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## Exhibitors—FERC/DOE Demand Response Conference

### **ALSTOM'S ENERGY MANAGEMENT AND MARKETS (EMM)**

Business unit, is based in Bellevue, Washington USA. With the onset of industry restructuring, the company has provided leadership in addressing the IT needs of energy market operators and market participants. The company is taking the initiative to address current industry problems by providing the systems and software solutions that enable energy companies to utilize distributed energy resources in responding to fluctuating electricity prices.

ALSTOM EMM is at the forefront of building power management systems and developing software for competitive electric utility markets all over the planet. With market-defining energy technology projects in North America at PJM, ISO New England, and ERCOT - as well as systems in New Zealand, India, Korea, France, Iceland, Netherlands and others - ALSTOM's EMM Business is poised with the experience, expertise, and resources to continue as the global energy networks, information business solutions leader.

[www.esca.com](http://www.esca.com)

ALSTOM is the global specialist in energy and transport infrastructure. The Company serves the energy market through its activities in power generation, power transmission and distribution, and power conversion and the transport market through its activities in rail and marine. ALSTOM has annual sales in excess of \$20 billion and employs 120,000 people in over 70 countries. The Company is listed on the Paris, London and New York stock exchanges (NYSE: ALS). In the US, ALSTOM employs more than 7,000 people and has annual sales exceeding \$4 billion.

[www.alstom.com](http://www.alstom.com)



**THE AMERICAN GAS COOLING CENTER** and its 140 manufacturer, utility and other organization members are dedicated to developing sustainable and cost-effective natural gas cooling, humidity control and refrigeration markets. Their activities include technology commercialization support, education and outreach to the buildings community, and market advocacy at the federal and state level. Thermally activated cooling technologies are key to creating highly efficient building energy systems that use the "waste" heat from on-site generation (or other sources) to provide air conditioning and dehumidification.



**APOGEE INTERACTIVE INC.** is a full-service provider of consulting and on-line technology solutions to the energy industry. Through a unique blending of industry veterans, subject matter experts, advanced programmers, and electronic communications artists, Apogee develops cost-effective Internet and desktop tools for utility load management, marketing, communications, deregulation and training challenges. Apogee's products and services suite includes: Internet-based load management platforms and data analysis; web-based employee and customer training courses; energy-efficiency web content; website development; and other electronic, interactive business solutions.

In 1999, Apogee created and launched The Demand Exchange®, one of the very first voluntary peak load reduction programs in the industry. It is now the largest demand response load aggregation system and Internet trading platform in the US, with over 1,000 customers and 3,000 megawatts represented. Apogee also developed and operates the utility industry's leading portal for web-based energy-related courses through its training division "Study-Center.com."

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Apogee incorporated in 1995 and pioneered multi-media training and deregulation simulations within the load management, energy efficiency, marketing and sales departments of utilities across the country. Its major utility clients include Entergy, Southern Company, Bonneville Power Administration, FPL, Excel Energy and others, plus industry associations such as the Electric Power Research Institute, Edison Electric Institute, National Rural Electric Cooperative Association and American Public Power Association.



**BLUESPAN COMMUNICATIONS SOLUTIONS** BlueSpan's B-Net™ is a potent combination of advanced metering, patent-pending wireless communications and intelligent data distribution management.

- ◆ Robust Metering – BlueSpan's polyphase, single-phase and submetering products offer superior flexibility, scalability and control. A universal, meter-agnostic "under the glass" wireless interface captures and relays energy usage information and enable direct, customer-side power control.
- ◆ Patent-pending Multicarrier Wireless Networks – BlueSpan's unique combination of communications over Motient, Mobitex and other public networks allows, quick, reliable and versatile integration with a utility's entire customer base.
- ◆ Bi-directional Data Distribution and System Control – BlueSpan's unique bi-directional product design enables applications for control and adjustment of customer-side devices, with rapid feedback capability and support for thousands of end users.

### *BlueSpan C&I Applications*

BlueSpan's polyphase and branch monitoring systems enable a range of key applications for commercial and industrial customers, including demand side management, interactive energy management, usage profiling, submetering and real-time pricing.



