Electricity Supply System, Black-Out, Collect Data, Smart Meter, Sensors.*

## I. INTRODUCTION

The smart grid system is new technology system. As we know that communication system provided is two way and same for the communication data. The information relation between the producer and consumer. They collect the 24x7 continues data of the consumer through the help of sensors so they can run our power industry according to his requirement. They also save large amount of wastage power by using this system. More benefits are achieved when the compare with this to conventional grid system. The smart metering system can show the real time-consuming data for the consumer. The smart grid management system we can used new technologies and advance smart transformers so we can distribute the electricity and collect the renewable energy electricity. The weather and temperature sensors know the actual temperature and humidity of the area or city so the power produce according to the requirement. When the consumers know the actual price of the electricity with the help of smart grid system or smart meter it is also help to reduce his electric bill.

## II. LITERATURE SURVEY

The smart grid system is like a management system to overcome the losses of electric power and shown the real time scale of consuming the electricity. The main function of this system is to collect the data of consumer for the producer so the producer can easily produce the electricity in his plant according to requirement. For reducing the wastage of power this system is beneficial. In the conventional grid system, they cannot know the exact power consuming by the consumer so when the consumers consume the larger amount of electricity than the electricity producer cannot full fill the requirement so the chance of black out is higher or shut down the power plant. In the case of smart grid system, we know the actual requirement of power consume with the help of sensors so the power plants easily produced power for the consumers so the chance of black out lower and the power save larger so it saves our cost. The smart grid system also stored the renewable energy (electricity) distribute this electricity to the households. This renewable energy also reduces the Budden of the conventional power generation system.

## III. RENEWABLE ENERGY IN SMART GRID SYSTEM

There are the many types of renewable energies for produced or generate the electricity like solar energy power, wind energy and many more. In the smart grid system, all the renewable energy collects directly from the energy source and distribute this electricity to the household because this smart grid system easily to handle it over the conventional grid system. In the smart grid system, the new technology smart transformer uses and these transformers collect the renewable energy. This is also help to reduce the load of our thermal plants and we can easily use large amount of electricity without any blackout. It's also reduced the cost of electricity. If any consumer produces the electricity with the help of solar power, they can direct sell this electricity to the power plants without using any batteries these energies direct collect the power plants through the wires and we can easily check the real data in the smart meter.

## IV. THE SUPPORT OF CONSUMER

The customers or consumers can-not be aware of the new technologies like smart grid system so it's very important to aware the consumers for the new technologies so they can use this system for save his cost. The customer support is much necessary for implementation of this technology across the India. If the consumer knows the actual price of peak load, then they can use our heavy electric equipment when the price low so they also produced the electricity with the help of solar power and save his money but the consumer should be aware for the smart grid system.

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## V. CURRENT STATUS OF SMART GRID SYSTEM IN INDIA

The Smart Grid Mission was approved by the Indian Ministry of Power on 27 March 2015. Some of the projects have been approved under the Smart Grid Mission are Sub Division 5 under CED Chandigarh, Complete City excluding sub division 5 under CED Chandigarh, Ranchi city under JBVNL Jharkhand, 6 Town under JVVNL Rajasthan.

## VI. SOLUTION

The process or implementation of this new technologies is tough so the time process for this system takes long time because we change all the equipment's like transformers, meters and lines. The main requirements for smart grid system are mass technologic and financial investment. The implementation of smart grid system in India is super expensive. The smart grid system should be implementation in a phased manner. To introduce this technology among the people government makes new policies.

## VII. CONCLUSION

As the daily need of the electricity is continuously increasing and to satisfy that need the smart grid system plays an important role. This grid system is implemented through a continues process. While the implementation of the grid system there can be high chance of occurring problems and number of challenges also get increase. The customer helps also need for easily implementation of this grid system. In this work some issue and challenges for the implementation of the smart grid system are discussed with some solution.

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