EPRI

2025 RESEARCH PORTFOLIO

TRANSITION NEXUS: ENERGY FOR THE FUTURE

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The global power industry is in the midst of extraordinary transformation.

The change is vast, touching every aspect of how we produce, deliver, manage, and consume energy—and every corner of the globe.

The change is vital, responding to the imperatives of a world hungry for expanded access to electricity and a clean-energy future.

And the change is happening in real time. 2030 and 2050 carbon reduction goals are no longer far-off aspirations. They are present-day priorities, in progress and within our sightlines.

We are growing ever closer in our quest for sustainable economies, healthier ecosystems, and vibrant communities. Yet gaps remain. The energy transition requires responsive, reliable resources, enabling technology, and robust knowledge-sharing. EPRI is working to bridge those divides through research that connects people, progress, ideas, and innovation. We are building bridges to the future—and brilliant possibilities.

BENEFITS OF PARTICIPATION

Engaging in EPRI research, development, and demonstration programs offers energy organizations unique advantages, including:

Addressing critical and emerging industry issues.

Staying at the forefront of technology innovation.

Accessing a diverse and timely portfolio of research, development, and demonstration initiatives.

Collaborating and networking with industry peers to foster growth and knowledge exchange.

Implementing leading-edge technology with the expertise and support of EPRI's researchers and technical advisors.

Reducing and mitigating future investment risks.

Informing policy decisions with objective, science-based evidence and insights.

EPRI is the premier collaborative science and technology organization serving global energy stakeholders.

Through independent, objective research, expertise, and innovative technology, EPRI empowers members to reduce costs, satisfy customers, and build for the future. With ready access to our highly respected staff, quality products, and distinctive services, EPRI members are better prepared to safely and reliably serve the electricity needs of communities worldwide.

TECHNOLOGY INNOVATION

Driving thought leadership and global innovation

INTRODUCTION

The Technology Innovation (TI) program drives thought leadership throughout EPRI and across the globe. Our expertise combines horizon scanning, scouting, and early-stage demonstration with leading-edge R&D. We engage experts inside and outside the energy industry in delivering strategic insights and accelerating a pipeline of emerging technologies and solutions to support decarbonization objectives across the energy transition.

All EPRI members fund the TI program as a core benefit of EPRI membership and an enabler of our public mission. EPRI members may access all TI information resources (more than 150 unique products and webcasts annually) and participate in interest groups, thought leadership forums, conferences, and other collaborative activities.

Many TI resources are also publicly available, free of charge, to broaden the dissemination of independent, science-based research results and inform discussion of emerging energy industry topics, trends, and technologies.

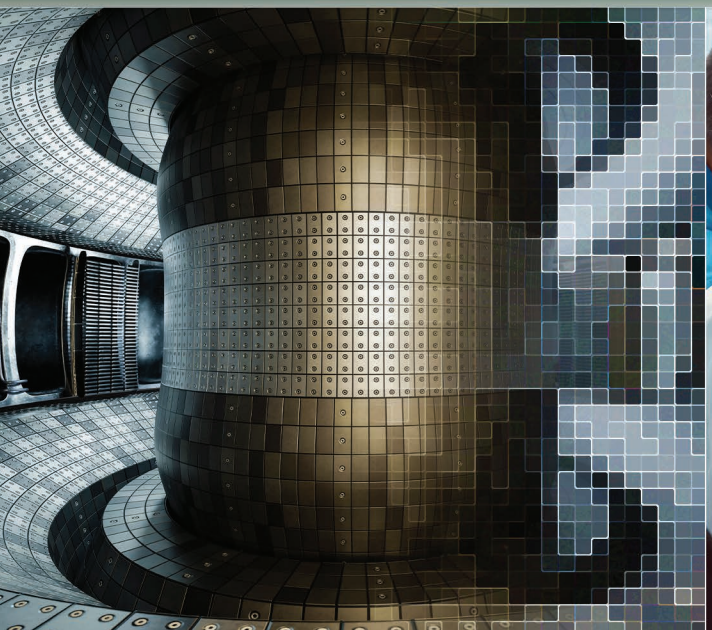
TI's objectives include:

