

THE POWER OF DIVERSITY



ABOUT AEP

BUSINESS MODEL

CUSTOMERS & COMMUNITIES

ENVIRONMENT & CARBON

OUR PEOPLE

PERFORMANCE SUMMARY

MESSAGE FROM THE CHAIRMAN

The electric utility industry is undergoing a major transformation that will result in a cleaner, stronger, more flexible, reliable and resilient grid. We envision a grid that is more intelligent and responsive and is valued for the services it provides. To achieve this, we are embracing change by building upon our commitment to operational excellence and being adaptable, solutions-oriented and innovative.

[READ THE FULL LETTER >](#)



BUILDING THE NEXT-GENERATION ENERGY COMPANY

Our vision is to deliver an energy future built on diverse energy resources and an interactive power grid that is more reliable and secure, with technologies that enhance access and services for all customers.



CUSTOMER EXPERIENCE

We are developing the technology to enable our customers to make choices that improve their service, reduce cost and deepen their relationship with us.



SUSTAINABLE ELECTRICITY

We are adapting the legacy energy system to become a cleaner, smarter and resource-diverse power grid that is reliable, secure and modern.



STRATEGY FOR GROWTH

We are investing in infrastructure that improves reliability, gives customers the clean energy they want and enhances the overall customer experience.

ABOUT AEP

"We are committed to creating a smarter, more secure grid; developing new products and solutions that enhance the customer experience; and leveraging the ingenuity of our employees to reinvent what the next-generation energy company looks like and how we operate."

- Nick Akins, Chairman, President and CEO



🏠 | ABOUT AEP

ENTERPRISE SECURITY

In today's 24/7 digital world, we rely on physical systems and electronic data to ensure the reliability of the power grid and provide service to our customers. Protecting those systems and data from cyber and physical attacks is a priority for AEP and our industry.

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A STRONG FOUNDATION

The foundation of our business is built on the strength and diversity of our regulated companies; our investments in transmission enable the growth of renewable resources while modernizing the power grid; and our history of innovation guides our pursuit of new technology solutions for the future.



AEP'S MAJOR BUSINESSES

AEP is one of the largest electric utilities in the U.S., serving nearly 5.4 million regulated customers in 11 states.



CORPORATE GOVERNANCE

We believe that effective corporate governance is an essential part of ensuring strong business conduct and sustained performance.



AEP LEADERSHIP

We have a strong leadership team in place, allowing us to adapt successfully as we build the next-generation utility.

Message from the Chairman

At American Electric Power, we are positioned for superior long-term financial gains because we carefully manage and measure our financial, environmental and social performance while providing our customers with safe, clean and reliable energy.

As our industry's transformation unfolds, AEP is uniquely poised for success. The foundation of our business is built on the strength and diversity of our regulated companies; our investments in transmission enable the growth of renewable resources while modernizing the power grid; and our history of innovation guides our pursuit of new technology solutions for the future.



Nicholas K. Akins
Chairman, President & Chief Executive Officer
American Electric Power

We are forging new partnerships to speed innovation and building on established relationships to boldly transform our company. As we adapt our 110-year-old business to become the next-generation energy company, we have many opportunities to engage with policymakers, regulators, stakeholders, customers and investors about how our industry is evolving. Our vision is to deliver an energy future built on diverse energy resources and an interactive power grid that is more reliable and secure, with technologies that enhance access and services for all customers.

Our strategy is to modernize the power grid to support a reliable, clean energy future and modern technologies, with a focus on three key elements: building infrastructure and technology to give customers choice about how they use energy, supporting strong communities with economic development opportunities, and providing investors a long-term opportunity for sustainable shareholder returns. Our employees help us implement this strategy with a disciplined and execution-oriented approach supported by a culture of safety, innovation, agility and continuous improvement.

Signposts of Success

Throughout 2015, we reached several important milestones, positioning our businesses for near-term success and long-term sustainable growth. Our goal was simple: to establish a firm foundation to advance our company financially, operationally, culturally and strategically.

We continued to optimize our regulated businesses to position us for the structural changes occurring in our industry. We also invested in our energy infrastructure to create an operational platform to enable customers to create value for themselves, by interacting with us, while public policies and regulatory models continue to evolve.

We are evolving to become the optimizer and integrator of multiple resources – for customers and with customers. That is why we are embracing and helping to develop a transactional energy grid – one with clear and frequent two-way communications between the power grid and customers. Catalysts for this transformation include abundant, low-cost natural gas, environmental regulations, slowing load growth on our system, and the advancement of new technologies that are changing the capabilities of the power grid.