**CANNON TECHNOLOGIES** presents the YUKON Advanced Energy Services Platform, an end-to-end system offering a balanced portfolio of traditional Direct Control, C&I Energy Services, Distribution Automation, Substation Monitoring & Intelligent Notification, Feeder

Capacitor Control, Customer-owned Genset Monitoring & Control, and related hardware including energy management devices, gateways, and communication from a single supplier.

New Product: Cannon has recently teamed with Honeywell to offer the "Express Stat" utility-controlled thermostat. Based on the workhorse Honeywell digital clock-thermostat, energy service providers can curtail demand using pre-defined temperature threshold, compressor cycling, or incremental setback. Uses 900 MHz FLEX™ Paging communication, and the powerful "ExpressCom" broadcast group addressing protocol from Cannon Technologies.

Cannon Technologies is a profitable, privately funded corporation, established in 1987, with nearly 300 utility clients in all sectors of the electric industry.



**COMVERGE TECHNOLOGIES, INC.** Comverge, Inc., The Power in Power Technology™, has more than 500 customers, in 15 countries around the globe.

Comverge's PowerCAMP™ group enables End-to-End Energy Intelligence™ for innovative full-spectrum software solutions. Software modules encompass load Conservation, load Analysis, automated Meter reading, and various real-time/TOU Pricing models.

Comverge's Technologies group integrates hardware/software solutions for direct or voluntary load control programs, remote meter reading, price-responsive programs, time-of-use billing, distributed generation monitoring, theft/outage detection, and other energy management services.

Comverge's Enterprises group establishes new breakout businesses such as own and operated systems, negawatt contracts (i.e., sales of load reduction capacity), joint ventures, acquisitions, and other business alliances, including partnerships with its utility and industrial customers to generate recurring revenue streams. Comverge Enterprises group establishes Comverge as the leading provider of Virtual Peaking Capacity™ in the US---facilitating new electric capacity without permits, environmental or other construction concerns.



**THE DEMAND RESPONSE AND ADVANCED METERING COALITION (DRAM)**

is an ad hoc coalition of public interest groups, technology companies, metering companies, utilities, and other parties. It advocates increased use of advanced metering and communications technology to support demand response programs and to provide energy companies and energy consumers with time-of-

day usage information they can use to efficiently and cost-effectively provide and use energy.

SchlumbergerSema and eMeter serve as Co-Chairs of DRAM. Other members include Siemens, Puget Sound Energy and the Alliance to Save Energy. The Executive Director of DRAM is Dan Delurey and can he can be contacted at 202.489.4010 or dan@wedgemere.com



**ECHELON CORPORATION**, founded in 1989, is the creator of the

LonWorks® platform, the world's most widely used standard for connecting everyday devices such as appliances, thermostats, air conditioners, electric meters, and lighting systems to each other and to the Internet. Echelon's hardware and software products enable manufacturers and integrators to create smart devices and systems that lower cost, increase convenience, improve service, and enhance productivity, quality, and safety. Thousands of companies have developed and installed more than 16 million LonWorks based devices into homes, buildings, factories, trains, and other systems worldwide.

The protocol underlying LonWorks networks and the signaling used by Echelon's power line and free topology transceivers have both been adopted as standards by the American National Standards Institute (ANSI). Echelon is also a founding member of the LonMark® Interoperability Association, an open industry forum of hundreds of leading manufacturers, integrators, and users dedicated to promoting the use of interoperable LonWorks devices. More information is available at <http://www.lonmark.org>. Further information regarding Echelon can be found at <http://www.echelon.com>.



## **EDISON ELECTRIC INSTITUTE**

**EDISON ELECTRIC INSTITUTE (EEI)** is the association of United States shareholder-owned electric companies, international affiliates and industry associates

worldwide. In 2000, our U.S. members served more than 90 percent of the ultimate customers in the shareholder-owned segment of the industry, and nearly 70 percent of all electric utility ultimate customers in the nation. They generated almost 70 percent of the electricity generated by U.S. electric utilities.

Organized in 1933, EEI works closely with its members, representing their interests and advocating equitable policies in legislative and regulatory arenas. In its leadership role, the Institute provides authoritative analysis and critical industry data to its members, Congress, government agencies, the financial community and other influential audiences. EEI provides forums for member company representatives to discuss issues and strategies to advance the industry and to ensure a competitive position in a changing marketplace.