- Accelerating economy-wide decarbonization and building resilience and reliability across critical infrastructure while facilitating the emergence of digitized and integrated energy networks
- Exploring emerging opportunities and potential challenges—inclusive of technologies, business models, and policies and regulations—and ideating on innovation and new clean energy technologies
- Collaborating across the energy stakeholder community, including academia, government, industry, and nongovernmental organizations, to foster the emergence of low-carbon energy systems

Our overall work concentrates on four program priorities:

- **Strategic Insights**
- **Global Innovation Hub**
- **Strategic Research Priorities**
- **Long-Term Sector R&D**

More information on TI and our programs and resources is available on the TI website, on TI's public-facing Strategic Insights page, and by subscribing to the monthly TI newsletter.



O U R W O R K

PROGRAM: STRATEGIC INSIGHTS

Strategic Insights focuses on exploring emerging topics, trends, and technologies and leveraging existing EPRI research and analysis to inform a broad array of stakeholders and support strategic conversations across the industry. Insights are delivered through published documents, digital tools, interactive media, and webcasts, including the following examples.

Resources & Tools:

- **EPRI Insights:** Briefing documents and interactive resources addressing current events, industry trends, and R&D to help inform energy strategy. Topics span the full electricity and integrated energy system landscape.
- **TechRadar:** Interactive digital tool for industry professionals to explore transformative technologies and gain insights into potential market disruptions, economic and environmental impacts, commercial readiness, and integration challenges.
- **TechPortal:** Online database of technology vendors and service providers offering emerging solutions and innovations across the energy industry.

PROGRAM: GLOBAL INNOVATION HUB

The Global Innovation Hub creates collaborative platforms that engage energy companies and industry stakeholders in improving effectiveness and accelerating outcomes from innovation programs and in fostering collaborative exploration of emerging technology and business areas:

- **Global Innovation Effectiveness (GIE)** project brings together innovation experts and technology managers to create and apply best-practice tools focusing on strategy, structure, culture, and benchmarking. GIE tools and learnings support maturity assessment, strategy development, portfolio management, and change management based on innovation priorities and performance metrics.
- **Incubatenergy® Labs** is a rapid scouting and demonstration program connecting startups worldwide with EPRI and energy companies for pilot projects addressing industry-prioritized use cases.
- **Incubatenergy Network (IEN)** is an international collaboration of cleantech incubators and accelerators convened to encourage the global scaling of innovations. IEN also creates opportunities for energy companies to engage with leading incubators and their startup portfolios.

Sample Collaborative Forums:

- **24/7 Carbon-Free Energy Interest Group:** Explores the development and implementation of load-matched carbon-free energy products for customers.
- **Fusion Forum:** Explores the current state of fusion energy technology, builds community among developers and end users, and reviews R&D and commercialization activities.
- **Quantum Interest Group:** Explores ways that quantum technologies can benefit the energy industry through cross-industry collaboration, technology development, and thought leadership.
- **Geothermal Energy Interest Group:** Explores currently available and future technologies and their potential contributions to decarbonization goals.
- **Utility Business Model Working Group:** Engages a worldwide network to examine innovations for new utility constructs and integrate new technology into utility planning and operational processes.
- **Value of Resilience Working Group:** Explores tools for assessing customer-focused utility resilience needs and informing societal choices and investment decisions.

PROGRAM: STRATEGIC RESEARCH PRIORITIES

EPRI has identified five strategic priorities for accelerating progress toward decarbonization while meeting affordability and reliability goals. TI-funded strategic research programs, initiatives, and projects are designed to catalyze collaboration in filling the key technology, market, and capability gaps highlighted below:

- **Clean Energy:** Reducing the costs and risks of deploying advanced nuclear reactors and carbon capture and storage systems and developing the workforce needed to accelerate clean energy deployment and decarbonization.
- **Electric System Flexibility:** Understanding flexibility requirements and capabilities and enabling interoperability and resource adequacy across grid-interactive loads, distributed energy resources, and load-serving assets.
- **Energy System Reliability & Resilience:** Improving reliability and resilience across the electric sector and broader energy system, accounting for network interactions, cyber and physical security, and climate change.
- **Building & Industry Decarbonization:** Accelerating electrification and decarbonization of buildings and industry by addressing factors driving technology adoption and influencing customer behavior.
- **Market Transformation:** Fostering cost-effective and egalitarian market mechanisms and pricing strategies to influence grid planning and operations, investment in and operation of load-serving resources, and customer behavior.

