

Smart Grid

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1 Topic Summary

The "smart grid" is the next generation of energy systems, which have been updated with communications technology and connectivity. The growing trend today is for municipalities to move toward smart grid technologies for a range of reasons. Advances in technology have made wireless, both cellular and RF (radio frequency), affordable and easy to use in smart grid applications.

Smart grid allows a power company to assess system health in significantly more detail than was previously possible. With smart meters the power company can discover real time power demands with a granularity and accuracy that is simply not possible with older technology. This can allow them to better predict and respond to sudden increases in demand, which can help to prevent blackouts. Smart Grid will also allow for automatic rerouting when equipment fails or outages occur.

IoT sensors in streetlights can also adjust off and on timing and brightness according to real time conditions. Smart meters enable demand response which lets home and business owners see real time pricing information so that they can adjust their energy usage. Most of all, smart meters will benefit electric car owners.

By 2018 the United States had enough solar panels installed to power 12.3 million American homes. Since 2013, solar energy has always been either the first or second most added energy source in the US. Cities are becoming increasingly aware of how important it is to generate electricity from renewable sources.

Traditional energy grids are designed to transmit electricity from a large, centralized power station to homes and businesses. A smart grid is designed to accept power from renewable resources such as solar panels and windmills. It can mitigate the effects of a disaster such as a terrorist attack or natural disaster on a power station.

Wireless technology will replace thousands of miles of cable that would have been needed to advance the smart grid. Smart grid is resilient, efficient and green which is good for the consumer, the utility company and the environment. Businesses can get real time billing information while utility companies can better meet the needs of their customers.

2 Key Ideas from the Author

- The technologies that make today's IoT-enabled energy grid "smart" include wireless devices such as sensors, radio modules, gateways and routers.
- As well, advances in technology have made wireless, both cellular and RF (radio frequency), affordable and easy to use in smart grid applications.
- The businesses, services and private citizens that require electricity from the grid, and therefore stand to benefit when municipalities adopt smart grid technologies, span every resident, city service and critical infrastructure installation.
- Smart city applications are vast, and include everything from smart city lighting, energy management and intelligent traffic management to water treatment and wastewater management.
- Top Three Benefits of Smart Grid
 - Smart Grid Enables Renewable Energy Generation
 - Better Billing, Better Predictions
 - Smart Grid is More Resilient
- Smart grid is resilient, efficient and green which is good for the consumer, the utility company and the environment.

3 My views

- Smart grids are one of those technological advancements that have improved the way of living and have enabled a easy and effective way to monitor and control the power and communications between places.
- In my opinion smart grids play an important role in the building of smart cities which are seen as the next stage of civilisation of mankind.
- Smart grids can also prove to be a solution for the problem of depletion of resources that are used to produce more fuel and for more power generation.
- The use of smart grids could even be feasible for the people using them as they can predict their usage and cut down costs by planning ahead.

4 Agreements, Pitfalls and Fallacies

- **Agreements :** The overall writing of the author is the perfect depiction of the usefulness of smart grids and their effectiveness in controlling the usage of power and predicting the usage. The author says about the

benefits of the smart grids and also the smart city applications connected with it. Gives a vivid idea about the importance of implementing smart grids to improve the way of usage of power and the way of communications.

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