We began laying the foundation for the energy grid of the future nearly a decade ago with the launch of our gridSMART® initiative. That effort began a journey of technological growth to accommodate a more diverse energy mix, improve energy delivery and use new technologies that benefit customers and enhance the operation of the power grid. gridSMART® gave us the equivalent of a smart phone, but with no apps. Today, we are developing the technology to enable our customers to make choices that improve their service, reduce cost and deepen their relationship with us – beyond the basics of monthly billing and outage restoration.

Financial, Social and Environmental Performance

Strong Financial Health

I am pleased to report that AEP's financial health is at its strongest in years. Our balance sheet and credit metrics are strong, we have sufficient liquidity, and a proven track record of disciplined spending. In 2015, our operating earnings per share grew by 7.6 percent and our quarterly dividend increased by nearly 6 percent. Our performance was strong: We raised our earnings guidance twice during the year. We also paid quarterly dividends to our investors, a continuous tradition that dates back more than a century. In fact, the first quarterly dividend approved in 2016 marked the company's 424th consecutive quarterly common stock cash dividend to shareholders of record. AEP has paid a cash dividend on its common stock every quarter since July 1910.

AEP is experiencing a cultural transformation, the foundation of which is based on employee engagement and continuous improvement. Employees continue to identify and implement cost reduction strategies, waste elimination techniques and process improvements that enable us to allocate additional resources to invest in priority areas and grow our bottom line. We are excited about this cultural change, not as a one-time initiative, but as a sustainable, continuous part of our business that will redefine who we are for many years to come.

Our regulated companies are driving overall growth which should continue as we invest capital to modernize the power grid and improve the customer experience. For example, AEP Transmission Holding Company contributed 39 cents per share in 2015, compared with 31 cents in 2014 – a reflection of its accelerated growth. Successful regulatory proceedings and the cost savings achieved through employee-led efforts have contributed as well. Our 2016 outlook solidly supports our projected 4 percent to 6 percent operating earnings growth.

Strong Social Performance – Safety, People, Communities

In 2015, we achieved an important new milestone – four consecutive years without an employee fatality. This was a significant breakthrough, because it had not occurred since at least 1970 when we began to keep comprehensive safety performance data. I am deeply grateful to our employees for demonstrating the mutual care and commitment to each other that made this achievement possible.

Sadly, we were reminded of how lives can be changed forever when safety focus is lost. In 2015, four AEP contractors lost their lives and there were 11 public fatalities resulting from people coming into contact with our electrical equipment. And, in early 2016, a veteran transmission employee lost his life and another employee was seriously injured after their vehicle was struck by a train as they were crossing the tracks. These tragedies profoundly affected every employee at AEP, reminded us of how vigilant we must always be about safety and health, and strengthened our resolve for Zero Harm. We are taking a hard look at these events to identify hazard elimination and risk mitigation strategies. We must, and we will, do better.

Although we face numerous challenges in our quest, we are determined to reach our goal. Our strong safety culture and deep commitment to Zero Harm will guide us. In 2016, we will implement a plan designed to get us to Zero Harm in the future. It includes setting clear expectations, increasing personal accountability, providing additional safety training, and being more rigorous when it comes to measuring our performance.



We know that our success as an organization depends on motivated, engaged employees. Three years ago, we assessed our culture for ways to get employees more engaged to help us reach our business goals. We have many opportunities to grow as an organization, and we have seen meaningful improvement in our culture survey results in the last two years. I am excited by our focus on an open, collaborative work environment that values each individual's contributions. This environment is evidenced and boosted by our seven employee resource groups and the diversity of our work force.

Our success also depends on the strength and vitality of our communities. In 2015, AEP and the AEP Foundation contributed approximately \$13.5 million in charitable donations to 1,800 community organizations. We also helped build stronger communities by providing economic development opportunities to attract jobs, support capital investment and grow local economies. Our Economic & Business Development team worked with state, regional and local economic development partners on 170 projects during the year to attract or retain businesses in our communities that are expected to create more than 22,000 jobs in our communities.

We are also investing in education to ensure that graduates are well-prepared to join the work force of tomorrow. Education opens the door to new opportunities, many of which otherwise would not be possible. Being raised in an area of economic hardship, I understand some of the obstacles faced by many families in our communities today.