PROGRAM: LONG-TERM SECTOR R&D

Multi-year R&D programs and projects advance basic understanding, early-stage concepts, and cross-cutting technologies aligned with the roadmaps driven by EPRI's sectors. Long-Term Sector R&D helps maintain a full pipeline of new science, innovative technology, and state-of-the-art technical capabilities across all of EPRI:

- **Energy Systems Resources**
  - **Generation**
  - **Nuclear**
- **Energy Delivery & Customer Solutions**
  - **Transmission and Distribution Infrastructure**
  - **Integrated Grid and Energy Systems**
  - **Electrification and Sustainable Energy Strategy**

NUCLEAR

Expanding Nuclear Power's Boundless Potential

With a legacy of providing secure, reliable, and carbon-free electricity, the global nuclear energy sector continues to play a vital industry role, this time in the transition to a sustainable, increasingly electrified future. EPRI is committed to helping ensure the world's nuclear industry adapts and significantly contributes to the many important energy, economic, and environmental goals making headlines today.

Toward that end, EPRI's nuclear research and development (R&D) portfolio focuses on advancing the development, commercialization, construction, and operation of advanced next-generation reactors and maintaining the safe and cost-effective operation of existing nuclear units.

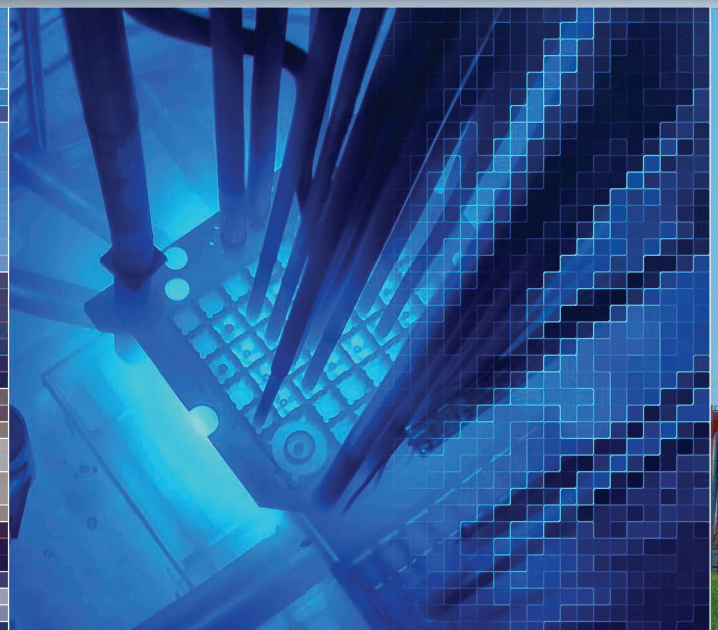
Through its Advanced Nuclear Technology (ANT) program, EPRI conducts research to minimize the risks associated with building and operating new nuclear plants. Research activities include evaluating and managing the challenges of commercializing nuclear power plants of various designs, from traditional light-water reactors to modular reactors, microreactors, and non-water-cooled designs. EPRI researchers are also exploring alternative uses of nuclear power, such as desalination, hydrogen production, decarbonizing oil and gas production, district heating, and commercial maritime shipping.

EPRI's Advanced Reactor Roadmap, developed in collaboration with industry stakeholders, represents a significant milestone in accelerating the transition to carbon-free electricity. Released initially for North America in 2023, the roadmap outlines actionable steps to successfully deploy advanced reactors.

To support the future fleet of advanced reactors, EPRI has established user groups to facilitate knowledge and experience sharing among experts across different reactor types.