EEI's mission is to ensure members' success in a new competitive environment by:

- ◆ Advocating Public Policy
- ◆ Expanding Market Opportunities
- ◆ Providing Strategic Business Information

For more information on EEI programs and activities, products and services, or membership, visit our web site at [www.eei.org](http://www.eei.org).



## **eMETER**

### *Mission*

eMeter's mission is to ensure (1) that every consumer has access to his or her own detailed, hourly electric usage data so, as an informed buyer, he or she can make the right energy choices; and (2) that electric utilities have access to the data so they can deliver power more efficiently.

### *Vision*

eMeter envisions an electric industry with real-time metering of power and Internet access to every electric socket for all electricity customers. Time-based metering empowers and informs energy users, enabling them to combat the market power of wholesale generators through peak demand response. Automatic demand response through remote control of equipment, thermostats, and appliances makes it simple and easy for customers. The Internet makes possible low-cost, powerful display of data and implementation of equipment, thermostat, and appliance controls.

### *Company Background*

eMeter is a privately-held Silicon Valley-based company. Its principals have been pioneers in electric metering issues for nearly 20 years and previously founded CellNet Data Systems, which was sold to Schlumberger in 2000. eMeter's executives successfully led advanced metering and data communications deployments to over five million electric meters. eMeter's team includes recognized leaders in electric restructuring issues who have testified before commissions, legislatures, and the Commerce Committee of the U.S. House of Representatives.

### *Technology*

eMeter uses public networks and industry standards. It delivers its solution in partnership with utilities and via a consortium of California-based and global companies.



**GAS TECHNOLOGY INSTITUTE (GTI)** is the nation's premier, industry-led natural gas research and development organization. GTI is dedicated to meeting the nation's current and future energy and environmental challenges by developing solutions for consumers and industry. GTI works with its customers to find, produce, move, store and use natural gas.

Major customers are gas-industry companies and government agencies with interests in energy and the environment. GTI: performs contract research, development and demonstration projects (in the laboratory or the field) plans and manages technology development programs for the gas industry and other clients provides technical services related to gas exploration and production offers education and training on technical and business topics related to natural gas commercializes new, energy-related technology through a variety of business arrangements.

GTI was created in April 2000, by the combination of Gas Research Institute (GRI) and the Institute of Gas Technology (IGT), which were the major research and technology development organizations for the U.S. natural gas industry and its customers since 1941.

GTI conducts business in the following Divisions:

Research and Deployment

Exploration and Production (E&P) Services

Education.

The Research and Deployment Division in turn consists of five centers: Exploration, Production and Gas Processing; Gas Operations; Energy Utilization; Energy Systems; and Environmental Science and Technology.

GTI is located in the Chicago suburb of Des Plaines, Illinois. Its headquarters building contains modern laboratory and research facilities, as well as training facilities and an extensive library. Full-scale energy systems and equipment can be evaluated on GTI's Emerging Energy Technology Campus.

Headquarters: 1700 S. Mount Prospect Road, Des Plaines, IL 60018. Phone 847-768-0500.

Washington Operations Office: 1225 I St., NW, Suite 350, Washington, DC 20005. Phone 202-824-6640.



Honeywell DMC, a subsidiary of Honeywell, is a national leader in the energy and water services industry devoted to helping people and companies manage their energy and water use. Since 1977, Honeywell DMC has delivered savings, improved comfort, and offered technical assistance to over 7,500,000 customers on behalf of more than 100 electric, gas, and water utilities. Recognized for our experience in load management, we provide an effective implementation solution for technology vendors, utilities, and other market allies. With more than 550,000 device installations of all configurations under our belt, we know more of what you can expect than any other service provider, making us the preferred choice for pilot and large volume load management programs.



**INTERNET ENERGY SYSTEMS** has a complete energy command, control solution that offers consumers real-time energy information and real-time control. This unique solution empowers the end user by providing the knowledge necessary to make crucial energy-saving decisions that will ultimately improve their bottom line.



**INVENSYS PLC** is an \$11B global leader in the automation and controls industry. With over 75,000 employees, Invensys operates in all regions of the world through four focused divisions - Software Systems, Automation Systems, Power Systems and Control Systems.

Invensys provides innovative solutions and services to customers, with an increasing focus on software, networks and electronics. Invensys products and services range from sophisticated control systems for automating industrial plants, to electronic devices and controls for homes and offices together with complete power systems to protect the world's telecommunications and information technology networks.