I want to make sure that children growing up today in our communities get the kind of support, guidance and resources they deserve. That is why we created Credits CountSM, a dual-enrollment program that is helping to build career pathways for economically disadvantaged students in the fields of science, technology, engineering and mathematics (STEM). We have committed more than \$11 million to create this signature program. Our goal is to establish at least one Credits Count program in each of our seven regulated companies' service territories to help create a new generation of highly skilled talent to meet the needs of our company and our country.

Environmental Performance

2015 was a landmark year for the environment, as over 190 nations acted globally to reach a historic climate agreement last December, culminating decades of debate and negotiation. AEP has always maintained that climate change is a global issue and global responsibility – no single country or company can carry the burden. The Paris agreement sets the stage for such a global solution.

We constantly discuss our carbon profile and our plans to reduce emissions with investors, policymakers, environmental groups, customers and other stakeholders. We have made significant progress and will continue to reduce our carbon footprint as we diversify our energy resource portfolio. Through 2015, AEP's carbon emissions have already declined by 39 percent from 2000 levels.

In the United States, the Clean Power Plan – the Environmental Protection Agency's (EPA) mandate to regulate carbon emissions in the power sector – has been stayed by the U.S. Supreme Court. Regardless of the outcome of legal challenges, the EPA still has authority to regulate carbon. AEP has been preparing for this for a long time. Our integrated resource plans factor carbon pricing as a proxy for regulation and we develop plans that give customers what they value most, regardless of the resource.



From 2000 through 2016, we will have invested an estimated \$8.5 billion to install environmental controls on our plants which have significantly reduced sulfur dioxide, nitrogen oxide and mercury emissions. In addition, between 2011 and mid-2016, we retired more than 7,200 megawatts (MW) of coal-fueled generating capacity. We are replacing it with transmission, natural gas and renewables, including solar and wind, as well as energy storage. We are also continuing to grow our customer energy efficiency and demand response programs.

Between 2011 and mid-2016, we retired more than 7,200 megawatts (MW) of coal-fueled generating capacity. We are replacing it with transmission, natural gas and renewables, including solar and wind, as well as energy storage.

Although we are converting some coal plants to natural gas and building our renewable portfolio, we believe fossil fuels continue to be an essential part of a balanced energy mix. As our industry relies more

and more on natural gas for power generation, we need to support advancements in the development of technologies that will keep fossil fuels in the mix for the long term. A diverse mix of resources is essential to manage resource and operational risk and to ensure an affordable, resilient and reliable power grid.

In Ohio, we worked with key stakeholders on an important settlement of our expanded Power Purchase Agreement (PPA) case that would have given the state the best mechanism within current law to have a say in the long-term viability of existing resources, ensure stable electricity prices and promote development of new resources within the region. But in April 2016 the Federal Energy Regulatory Commission (FERC) unfortunately intruded into Ohio's ability to protect its retail customers from market volatility and plan for its generation needs by requiring a federal review of the PPA. Waiting for FERC to complete a federal review of the PPA is not in our best interest. Although we continue to believe the PPA is the best long-term approach for our Ohio customers and the state, we are focused on moving decisively to become a fully regulated utility company. We will continue to pursue this strategy and seek innovative, collaborative solutions to create the kind of clean energy future we all want to see.

Building a Sustainable Future

The energy industry transformation is very much like the game-changing evolution of the telecommunications industry. Where once the phone was plugged into the wall, today it is mobile – connected to digital wireless networks and loaded with apps that make life easier. Unlike that industry, however, there is no substitute for electricity nor can you completely become disconnected from the power grid. The transformation that is underway in our industry is dramatic, disruptive, and is being shaped by customer choice, advanced technology, resource diversity, and unprecedented connectivity. At the heart of this transformation is the power grid that we all rely on, every day.

We are changing our business to accommodate local generation of clean energy, optimize power flows and connect diverse resources to the power grid. By 2034, our current integrated resource plans call for adding approximately 3,400 MW of solar, 6,300 MW of wind and 3,000 MW of natural gas. This includes the 900 MW of solar and wind in the AEP Ohio PPA settlement.

The power grid will change as we integrate new 24/7 energy resources, local generation, and large-scale universal renewables, and merge all of that with technological advances that will drive further efficiency and use of electricity. Our transmission and distribution business strategy is based on targeted capital investments to build infrastructure that enables local generation and provides it in a safe, clean, reliable way for all customers.

Technology and Innovation

As the industry's transmission pioneer and the nation's largest transmission owner, AEP is working to create a more flexible and resilient power grid that will support changes in generation and allow all customers to take advantage of new technologies in the most cost-effective way. Our investments in new infrastructure and technology will improve both operational efficiency and the customer experience.