In addition to advancing innovative new technology and next-generation plants, EPRI continues to build on decades of success by seeking to maximize the contributions of existing nuclear plants. EPRI's nuclear team adds value by researching materials, fuel, chemistry, safety, risk, digital transformation, increased megawatt production, and safely extending a unit's operational lifespan. Furthermore, EPRI's framework for evaluating plant modernization strategies can reduce costs and improve performance in response to changing market dynamics.

Whether through leading-edge research, operational optimization, or connecting members with knowledge, tools, and resources, EPRI remains committed to supporting the nuclear industry and helping the world achieve its greenhouse gas reduction and net-zero carbon targets by 2030 and 2050.



2025 RESEARCH OFFERINGS

MATERIALS MANAGEMENT

Research in nuclear materials management enhances our understanding of materials aging processes within nuclear reactors and assists in developing technologies to detect, characterize, monitor, mitigate, and address degradation.

Programs include:

- International Materials Research
- Pressurized Water Reactor Steam Generator Management Program
- Boiling Water Reactor Vessel and Internals Program
- Pressurized Water Reactor Materials Reliability Program
- Welding and Repair Technology Center
- Nondestructive Evaluation

PLANT PERFORMANCE

Plant performance research elevates nuclear plant performance by offering tools, techniques, and practices that contribute to informed design, maintenance, and operational decision-making, ultimately enhancing equipment reliability and plant safety.

Programs include:

- Risk and Safety Management
- Plant Reliability and Resilience
- Operating Plant Initiatives

STRATEGIC INITIATIVES

EPRI's Nuclear Strategic Initiatives research examines opportunities and challenges surrounding the deployment of nuclear power plants across all generational designs, spanning large light-water reactors, advanced reactor technologies, light-water small modular reactors, microreactors, and non-water-cooled reactor designs. EPRI also explores non-electricity nuclear applications and technical hurdles in fusion power, both of which are gaining renewed attention as viable options for meeting future energy needs.

Programs include:

- Advanced Nuclear Technology
- Fusion

FUELS AND CHEMISTRY

Advances in nuclear fuel technology and chemistry establish the technical basis for preventing fuel failures and exploring enhanced fuel options, improving nuclear plant safety, economic viability, and reliability. EPRI programs offer guidance and advanced technologies to improve water chemistry practices, optimize high- and low-level waste management, and reduce radiation exposure.

Programs include:

- Fuel Reliability
- Used Fuel and High-Level Waste Management
- Nuclear Fuel Industry Research Program
- Chemistry and Radiation Safety
- Remediation and Decommissioning Technology

ENERGY DELIVERY & CUSTOMER SOLUTIONS

Driving the Transition to Tomorrow's Energy Network

The imperative of a net-zero future includes the electric power sector and the many stakeholders invested in vibrant, thriving, sustainable communities. The shared priorities and planning for decarbonization, delivery infrastructure, expanding electrification, and climate resilience are reflected in EPRI's growing network of Energy Delivery & Customer Solutions (ED&CS) collaborators, partners, and creative, innovative minds.

The widescale adoption of electric vehicles (EVs) represents transformative change and is an important research focus in ED&CS. The sector's EVs2Scale2030™ initiative and associated programs build on EPRI's long tradition of working with utilities, automakers, battery producers, fleet operators, and others to advance electric vehicle technology and prepare the grid for significant new load.

EPRI is also responding to the growing emphasis on renewable energy sources like wind and solar by developing and demonstrating advanced grid technologies like smart grids, energy storage, and integrated distributed energy resources to balance supply and demand while ensuring reliability and resilience.

Safeguarding electric power systems and infrastructure from climate-related risks is critical to ensuring continued reliability. EPRI's Climate READi initiative addresses energy system strength and adaptation amidst the increasing frequency of extreme weather events, enabling energy companies, climate scientists, regulators, and other stakeholders to proactively analyze and apply climate data to improve system resilience, and serve customers safely and dependably.

EPRI also leads efforts to secure energy systems and stakeholders from cyber security threats through lab evaluations, field tests, metrics, business capability modeling, and the proactive pursuit of robust information, communication, and cyber security architecture and technology.

