California Leads the Nation in Modernizing its Electric Grid

The California Public Utilities Commission (CPUC) has embarked on a momentous path toward modernizing the state's electric grid from one based on industrial age technology to one based on the technology of the information age: a Smart Grid.

California Benefits From a Smart Grid

California's aging electric grid has been operating in much the same way for over 100 years. The grid must now be modernized to take advantage of new technologies and meet new supply resources and increasing consumer demands.

Smart Grid means:

- **Lower electricity bills. Fewer new power plants.**
- **Shorter and less frequent power outages. Improved worker and public safety.**
- **Cleaner energy supplies. Fewer transmission lines crisscrossing the California landscape.**

The existing grid is increasingly costly to maintain and is not able to meet the future demands that will be placed upon it. In addition, the design of the grid does not take into effect the technological advances of the past century.

Creating a smarter grid will result in a safer, more reliable, efficient, affordable, and interoperable system.

"Smart Grid technology will result in customer benefits on many fronts. More efficient operations reduce overall electricity costs, fewer outages improve customer service, and improved technology increases savings opportunities. This is an important effort on behalf of California consumers."
– Commissioner Nancy E. Ryan

Among the many benefits consumers will see from a Smart Grid is the availability of more information and tools to manage their energy usage. Consumers will have greater control over their utility bills through the availability of real-time information about rates and usage, which will allow customers to decide when and

how much energy to use. For example, in a hot summer month a consumer's utility bill may be more than $800. In the near future, by installing an in-home display device a customer could monitor their electricity usage and costs in real-time (similar to the price and quantity displays on a gas pump), allowing them to adjust their usage instantaneously in response to changes in prices or signals from their utility by delaying the use of a high-energy appliance or shutting them off. This could be done manually or automatically by pre-programming the device or appliance. Customers will decide when and how to use their electricity before they get a bill that is beyond their monthly budget.

California's Path Toward a Smart Grid

Transforming the grid is similar to building the interstate highway system. As technology advances, innovation and new products will allow customers to take even greater control over their usage and lower their bills. This will also allow for greater and more efficient use of resources, reducing lost electricity due to transmission over long distances, increasing the localized use of new types of generation and electricity storage, and allowing for a smooth transition to electric vehicles.

The CPUC has set out a framework and an overall vision for a Smart Grid in California that requires the state's investor-owned utilities to begin the transformation of the electric grid into a safer, more reliable, efficient, affordable, and interoperable system. This deliberate and strategic planning for a Smart Grid will ensure that California utility customers realize the tremendous benefits of a Smart Grid.

The CPUC requires that utilities:

- **Develop a Smart Grid vision and a detailed implementation roadmap.**
- **Clearly identify costs and benefits.**
- **Demonstrate how customers will be integrated and informed of their new independence and choices.**
- **Focus on capturing efficiency, reliability, and safety benefits for consumers.**