Invensys is also a global leader in utility metering and AMR solutions, an established presence in energy information services, including data collection, aggregation, estimation and validation. Invensys is offering a residential Energy Management service that gives utilities a cost effective way to implement Price Responsive Load Control, manage demand and obtain vital usage data, while giving their customers a tool to easily control their energy consumption. For more information on Invensys plc, please visit [www.invensys.com](http://www.invensys.com).



**ITRON INC.** is a leading technology provider and source of knowledge to the energy and water industry for collecting, analyzing, and applying critical data about electric, gas, and water usage. Itron technology touches more than \$200 billion in energy and water transactions annually. Today, Itron systems are installed at approximately 2,000 utilities in over 45 countries around the world and are being used to collect data from 275 million electric, gas, and water meters. Of those, more than 800 customers use Itron's radio and telephone-based technology to automatically collect information from more than 20 million of those meters. Itron technology is also in use at a number of the newly created wholesale energy markets in the U.S. and Canada to provide critical billing and settlement systems for the power flowing into and out of those deregulating markets



**NOTIFACT CORPORATION** Notifact Corporation, a U.S. company, provides information management products and services enabling corporations with facilities in multiple locations to communicate globally with their mission-critical equipment. The Company's proprietary information routing solution is capable of wireless and wireline control and diagnostic monitoring of remote equipment. The latest generation Notifact system integrates wireless communications and the Internet to provide a practical, low cost monitoring and control solution for a broad range of equipment in multiple industries and across many different market segments. Notifact creates value by enabling real-time, on-line monitoring and control of equipment where performance and reliability is critical. Because of the large market opportunity and the high value provided by Notifact, the Heating, Ventilation, Air-Conditioning and Refrigeration ("HVAC/R") market is the Company's initial target market. However, the Company does have active market development activities in several other large markets including: Emergency/Temporary Power Management, Energy Curtailment, Waste Management, Elevator Monitoring, Process Equipment Alarming, and Storage Tank Monitoring.



**PEAK LOAD MANAGEMENT ALLIANCE (PLMA)** By working in a collaborative environment, the Alliance will develop, demonstrate and evaluate methods for reducing peak electrical demand in times of shortness of supply. This will benefit energy suppliers, energy consumers and society-at-large by reducing price spikes and the likelihood of voltage reductions or blackouts.



**POWERWEB TECHNOLOGIES** provides a turnkey solution that combines both energy software applications and the load control devices to enable consumers to both manage, control and reduce their energy consumption effectively. Powerweb has developed, patented, and deployed this solution that is called the Omni-Link<sup>®</sup> Internet Energy Platform. Through user-friendly software applications accessed through the Internet and load control devices (Internet controlled thermostats, demand response lighting systems, onsite generation control), Omni-Link creates a collaborative e-business solution between Powerweb distributors and their energy consumers. This solution enables consumers to save money by managing and controlling their energy usage. In addition, Powerweb provides the energy industry a cost effective method for monitoring and controlling electricity output in the grid.

The key to Powerweb's success is the union between software energy applications and cost-effective load control devices at a customer's home or facility. The Powerweb technology is the single most powerful savings strategy available on the marketplace. Market research and recent experience show that these product combinations may achieve a 14% average penetration rate in the residential marketplace, a 20% penetration rate in the commercial market and a 49% penetration rate in the industrial marketplace for current distributors. The ability to provide this integrated solution (software applications / load control hardware) to end use consumers sets Powerweb apart from any other company in the marketplace.

In order to sell the Omni-Link products, Powerweb utilizes multiple distribution channels but does not sell product directly to consumers. Powerweb is hired by distributors (companies that offer both products and services to energy consumers) to design, deploy, host, and maintain a private label Internet portal that is accessed by their energy consumers. The Omni-Link portal enables distributors to offer software applications as well as the load control devices.

Powerweb currently has four different types of distributors: utilities, unregulated energy suppliers, product manufacturers, and Omni-Link resale agents. The diversity of distributors allows Omni-Link to be cross-marketed through different product and service channels. This creates a business opportunity for each distributor selling the Omni-Link products and services. Each distributor can sell targeted solutions to end users into the marketplace. For instance, residential consumers have access to software applications that enable them to manage their account, manage energy consumption and control their load (through the use of an Internet based thermostat). In addition, commercial and industrial accounts can consolidate energy information between accounts, analyze efficiency, control load (through an onsite generator or demand response lighting systems), and sell power back into the marketplace during high-price market conditions.