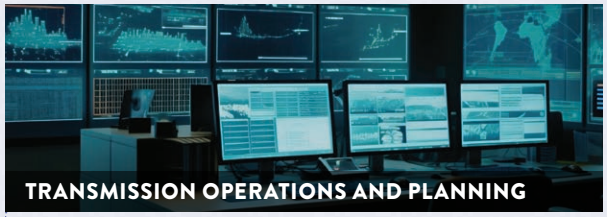
As electrification advances to meet rising demands, distribution infrastructure, system performance and customer solutions must also evolve. EPRI is committed to fostering innovation that delivers value and flexibility to utility customers, the grid, and society. ED&CS research efforts allow utilities to provide customers with greater choice and control of their energy usage and carbon footprint.

Through its commitment to breakthrough R&D, technology innovation, and collective knowledge sharing, EPRI's ED&CS sector is paving the way for a sustainable energy future.

TRANSMISSION AND SUBSTATIONS

Transmission asset owners face numerous issues, including aging infrastructure, rigorous operating standards, financial constraints, the need to rapidly increase grid capacity, and the departure of experienced personnel, all of which challenge asset management. EPRI's research provides the technical foundation to support critical decisions across all phases of asset management. This includes recommendations for new component specifications, engineering software tools, advanced asset health algorithms, innovative sensing solutions, and inspection and assessment tools. In addition, EPRI offers an array of reference materials and field guides to support personnel at various career stages. EPRI's advanced laboratories provide expertise in cyber security, drone testing, high-voltage testing, and much more.

- Transmission Asset Management Analytics – P34
- Overhead Transmission – P35
- Underground Transmission – P36
- Substations – P37



TRANSMISSION OPERATIONS AND PLANNING

Transmission system owners and operators face the dual challenge of managing today's power system while also planning for tomorrow's electric system. Decarbonization drives fundamental changes in electricity supply, including a substantial increase in variable and energy-limited resource levels and a decline in dispatchable synchronous generation. EPRI's research provides analytics for understanding the changing operating environment and methods and tools to guide planning and operational decisions. New methods, models, and planning tools developed by EPRI provide decision support for planners, operators, and system protection engineers, helping them validate planning models, assess reliability and economic parameters, and visualize planning scenarios and outcomes.

- Transmission Operations – P39
- Transmission Planning – P40
- Bulk System Integration of Renewables and Distributed Energy Resources – P173
- Electricity Market Design and Operation – P246

TRANSMISSION AND DISTRIBUTION ENVIRONMENTAL IMPACTS

Transmission and distribution systems are expected to meet the growing demands of electrification and increased reliability while meeting sustainability and stewardship objectives. EPRI's research identifies opportunities and develops approaches to improve vegetation management, decrease animal interactions, improve environmental compatibility, and evaluate potential human health risks from electric and magnetic fields and radio-frequency exposure. These research findings are integral in guiding transmission site selection, vegetation maintenance strategies, environmental management efforts, and other T&D priorities.

- Transmission and Distribution Environmental Solutions – P51
- Electric and Magnetic Fields and Radio-Frequency Health Assessment and Safety – P60

DISTRIBUTION

Changing customer expectations, regulatory and policy initiatives, extreme weather, and the need to integrate distributed energy resources (DER) and advanced technologies are reshaping how distribution utilities plan and operate the grid. In response to these dynamics, utilities are investing in people, processes, and technology to modernize the grid and meet future customer needs.

EPRI's research informs all aspects of distribution grid modernization, providing technical insights for decision-making across all phases of asset lifecycle management. EPRI also develops new tools and methodologies that help members plan and operate integrated distribution systems, drawing upon advanced grid and DER technology, grid integration resources, safety protocols, and leading workforce practices.

- Energy Storage and Distributed Generation – P94
- DER Integration – P174
- Distribution Systems – P180
- Distribution Operations and Planning – P200

INFORMATION, COMMUNICATION, AND CYBER SECURITY

EPRI's Information, Communication, and Cyber Security (ICCS) research area works to help the global power sector achieve important decarbonization, digitalization, and increased resiliency and flexibility goals. The ICCS research area addresses the technical and economic challenges of identifying, evaluating, and implementing enabling Information and Communication Technologies (ICT) for grid modernization and digital transformation efforts.