Technology is changing how customers can, and will want to, interact with their energy companies. Smart grid technologies are helping us to improve service quality and reliability while empowering customers to use energy more efficiently. We have installed more than 1.6 million smart meters across our service territory and currently have plans to deploy approximately 900,000 additional meters, pending regulatory approval. In addition to giving customers more control, smart meter data will help us enhance the customer experience and prepare for new products and services that customers want from their power company.

The importance of the customer experience to AEP is why we created a new position of Chief Customer Officer in May 2016. This ensures we remain focused on having the right business models, regulatory structures and focus to effectively anticipate and meet the evolving needs and expectations of our customers.

We are also building an internal team for big data and analytics. In 2015, we initiated a proof of concept project, called the Big Data Olympics, to better understand what we can learn from big data analytics to improve the customer experience. With big data, for example, we can receive advance notice of impending equipment failures, allowing us to take preventive action before service is disrupted. We want a much stronger internal understanding of how we can effectively use big data and we are partnering with others, such as IBM, to help get us there faster.

To develop the next-generation energy company, we need partners who are developing new technologies to increase the utility of the power grid – much like apps have increased the power of smart phones. We have several partnerships with technology leaders to help us innovate new ways to use the power grid so that we can meet the expectations of our customers as well as achieve our business goals.

Our new BOLD™ transmission line design exemplifies these new grid-based technology applications. The new, patented 345 kilovolt (kV) line design delivers up to 60 percent more power in a smaller right-of-way than conventional designs. BOLD – the next-generation transmission line design – is an ideal solution for updating the more than 125,000 miles of 230-kV and 345-kV lines in the United States, especially in congested urban areas. We are now marketing BOLD globally.



AEP Transmission's new and compact line, called BOLD™ (Breakthrough Overhead Line Design), is a preferred design due to its lower profile tower and inherent electrical efficiencies, including greater capacity, lower audible noise and lower electromagnetic fields, that can reduce right-of-way land needs.

Cost-effective energy storage is another technology advancement we are exploring. In 2015, we invested in Greensmith, a company focused on grid-scale energy storage deployment because we want to be at the forefront of advancing these technologies for our customers. This investment builds on more than a

decade of experience with energy storage technologies, including deployment of the first U.S. demonstration of the Na/S (sodium sulfur) battery technology in 2002 at one of our commercial offices in Ohio.

Energy storage technology is important because it can maintain service during times of stress on the grid. It also helps to optimize intermittent renewable energy resources, improve power quality and reduce voltage fluctuations. Energy storage is already cost-effective in certain situations and will become more prevalent over time. AEP is building its first substation protection and control system operated entirely by fiber-optic technology. Fiber, which is relatively new to our industry, is less vulnerable to interruption and interference and allows for faster testing and equipment commissioning, which will enhance reliability. We are collaborating with General Electric to build this fiber optic substation, which will be operational by late 2016.

Grid Security

Like all major infrastructure, the electric grid is subject to cyberattacks, physical attacks and natural disasters. Although there is no single solution to make the power grid completely immune from threats, AEP and the industry have taken several steps to evaluate our systems, reduce the potential of attack and improve our response if an attack occurs. We are doing this, in part, through industry and government partnerships to deploy tools, processes and drills to strengthen our ability to prevent, detect and recover.

In 2015, AEP and several other utilities formed Grid Assurance™, an industry-designed solution to deliver subscribers a cost-effective process of pooling the needs of transmission owners across the United States and providing quick access to critical, long lead-time equipment that can be readily deployed to expedite restoration. Subscribers would have the right to call upon this inventory under an array of qualifying events, such as physical attacks, cyberattacks, earthquakes and severe weather.

The Federal Energy Regulatory Commission granted approval to Grid Assurance in 2016, paving the way for utilities to begin subscribing to the service and establishing a process for recovering costs after a qualifying event occurs. This service complements the Edison Electric Institute's (EEI) Spare Transformer Equipment Program, which provides companies with transformers of certain voltages after a presidential declaration of a national emergency caused by terrorism.

The Pace of Progress

We are moving in exciting and challenging directions to improve the customer experience, deploy new technologies, and leverage our industry's expertise in operating the electric system. We have a lot to be proud of and much more opportunity ahead. We are continually challenged as technology advancements and changes to consumer expectations converge with policy and regulatory reforms.

