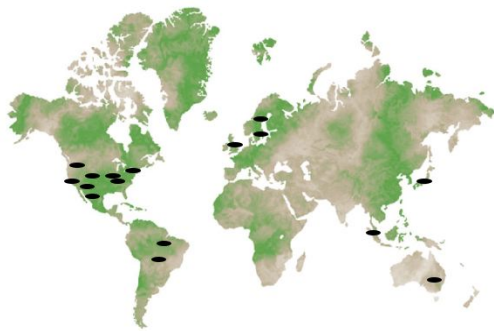


# FACTS Users Group Provides a Forum for Information Exchange to Support Successful Application, Operation and Continued Development

## Success Story

### FACTS Installations Worldwide



EPRI's FACTS Users Group unites utilities, manufacturers and researchers from around the world to share information about FACTS technology and applications.

“The Users Group offers the FACTS community a forum to share information, experiences and ideas about technology developments and applications as well as to forge partnerships for research and development.”

—Shalom Zelingher, NYPA  
Chief Technology Development Officer, NYPA

“Every Users Group meeting has been educational, productive, and an excellent opportunity to learn about other FACTS installations and to share our experience operating AEP's FACTS fleet, which is the largest in the world.”

—Ben Mehraban, AEP  
Principal Engineer, Transmission

**The Challenge** EPRI's FACTS (Flexible AC Transmission System) program is a large, ongoing collaboration to develop and apply advanced technology to improve the performance and reliability of the transmission system. FACTS technology encompasses a family of solid-state power electronic devices that permit more electricity to be carried on existing lines and enhance system response to counteract transient disturbances almost instantaneously. As such, FACTS offers a technology-based solution to grid congestion and bottlenecks that impede the efficient movement of power, reducing the grid's reliability and its ability to support wholesale power transactions.

Spreading from five EPRI-sponsored installations in the United States, FACTS devices are now deployed in power systems worldwide. Operating experience from these installations, coupled with advances in power electronics, help drive the continued development of FACTS technology. A diverse international community of researchers, equipment manufacturers and utility transmission engineers draws from these experiences and technical advances to improve the performance and reduce the costs of FACTS technology—and ultimately to create a more capable power delivery system of the future.

A major challenge in the collaboration has been the difficulty of sharing information among the geographically dispersed members of the FACTS community. Aty Edris, EPRI's FACTS technology manager, saw the need for a mechanism to bring together representatives of electric utilities, equipment manufacturers, and academic researchers to exchange information, experience and insights, and stay abreast of recent technology developments.

**The Solution** To facilitate productive interaction and information sharing, Dr. Edris formed the FACTS Users Group, which is now in its eighth year of promoting open communication and collaboration in the FACTS community. Annual users group meetings include a series of presentations on FACTS operating and applications experience from representatives of utilities with FACTS installations, as well as presentations from manufacturers on new technologies with the potential for improving performance. Meetings also typically include a site visit to an in-service FACTS installation.

The eighth annual FACTS Users Group meeting was held in Stamford, Connecticut, in August 2005, and focused on power electronics-based transmission controllers in five well-attended sessions. The meeting included a site tour of the +/- 150 Mvar Static Synchronous Compensation (STATCOM) installed at the NorthEast Utilities Glenbrook substation. A series of presentations covered applications and operating experience with in-service FACTS controllers, technology developments, and voltage-sourced converter technology. The meeting also included a panel session for manufacturers including Mitsubishi, ABB, AREVA, Siemens and Silicon Power Corp. The meeting was well-attended and well-received. Virtually all participants who provided feedback gave top marks when asked to rank their overall satisfaction with the meeting and with their ability to contribute to the proceedings.

**Benefits** By promoting productive information exchange among utilities, manufacturers, and researchers, the FACTS Users Group supports the ongoing evolution of FACTS technology. The development of lower cost, more reliable FACTS controllers will lead to more installations, which in turn improve transmission system performance. As an independent, objective collaborative R&D organization, EPRI is uniquely suited to its role as user group facilitator.

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experience, as well as forge partnerships for research and development,” says NYPA’s Shalom Zelingher.

Says AEP’s Ben Mehraban, “Every FACTS Users Group meeting has been educational, productive, and an excellent opportunity to learn about other FACTS installations and to share our experience operating AEP’s FACTS fleet, which is the largest in the world.”

“Perhaps the most valuable aspect of the users group is the sharing of operating experiences, problems and solutions,” says TVA’s Jim Cutshall. “This interaction with other users has directly enabled TVA to improve the reliability of our STATCOM installation. At one meeting, for example, I discussed with Mr. Ben Mehraban of AEP a problem we were experiencing with pump seal failures and resulting coolant losses. Ben invited us to visit AEP’s Unified Power Flow Controller in Inez, Kentucky. Even though their cooling system was designed and built by a different vendor, a comparison of the two systems proved very beneficial. AEP had a much better understanding of the coolant’s quality and graciously shared their maintenance practices with us. The knowledge gained from that site visit, coupled with the expertise of TVA’s own mechanical expert, Paul Loiseau, allowed us to make major modifications to our STATCOM’s cooling system. The low-tech cooling system is no longer the Achilles heel of our STATCOM.”

“As the users group facilitator, EPRI provides an open atmosphere of collaboration,” says TVA’s Michael Ingram. “Interaction with equipment manufacturers is an important feature of the meetings. We alert them to our problems and share our plans with them—and they come to learn, not to sell, which contributes to a productive exchange of information. Without EPRI to establish the atmosphere, we would fall back on our competitive positions.”

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