EPRI's ICT program promotes innovation by identifying efficient interoperability solutions, thus steering the industry toward highly connected, interoperable future grid value streams. EPRI's cyber security program addresses emerging threats to an interconnected electric sector through multidisciplinary, collaborative research on cyber security technologies, standards, and business processes.

- Information and Communication Technology – P161
- Cyber Security for Energy Delivery and Customer Solutions – P183

ENERGY SYSTEMS AND CLIMATE ANALYSIS

Decarbonization and climate impacts drive changes in company operational decisions, investment strategies, environmental management, resource planning, business strategies, policy formulation, and industry structure. EPRI's research provides technical data and information, analytic tools, and insights to support resource and strategic planning and company engagement with regulators, shareholders, and other stakeholders through this evolution. It also includes exploring technological pathways to the electric sector and economy-wide net-zero CO2 emissions, valuing emerging and advanced technologies, comparing alternative climate policy designs, and assessing climate-related risks, impacts, and power sector resilience.

- Resource Planning for Electric Power Systems – P178
- Energy, Environmental, and Climate Policy Analysis – P201
- Greenhouse Gas Emissions Accounting and Strategic Applications Supplemental Program

ELECTRIFICATION AND CUSTOMER SOLUTIONS

Achieving economy-wide clean energy goals depends in large part on decisions made by end-use customers. Consumer preferences regarding technology and service options influence not only electricity production and consumption patterns; they can also yield customer and grid benefits, including cost efficiencies, expanded choice, and improved resilience. Additionally, they have implications for power quality, load forecasting, and service continuity. EPRI continues to be pivotal in advancing electrification, leveraging its world-class laboratories to drive innovation. For example, EPRI is enabling progress in air-source heat pump efficiency, with a specific focus on cold climate functionality. EPRI research initiatives provide valuable insights into technology, economics, and consumer behavior, supporting the development of impactful customer services and programs.

- Power Quality – P1
- Grid-Edge Customer Technologies – P170
- Customer Insights – P182
- Electrification – P199
- Advanced Buildings and Communities – P204

TRANSPORTATION AND MOBILITY

EPRI's Transportation and Mobility Program promotes clean, zero-emission transportation through electric vehicle (EV) research and development, load forecasting and economic analysis, and grid and infrastructure planning. EPRI's EVs2Scale2030™ initiative leverages industry scale to galvanize the utility industry and align critical market stakeholders as EVs are deployed at scale to achieve 2030 electrification goals. The program collaborates with more than 500 stakeholders, including the U.S. Department of Energy. Planning tools include eRoadMAP™, which allows users to visualize transportation loads at the distribution feeder level to inform grid investments, and GridFAST™, aimed at accelerating grid interconnects.

- Electric Transportation – P18

SUSTAINABILITY AND ECOSYSTEM STEWARDSHIP

Amid the ongoing energy transition, there is growing corporate and public focus on fostering sustainable economies, healthier ecosystems, and more vibrant communities. EPRI plays a pivotal role in helping utilities navigate the changing landscape by cultivating the science, tools, resources, and collaborative forums needed to instill a sustainability culture across the energy sector. Sustainability and Ecosystem Stewardship research encompasses the systematic evaluation of water, climate, and ecosystem-related risks, as well as endangered and at-risk species regulation and habitat conservation solutions. Moreover, EPRI assists energy companies in quantifying sustainable value, assessing economic, environmental, and social opportunities and impacts, and integrating sustainable practices into daily operations and long-term planning.