The next transformation in our industry is likely to come in the regulatory arena, where federal and state regulators struggle to keep pace with the rapid innovation that is propelling the industry forward. Today, as customers take advantage of subsidies, self-generate their electricity, engage in energy efficiency activities, expect unique solutions based on their own use and profile, and, in some cases, sell power back to the grid, regulations must evolve to keep pace.

The role of the regulator is not to pick winners and losers; rather, it is entrusted with protecting the public interest and maintaining reliability of the grid. Today, customer empowerment in the digital age means more choices and competition, making the task of regulation more complex.

We do not expect, nor do we seek, a one-size-fits-all solution, but in general, the process needs to be fair to all customers, recognize the value of clean energy to customers (even if it is not the least-cost choice), and protect the reliability and security of the energy grid. And it needs to move faster if we are going to achieve the level of energy and cost savings we know to be possible. We are talking to and working with regulators and policymakers in our states and in Washington, D.C., to help ensure a regulatory transition that meets these goals.

An Exciting Future

At AEP, we are proud to have a role in shaping the future of our business and our industry. We are committed to creating a smarter, more secure grid; developing new products and solutions that enhance the customer experience; and leveraging the ingenuity of our employees to reinvent what the next-generation energy company looks like and how we operate. We'll do this while staying true to our core commitment to providing the safe, reliable and increasingly clean electricity that is the backbone of our nation's economy and powers our customers' daily lives.

As my year-long tenure as chairman of the Edison Electric Institute draws to a close in June, I am grateful for having had the opportunity to lead our industry during this exciting time. We are showing the world that our industry has the expertise to operate the largest machine – the electric power grid – and that we are best qualified to lead the transition to a clean energy future.

Finally, I want to recognize the men and women of AEP. They have the talent, ingenuity, innovative capacity and agility we need to succeed and our values will guide us. Together, we will work hard to shape the future and position AEP to excel as it unfolds. As we do so, we will continue to engage our stakeholders and leverage our experience to boldly transform AEP. I invite you to join us on this exciting journey.

Thank you,

A handwritten signature in black ink, appearing to read "Nicholas K. Akins". The signature is fluid and cursive, written in a professional style.

Nicholas K. Akins
Chairman, President & Chief Executive Officer
American Electric Power

Enterprise Risk Management

AEP is faced with an array of risks, many of them well understood and controlled, while others are emerging and not yet well defined. Our effectiveness at managing risk helps us to identify and prepare for new opportunities, ensure regulatory compliance, drive profitability and growth, and encourage controlled risk-taking in innovative investments.

Our enterprise risk management process continuously evaluates our level of acceptable risk based on internal targets and guidelines, the external environment and operating conditions. Good risk management reduces risk and, in the long-term, lowers costs to serve customers by allowing us to focus resources to improve reliability and reduce the length of customer outages.

One way we are managing risk is through our new Transmission Asset Health Center, which allows us to prioritize our assets from highest to lowest risk of equipment failure. This ranking gives us the information we need to be proactive, minimizing potential impacts to customers.

As part of our risk management and strategic planning processes, we can improve reliability, reduce financial uncertainty and better communicate our operational decision-making to stakeholders. We use an assortment of tools to identify and quantify risks. For example, our commercial compliance program provides mandatory compliance training for commercial trading functions as well as surveillance and monitoring of transactions. This tool helps mitigate the risks of a potential violation of regulations, including those issued by the Federal Energy Regulatory Commission and the Commodity Futures Trading Commission. By embedding risk management into business units and functions, we can better manage regulatory expectations while improving business results.

An area of emerging concern is the potential for significant policy changes in other states to cascade to our states and disrupt AEP's business. For example, the New York Public Utility Commission's "Reforming Energy Vision" proposal would significantly reduce the role of the utility, including restructuring the New York distribution system's rate-making, system efficiency, resource diversity, reliability and resiliency. If such a change were to occur in the states where we operate, it could have a material impact on our financial and operational performance.

AEP expects our relationship with our customers to continue to be valued, as surveys have shown. The convolution of distribution and energy grid investments with customer technology preferences, either generation or usage related, requires the AEP-customer relationship to endure.

We work with our regulators to invest in our system for the benefit of our customers. The regulatory frameworks in our states allow AEP the opportunity to earn a fair return on these investments.

AEP's enterprise risk management is governed by an Enterprise Risk Oversight group, led by our Chief Risk Officer. This group is responsible for developing the collective risk assessment of the company. A Risk Executive Committee makes recommendations to business unit leaders for risk mitigation, where appropriate, and identifies the major risks and material issues on an enterprise wide basis that could impact corporate goals. These are monitored, reported and discussed regularly with the Audit Committee of the Board of Directors.

