FORECASTING THE FUTURE OF ELECTRICITY

Highlights: What We Need To Power the Future

Aging Population

Americans are living longer and the percentage of elderly in the population is projected to grow.

Consumers Will Want: Medical equipment, including monitoring and diagnostic equipment that allows patients to stay in their homes rather than hospitals; life support equipment; medically-assistive technologies.

The Power System Must Provide: Perfectly reliable, digital-quality power that is also portable.

Natural Resources

Globalization and the accompanying travel and transport sectors will lead to intense competition for oil and skyrocketing prices.

Consumers Will Want: Plug-in fuel cell vehicles; advanced technologies to reduce transportation needs, such as "tele-emersion" to create a virtual presence at work.

The Power System Must Provide: Resources and technology to fuel light rail; capacity to fuel plug-in hybrid electric vehicles; perfectly reliable power to fuel computer equipment for new-generation telecommuters.

Climate Change

The growing incidence of extreme weather events such as major hurricanes will lead to consensus on the need to reduce emissions.

Consumers Will Want: Smart illumination and HVAC systems; smart, high-efficiency electronics and appliances.

The Power System Must Provide: Consumer management of electric services; efficiency throughout the system from generation to end use; greater use of combined heat and power technology.

Security

Terrorism will remain a fact of everyday life. The growing global gap between rich and poor will lead to social unrest and related personal security concerns.

Consumers Will Want: Advanced, reliable personal and home security systems; protection from effects of terrorist attacks; independence from centralized bulk power system.

The Power System Must Provide: A smart grid with the ability to "island" or wall-off parts of the system that have been disabled; absolute power reliability; distributed back-up power; undergrounding; cyber security; direct current microgrids; combined heat and power.

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