- Endangered and At-Risk Species – P195
- Strategic Sustainability Science – P198
- Ecosystem Risk and Resilience Supplemental Program

WORKER AND COMMUNITY HEALTH AND SAFETY

Workplace exposure and injuries have wide-ranging effects on employee health, community welfare, productivity, business costs, and job satisfaction. Drawing on decades of experience, EPRI explores strategies to enhance safety, mitigate risks, and safeguard workers, communities, and infrastructure, with a critical focus on reducing Serious Injuries and Fatalities (SIFs) in the electric utility industry. Areas of active research include potential safety impacts related to the energy transition and safety concerns associated with extreme weather events, including heat stress and wildfire smoke exposure. EPRI also builds on its knowledge base related to road and work zone safety to protect workers from motor vehicle-related hazards. EPRI's research provides data analyses and tools to help utilities maintain safer, healthier work and community environments, understand the value of safety product innovations, identify industry and illness trends, develop cost-effective ergonomic interventions, and address occupational exposures. Research results also help advance awareness of how a company's culture, safety management systems, and business operations influence safety performance.

- Enterprise-Wide Occupational Health and Safety – P62

GENERATION

Enabling the Energy Supply Transition

As the energy transition strides toward ambitious decarbonization goals, EPRI's Generation sector remains steadfastly committed to supporting reliability, resilience, and resource adequacy—and leading the strategic research needed to make informed, forward-looking decisions.

EPRI experts collaborate across industry, government, and academia to ensure and advance energy supply through the transition. Together, we tackle today's most pressing challenges while laying the groundwork for tomorrow's energy needs. Achieving mid-century net-zero goals requires advancing both emerging and existing supply technologies. Bringing new energy supply technology options to market demands rigorous testing, full-scale demonstration, and seamless system integration. With decades of experience, EPRI is uniquely poised to help guide the innovation essential to a successful energy transition.

EPRI's Generation sector experts conduct research to optimize thermal power assets, advance emerging energy supply resources, enhance environmental controls, and digitally transform systems to make established assets more reliable, flexible, and efficient. As aging assets approach retirement, EPRI is actively developing solutions that benefit local communities and the environment.

In a world in which resilience is paramount, both existing and new-generation technologies must be engineered to withstand challenges such as extreme weather events, cyber security threats, and the demands of an increasingly variable energy system. EPRI's R&D efforts are dedicated to mitigating these challenges at both asset and fleet levels.

Meeting the imperative of energy transition calls for concerted effort, expertise, and collaboration. EPRI helps lead the decarbonization charge through industry-level initiatives. Through the Low-Carbon Resources Initiative and in collaboration with GTI Energy, we are accelerating the development and deployment of low-carbon energy carriers, such as clean hydrogen, bioenergy, and renewable natural gas. In partnership with the World Economic Forum and Accenture, EPRI works to identify innovative ways to leverage low-carbon energy resources in industrial processes, further reducing emissions on a global scale.

The journey to a net-zero energy future is built upon a foundation of collaborative research, data-driven insights, and cutting-edge technology. EPRI's work with the global power sector not only informs decision-making today; it is also shaping a robust, reliable energy outlook for decades to come.

2025 RESEARCH OFFERINGS

THERMAL FLEET

R&D for major components enhances reliable and affordable power generation through energy transformation. These programs provide key insights into critical equipment, understanding degradation mechanisms, and comprehensive life-management strategies.

RENEWABLE FLEET

Renewable energy research supports essential components of the clean energy transition by helping quantify the cost, technical performance, and reliability characteristics of utility-scale renewable generation technologies to inform planning and generation fleet management decisions. Renewable energy programs support operations maintenance, technology development, and wind, solar, and hydropower asset assessments.

NEXT-GENERATION FLEET

Accelerating the development and commercial application of low-carbon power generation and bulk energy storage technologies is a vital enabler of a low-carbon energy future. These programs include research into CO2 capture technologies and large-scale thermal energy storage. In addition, new plant concepts and designs address technical risks, economic and environmental performance, and the challenges of deploying these new technologies. Insights from these and related programs are brought together to inform the development of effective generation transition strategies.

THERMAL OPTIMIZATION AND EMISSIONS CONTROLS

As a more variable generation mix demands greater flexibility and industry and government place increased emphasis on environmental considerations and mitigation strategies, this research seeks to optimize the thermal fleet while minimizing all current or anticipated controlled emissions for fuels, including gas, coal, and biofuels. Emissions include NOx, CO, ammonia, formaldehyde, SOx, mercury, and particulates.