Headquartered in Media, Pennsylvania (outside Philadelphia), Powerweb was originally incorporated in 1989 as a boutique custom information systems design and engineering firm focused on Fortune 100 companies and power utilities. During its early years the Company and its founder, Lou Budike, Jr., gained extensive vertical market experience in energy efficiency systems, energy rate and tariff analysis systems, energy database information systems, and demand side control systems. Today, the Omni-Link Internet Energy Platform and Powerweb's business strategy incorporates this extensive industry knowledge into one centralized "hosted" Internet product offering. In 1996, the Company exclusively focused all of its resources on Omni-Link and the enterprise energy information market. A highly referenceable set of industry-leading customers has validated the Company's approach and is fueling its market momentum.



**RETX** Based in Atlanta, GA, RETX provides Internet-based Demand Response services throughout the United States and Canada. Working with energy providers, utilities, aggregators and their end-use customers, RETX's LMD (Load Management Dispatcher) is an effective and proven system to manage wholesale megawatts to achieve savings, reliability, and conservation. RETX LMD gives energy providers and their end users the tools to react and profit from fluctuations in energy market prices by selling their load reduction back

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to the energy market. Customers have the ability to monitor their energy prices and energy usage thus allowing customers to benefit from RETX LMD by managing their energy consumption, reducing energy costs, and earning incentive payments for energy conservation. This allows the overall energy market to increase the reliability of the power grid and help moderate energy prices.

In addition, RETX offers the award-winning Regional Negawatt Hub (RNH) that enables Independent System Operators (ISO), Regional Transmission Organizations (RTO), and wholesale providers to operate demand response programs. The RNH provides a way for control room operators to use demand response resources for reserves, energy, and transmission congestion through economic price signals and regional demand response views.



**RLW** is a recognized industry leader in providing innovative analytical, engineering and market research consulting for energy companies and organizations. Our consultants are experts in energy auditing and DOE-2 modeling, load research and load monitoring, statistical sample design and analysis, econometrics, energy analysis,

market research, software development, and project management. We have collected detailed information at thousands of residential, commercial and industrial sites, built countless DOE-2 energy simulation models, implemented numerous telephone surveys, and statistically summarized the resulting information into meaningful terms for each project.

Several of our firm's innovations include the Model-Based Statistical Sampling (MBSS™) Software for sample design and analysis, and the Engineering Calibration Approach (ECA™) for understanding the energy use of market segments. In addition, RLW has brought a new dimension to interval load data analysis with Visualize-IT™. This powerful 3-D data visualization tool enables the efficient editing, analysis, presentation and interpretation of interval load data.

RLW Analytics has a simple corporate purpose, encompassed in its mission statement:

“Our mission is to develop and transfer practical solutions to our clients’ challenges, following sound engineering principles, innovative statistical analysis and creative market research.”

RLW has the experience and qualifications needed to provide a wide range of measurement and evaluation consulting services. RLW has extensive project experience and a reputation as one of the leading consultants to the gas and electric industry. We are qualified to provide the consulting services needed to effectively meet the objectives of the proposal, with expertise in the following areas:

- ◆ Load Research Design and Analysis
- ◆ Load Management Engineering and Support Services
- ◆ Market Research and Assessment
- ◆ Energy Efficiency Program Evaluation
- ◆ On-Site Data Collection Including End-Use Metering
- ◆ Efficiency Services Program Development and Implementation
- ◆ Database Design and Management
- ◆ Project Oversight and Management
- ◆ Programming Services
- ◆ Training



**SCHLUMBERGERSEMA** is a leading information technology services company providing consulting, systems integration, managed services and products to the energy and utilities, finance, transport, telecommunications and public sector markets. With 31,500 employees serving customers in 65 countries, SchlumbergerSema provides business strategies, consulting services and technology solutions for energy trading, energy and water delivery management, real-time energy management and customer management.



**SIEMENS POWER TRANSMISSION & DISTRIBUTION, INC.** Siemens Meter Systems Group together with our technology Partner SmartSynch, Inc.

(SSI) is the pioneer of wireless metering solutions for the electric utility industry's critical C&I customer segment. In just a short space of time, we have achieved immediate project success and continue to rapidly deploy new, substantial projects throughout the largest utilities in the U.S.