Carbon Profile Analysis

In an increasingly carbon-constrained world, investors and owners of carbon-intensive assets (such as coal-fueled power plants) are keenly aware of the potential financial risks associated with those assets. More and more, investors – especially those with a focus on social impact investing – are incorporating this risk into their investment analyses and asking operators about risk mitigation strategies. Some of our own investors and other interested stakeholders have been asking these questions of AEP. In response, we are reporting on our risk exposure and risk mitigation strategies, which align with the transformation of our company that is already underway.



In response to new standards for regional haze and mercury, in 2016, Public Service Company of Oklahoma retired Unit 4 at the Northeastern coal-fired plant and retrofitted Unit 3 with new environmental controls.

Following the retirement of coal-fueled generating units in 2015, 54 percent of AEP's generating capacity was from coal and 26 percent from natural gas – both fossil fuels. Today, the focus is on coal because it emits approximately double the carbon dioxide (CO₂) of natural gas. Some investors are especially concerned about the potential impact to their investment portfolios from stranded coal assets – such as a coal plant that loses economic value well ahead of its anticipated useful life.

AEP's exposure to carbon regulation is already greatly reduced compared with five years ago. Between 2011 and mid-2016, AEP retired more than 7,200 megawatts (MW) of coal-fueled generating capacity. These retirements were driven by a number of factors, including environmental regulations. Between 2000 and 2015, AEP's CO₂ emissions have declined 39 percent. This is due to a combination of plant retirements, low natural gas prices that caused coal units to operate less frequently, the addition of renewable generation and slowing load growth.

The typical pricing structure that regulators establish for cost recovery of generating stations is based on the useful life of the plant and is depreciated over time. During the life of the units regulators allow us to collect the investment from customers over time. In this case, several coal units were taken out of service before the end of their useful life. Investors have expressed concern about the financial impact of this to AEP. Under today's regulatory compact, within which we operate, we have been allowed to recover the full value of the units in our regulated utilities when we demonstrate prudence of the investments. In 2015, the remaining net book value of the regulated retired coal units received regulatory approval for cost recovery, except for \$148 million, pending final approval. As additional regulated units are retired, we have and will continue to seek recovery of the remaining net book values of those units. Within our competitive generation business, the net book value of those units was zero.

Additional opportunities associated with reducing carbon include investments to refuel or repower coal units with natural gas or the construction of new combined-cycle natural gas units. AEP has no plans to build new coal plants and is carefully scrutinizing all investments in our existing coal fleet.

Where appropriate, we are working with state utility commissions to shorten the time it takes to recover existing and new plant investments; typically we would recover the costs of these investments over the life of the units. This strategy increases the likelihood of full cost recovery if units are retired early, and recognizes the long-term uncertainty of coal generation in our fleet.

Recent debate and calls for divestment in companies that have coal in their fuel portfolio or derive revenues from coal-related activities (i.e. electricity generation) is not constructive and harmful to investors. There is a major transformation under way in the electric utility industry that is expanding resource diversity and should be appropriately considered in the debate.

AEP has reduced carbon dioxide (CO₂) emissions 39 percent from 2000 levels and we will continue to reduce our carbon footprint as we transition to more renewables and natural gas. AEP's coal-fueled generating capacity has been reduced from 68 percent in 1999 to 50 percent in 2016. Between 2000 and 2016, we will have invested \$8.5 billion in environmental controls. The funding for these investments comes from equity and debt capital from our shareholders and bondholders which is paid for by customers through increased rates.

AEP's investments in transmission also interconnect approximately 7,500 MW of renewable resources across our service territory. AEP's renewable portfolio includes about 3,200 megawatts of wind and solar today (including 59 MW of biomass), and by 2034, with regulatory approval, we will have added approximately another 3,400 MW of solar, 6,300 MW of wind and 3,000 MW of natural gas.

It is our position that those who are interested in emissions reductions, increasing clean energy resources and earning high financial returns can realize these goals by investing in AEP.