WATER AND LAND MANAGEMENT

Effective water and land management is increasingly important to the power sector, energy customers, communities, and the environment. Research focused on water management in both the cooling systems and wastewater streams of power plants provides technology development and operational guidance to ensure efficiency, water treatment and quality management, and the management of the environmental effects of discharges. Coal combustion products (CCP) programs offer cost-effective CCP management and recycling practices to enhance environmental protection. CCP research uses scientific data, engineering knowledge, restoration methods, models, and other advanced tools and guidance associated with storage, disposal, and use.

AIR QUALITY AND HEALTH

A better understanding of the environmental aspects of power generation can inform clean energy transition strategies. Air quality research spans the characterization of emissions and multimedia releases, along with developing and evaluating air quality models and ambient measurement technologies. This research also involves assessments that inform the implementation and development of air quality standards, including assessing the health effects of key pollutants from electricity generation and other health issues.

2025 RESEARCH OFFERINGS

FLEET MANAGEMENT AND OPERATIONS

The ongoing energy transformation is increasing emphasis on generation fleet efficiency and asset and plant management. This research offers guidance, technology solutions, demonstrations, and training materials to support evolving needs.

- Integrated Asset Management – P224
- Plant Management Essentials – P225
- Boiler and Turbine Steam and Cycle Chemistry – P226
- Plant Decommissioning and Site Redevelopment Supplemental Program

DIGITALIZATION

Advanced technologies can help meet customers' needs more efficiently and reliably amid growing dependence on electricity. Integrated research solutions leverage emerging digital technologies and methods to improve equipment and plant performance while meeting safety and security standards in a changing industry. Research supports fleets by advancing digital transformation, addressing cyber security concerns, flexible operations, and data collection and analysis.

- Cyber Security for Generation Assets – P209
- Process Control and Automation – P227
- Monitoring and Advanced Data Analytics – P228
- Digital Transformation Research Initiative

MATERIALS

Delivering the full potential of existing and emerging assets through the energy transformation starts by understanding the impacts of changing demands and operational realities on power system materials. This research supports the maintenance of the existing fleet. It provides new and emerging insights for new assets and processes to help manage and reduce the operational risks associated with material degradation and failure.

- Materials – P229

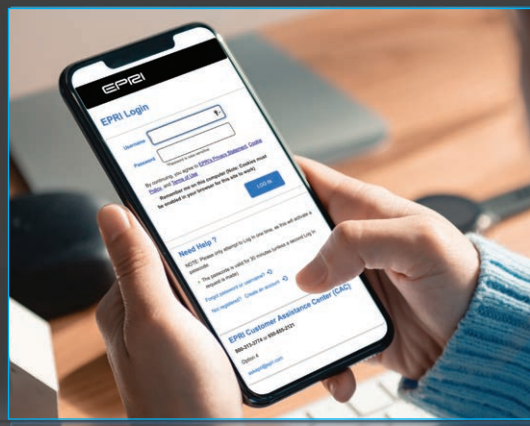
GETTING THE MOST FROM YOUR PARTICIPATION

To realize the greatest value from EPRI's programs, we encourage you to:

Participate in advisory meetings to help shape the direction of our research.

Access and apply leading-edge findings within your company.

Discuss your emerging or ongoing needs with your EPRI Technical Advisor or International Regional Manager.



Obtain an epri.com login ID to access EPRI's ongoing research collaboratives and products.

CONTACT EPRI

To discuss options and solutions for your needs:

- Call EPRI at 800.313.3774 and press 4 to connect with EPRI's Customer Assistance Center.
- Email askepri@epri.com and ask for an EPRI representative to contact you.

ABOUT EPRI

Founded in 1972, EPRI is the world's preeminent independent, non-profit energy research and development organization, with offices around the world. EPRI's trusted experts collaborate with more than 450 companies in 45 countries, driving innovation to ensure the public has clean, safe, reliable, and affordable access to electricity across the globe. Together...shaping the future of energy.

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