As part of Siemens Meter Division in Lafayette, Indiana, the Meter Systems Group is part of an innovative company with over a century of metering experience. Siemens not only provides the most advanced metering products and services available today, but is also recognized as the largest supplier of meter systems in the world. Siemens is the global supplier of choice for electric metering and metering systems.

Our strengths as a meter systems provider lie in: Our ability to integrate with “best” partners for best technology offerings – We have the depth of industry knowledge and experience to appropriately evaluate new technology and integrate disparate applications into seamless solutions and systems operations.

Our business understanding and “guaranteed” solution delivery – As a nimble organization within a larger global company, the Meter Systems Group stays abreast of changing technology, regulatory, meter and business conditions and is able to plumb the resources of a world-wide market leader to fully satisfy our customers.

Offering the most cost-effective solution available – As part of our intent to ensure that our solution offerings maximize our customers' business cases, we continuously strive to bring the most cost-effective, most innovative solutions to the marketplace.

Our Innovation – Siemens has over a century of metering innovation history and “intelligent” metering development capabilities and advances.

Our Proven Custom-Fit Metering Solutions – We offer an array of solutions to fit a customer's exact needs--from a “low-cost entry” service bureau trial to a technology “test-drive” lease offering to more complex system-wide installations.

Our Project Management Strength – Siemens assumes the role of overall project manager for each of its proposed C&I metering systems and meets or exceeds all customer requirements.

Our focus on customer satisfaction and metering innovation – We respect the diversity of our customer base and strive to turn unique customer needs into innovations to accommodate the future requirements of the utility industry.

As part of our goal to provide the best metering solution in terms of capabilities, technology and affordability, we partner with key Business and Technology providers. By uniting our global experience and technology with that of our partners, we provide a unique complement of metering solutions that cover all utility needs from the home to the power plant.

As part of the global Siemens organization, the Meter Systems Group draws upon a world of experience and expertise in the application of technology to business and industry. With more than 150 years of experience in providing electrical solutions for the utility marketplace, you can place your confidence in Siemens.



**SMARTSYNCH**, based in Jackson, Miss., is the leading provider of smart metering solutions to the energy and utility industry. Utilizing SmartMeters™, Transaction Management System software, Advanced Communication Networks and the Internet, SmartSynch empowers utilities, energy service providers, and commercial and industrial customers by providing real-time, two-way delivery of critical usage data and power quality and reliability information. SmartSynch's end-to-end solution seamlessly connects energy and utility companies and their C&I power customers with valuable information.



**TABORS CARAMANIS & ASSOCIATES (TCA)** is a consulting firm specializing in economic, engineering and regulatory analyses and policy implementation for the energy and utility sectors in the United States and around the world. We help clients understand and respond effectively to the changing structure of electricity and natural gas markets.

TCA provides services to the electric and gas industry in five major areas:

- ◆ Utility industry restructuring
- ◆ Market rules and regulatory support
- ◆ Electric transmission analyses and price forecasts
- ◆ Market studies, asset valuation and contract analyses
- ◆ Real-time pricing - response strategies and scheduling software

TCA has offices in Cambridge, Sacramento and Los Angeles. Please visit our web site at [www.tca-us.com](http://www.tca-us.com)



### **U.S. DEPARTMENT OF ENERGY** *Office of Power Technologies (OPT)*

As part of the Department of Energy's Office of Energy Efficiency and Renewable Energy, our mission is to lead the national effort to support and develop clean, competitive, and reliable renewable energy, distributed natural gas, and power delivery technologies for the 21st century. These technologies can lower energy costs, reduce greenhouse gas emissions and pollutants, and improve the reliability of electricity service. To advance our mission, we:

- ◆ Support a broad spectrum of basic and applied research, technology development, and field validation activities through partnerships with national laboratories, academic institutions, and the private sector
- ◆ Encourage power providers to choose renewable energy (wind, solar, biomass, hydropower, geothermal) and energy efficiency technologies on an equitable basis with other supply technologies
- ◆ Help remove informational, financial, and institutional barriers that impede penetration of these new technologies into the marketplace
- ◆ Actively participate in policy formulation and analysis in order to plan and manage our advanced power technology research and development and field validation programs effectively.