Several factors impact carbon asset analysis

- **Risk Factors – policies, regulations, technologies, markets, etc.**
 - Clean Power Plan (CPP) - CO₂ emissions reductions in energy sector.
 - Lack of commercially-viable technology to directly reduce carbon emissions, such as carbon capture and storage (CCS).
 - Depressed coal market caused by low natural gas prices, and cost-competitiveness of renewables.
 - Regulations driving coal out of the energy supply chain affects resource diversity with possible similar efforts aimed at natural gas production.
 - The current and future state of regulation is uncertain.
- **Exposure – to operators of carbon-intensive assets and financial exposure to lenders and investors.**
 - If the CPP is implemented, federal emission guidelines would require states to develop plans to achieve the required emission reductions. These state plans would likely result in

- a carbon trading system that will place a value (cost) on each ton of carbon emitted from affected generating units.
- Lack of technology (such as CCS) could limit the viability of traditional coal generation stations in the long-term, should emission limitations require additional significant reductions.
- Several coal producers have filed for bankruptcy, which may impact future coal supply and lead to industry consolidation.
- Regulations affecting coal production could affect supply and costs.
- **Analysis – how is carbon risk being evaluated?**
 - AEP has been planning for this regulatory possibility for a number of years through the inclusion of a carbon price in its integrated resource planning process. As additional details emerge about how the CPP or other regulations may be implemented, AEP will reassess its carbon price and related planning processes.
 - AEP has assessed the commercial viability of CCS and included carbon regulations within planning processes.
 - AEP continually assesses coal market fundamentals to examine both supply and demand.
- **Management Approach**
 - AEP is focusing its investments on shifting to non-emitting generation, such as large-scale renewables, and will have retired approximately 25 percent of its coal generating fleet by the end of 2016.
 - AEP took an active role in advancing CCS technology through research and development several years ago and has reduced potential exposure through coal unit retirements and asset diversification.
 - AEP actively manages its coal procurement process to ensure a diverse, reliable supply of coal is available at a reasonable cost.
 - Capital expenditures have moved substantially from environmental investments to investments in infrastructure, including transmission.
 - Existing coal plants play a vital role in providing reliable, 24/7 capacity and energy to the power grid. We will continue to responsibly operate these plants to deliver value to our customers and communities.
 - AEP does not foresee construction of new coal plants in the U.S.

Enterprise Security

Today, it is not a matter of if there will be a cyber or physical attack. It is a matter of when. Hackers are more sophisticated and despite companies' best efforts to prevent these incidents, the focus has shifted to managing these risks by improving our defenses. In today's world, we know that anything can happen. How quickly we respond to an event affects our customers, our reputation and the reliability of the power grid. Our approach is to deter, detect, delay and respond if an event occurs.

In 2015, AEP created the position of Chief Security Officer (CSO) to strengthen AEP's governance of enterprise security and ensure greater coordination of efforts, use of financial and operational resources, compliance with regulations and employee awareness. The CSO reports to the Chief Operating Officer.

We believe that the best security program we can have for the electric power grid is to maintain a resilient grid. We need to be prepared when incidents occur so that business can continue and we can protect the reliability of the grid. Where our focus was once directed primarily on prevention, today we are increasingly focused on how we respond when an incident does occur. One way we are doing this is the adoption of the nationally-known Incident Command System (ICS) for disaster preparedness and responsiveness. Used by the military, government agencies and other energy companies, ICS provides a consistent and proven crisis response platform to support business continuity and underpins AEP's emergency restoration plan. ICS is being integrated into business continuity plans across AEP.



Another line of defense for AEP and the electric power industry is having a national inventory and access to critical spare parts for the power system. [Grid Assurance™](#), an industry initiative led by AEP and several other companies, addresses vulnerabilities in the nation's grid that were emphasized in a U.S. Department of Energy (DOE) report. In it, the DOE cited current grid protections as potentially inadequate "to address the security and reliability concerns associated with simultaneous failures of multiple high-voltage transformers."

Grid Assurance will expedite responses to major events that damage the power grid – naturally or intentionally – by providing transmission-owning subscribers faster access to vital spare transmission equipment. This equipment, such as transformers and circuit breakers for substations, often requires lengthy production and delivery lead times. The expansion of existing inventory of spare equipment in the United States is important to assuring the resiliency of the nation's electric grid.

Grid Assurance services will complement the [Edison Electric Institute's](#) existing Spare Transformer Equipment Program (STEP), which can provide utilities access to transformers after a presidential declaration of a national emergency caused by terrorism. Grid Assurance will offer subscribers equipment (transformers, circuit breakers and other items) from an inventory that will meet their needs after a broader spectrum of qualifying events. In March 2016, Grid Assurance received approval from the [Federal Energy Regulatory Commission](#) (FERC) to move forward.

