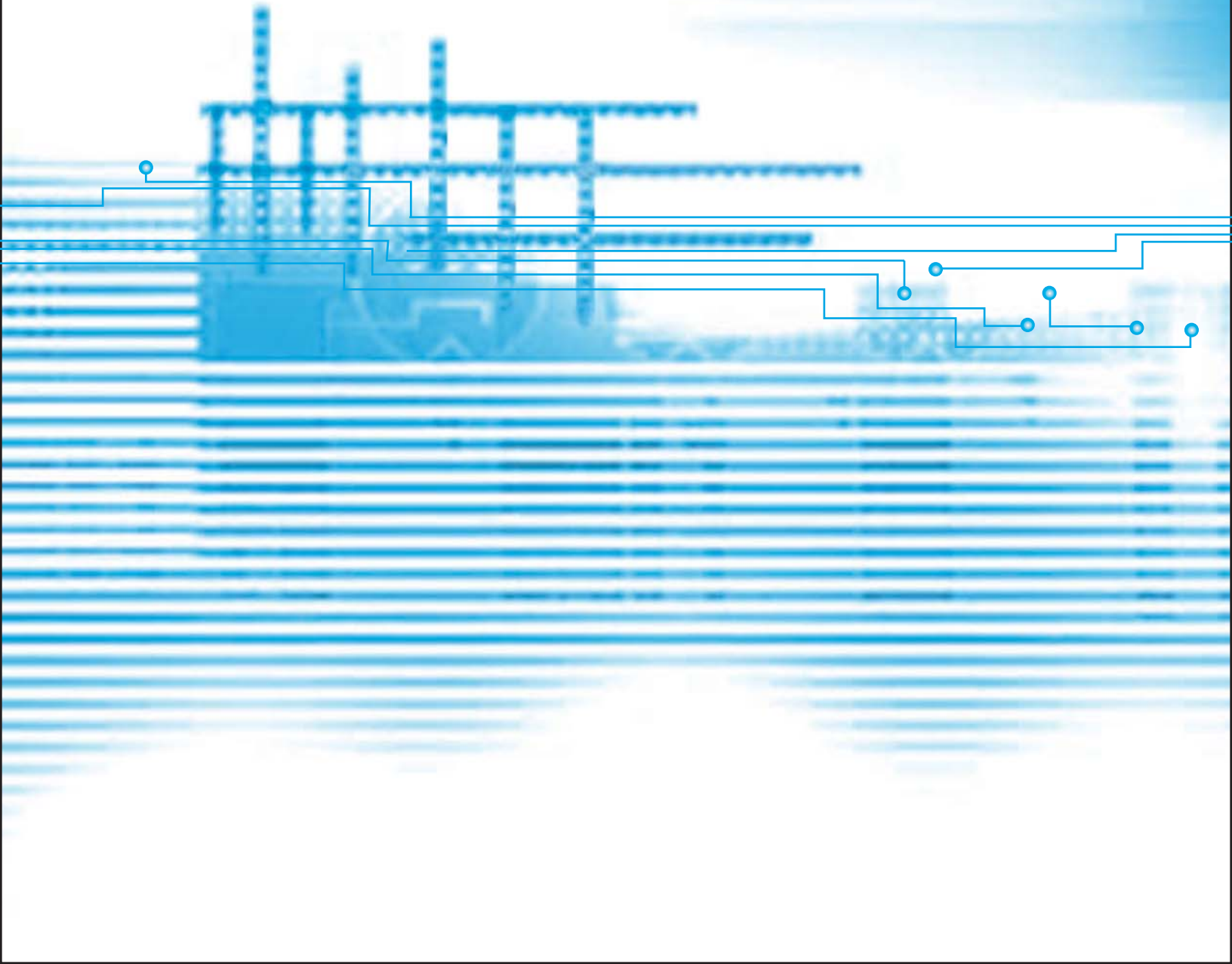


IntelliGridSM

Smart Power for the 21st Century



IntelliGrid:

Smart Power for the 21st Century

Opening new possibilities in reliability, prosperity and customer services

In the 20th Century, electricity became the prime mover of modern society. The growth and interconnection of regional utility systems enabled technological progress, economic growth, and social transformation. Today, the power grid is working harder than ever to meet society's growing appetite for reliable, affordable electricity. Yet improvements to the grid have not kept up with customer needs or structural changes in wholesale power markets. Recent blackouts provide stark reminders of our dependence on an aging power infrastructure.

The Electric Power Research Institute IntelliGrid initiative is creating the vision and the technical foundation for a "smart grid" that will support the 21st Century economy with tremendous gains in reliability, capacity, and advanced customer services.

IntelliGrid Vision

The IntelliGrid vision links electricity with communications and computer control to create a highly automated, responsive and resilient power delivery system. The intelligent, self-healing grid will continuously send, receive, and process data on system conditions, component health and power flows, as well as pass information among intelligent electronic devices, generators, system operators, marketers, and consumers.

- **Reliability:** Imagine no more blackouts. IntelliGrid will be self-healing and adaptive, automatically re-routing power flows around trouble spots.
- **Control:** Digital switching will enable precise control of power flows, eliminating congestion, loop flows and bottlenecks that impede long-distance wholesale transactions.
- **Advanced Customer Services:** Two-way customer communications enables real-time pricing, net metering, demand response, premium service, and more.

A Coherent Approach to Technology Integration

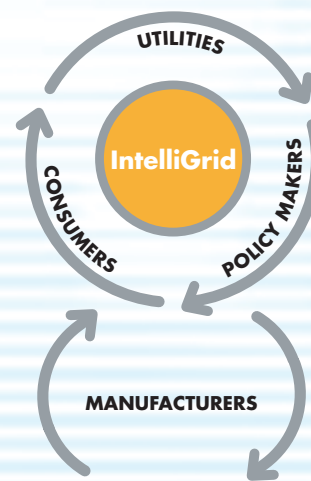
Many of the technologies required to modernize the power grid are available now. The challenge is integrating them so they will meet evolving customer needs and be compatible with the existing system as well as with advanced technologies arriving in the future.

To meet this challenge, the IntelliGrid initiative is providing a coherent framework of guidelines and standards for the infusion of technologies that will make the IntelliGrid vision a reality. The standards-based framework offers several key benefits.

- Ensures equipment interoperability: manufacturers will design and build devices that are "plug and play" compatible with other grid components, now and in the future as utilities' needs evolve.
- Prevents reliance on costly proprietary equipment that can't be integrated effectively, and run the risk of obsolescence.
- Allows use of technologies from multiple suppliers, ensuring availability.
- Stimulates competition among suppliers, driving quality up and prices down.
- Spurs innovation to create new and better products.

Planned Improvement, Not Patchwork Solutions

Investment in a new power delivery infrastructure will be significant. By following a coherent, standards-based approach toward a common vision, utilities will maximize return on investment and bring dividends well into the future. In contrast, patchwork implementations of incompatible technologies will lead to near-term replacement and limited performance gains at greater cost.



Each stakeholder has a critical role




The Electric Power Research Institute (EPRI)

The Electric Power Research Institute (EPRI), with major locations in Palo Alto, California, and Charlotte, North Carolina, was established in 1973 as an independent, nonprofit center for public interest energy and environmental research. EPRI brings together member organizations, the Institute's scientists and engineers, and other leading experts to work collaboratively on solutions to the challenges of electric power. These solutions span nearly every area of power generation, delivery, and use, including health, safety, and environment. EPRI's members represent over 90% of the electricity generated in the United States. International participation represents nearly 15% of EPRI's total R&D program.

Together...Shaping the Future of Electricity

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