Planning for the unknown is difficult at best. But the stakes are high and the potential threat has led to new standards for cyber and physical security of the grid from the [North American Electric Reliability Corporation](#) (NERC). The next major revision of the NERC Critical Infrastructure Protection (CIP) Standards becomes effective July 1, 2016. The new Standard expands protections against physical and cyber-attacks on the power grid. AEP hosted its second NERC Reliability & Compliance summit in April 2016, bringing together executives from AEP, NERC and Regional Entities to which we belong, to focus on the evolving reliability/security regulatory environment and strategies to keep AEP's compliance program in sync with the changes.

In July 2015, FERC approved a new physical security reliability standard (CIP-014), requiring owners and operators of transmission facilities to protect critical transmission substations and control centers whose damage by physical attack could threaten reliability of the system. In response, AEP classified its substations into tiers based on the critical nature of the equipment to determine the level of security needed. This tiered approach allows us to design security controls directly in to new infrastructure from the start, building the costs into capital projects as needed. It is a measured approach that allows us to be more proactive with existing and new infrastructure while balancing risk and cost.

AEP has designed a Security Awareness Training program for all employees covering physical and cybersecurity risks. The training is updated periodically to meet emerging cyber and physical threats and it places a shared responsibility for security with employees and the company.

We are also pushing cyber security deeper into the supply chain. We are working with our vendors to determine the level of security they have in place to understand and identify areas of vulnerability. We use surveys, questionnaires and other assessment tools to evaluate the risk they pose to AEP before we sign a contract. This approach allows our business units to better understand the risks so they can make more informed decisions about the level of risk they are willing to assume.

Business Continuity

Companies – especially those engaged in critical infrastructure – must prepare detailed plans for continued operation following a crisis that diminishes their ability to function. Staffing, physical infrastructure and information systems are at risk in such scenarios.

AEP's business continuity program is a partnership between our corporate business continuity team, business units and other support organizations. Together, we build plans to allow for an effective recovery effort in the event of a disaster. The plans are designed to minimize business disruptions by decreasing response times, limiting financial impacts and maintaining customer confidence during a business interruption. We employ many types of planning, including:

- Recovery of critical business processes such as staffing, alternate work locations, and essential tasks.
- Recovery of information systems and technologies required to support critical business processes following a disaster.

- Crisis management planning for command, control, coordination and communication as we respond to a crisis, emergency or major disruptive incident that affects AEP locations, staff or stakeholders.

This planning process was critical following a series of underground distribution network disruptions in 2014 that exposed risks to the security and availability of our data and IT infrastructure, and raised our awareness of the need to be ready for new risks in the future. We view business continuity in terms of risk, resiliency and response, and we plan accordingly.

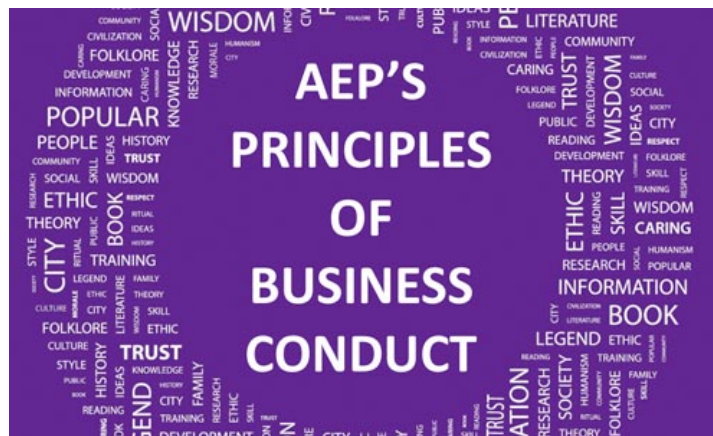
In addition to launching a four-year plan to upgrade and enhance AEP’s 16 underground distribution networks, we built a new Tier III data center that came online in 2015. Tier III data centers are important because they do not require shutdowns for equipment replacement and maintenance. In April 2016, AEP was recognized by Data Center Dynamics (DCD) as a winner of the 2016 DCD U.S. & Canada Awards for innovation and leadership in the development of the new data center.

Plans are under way for another data center to reinforce our disaster recovery efforts in the unlikely event that a regional disaster would occur, giving us redundancies that are critical when in recovery mode.

Ethics & Compliance

At AEP, we are guided by high standards of ethics and compliance. Our employees strongly believe we are committed to health, safety and environmental compliance, and that it is unacceptable to bend the rules to get the job done. AEP’s Board of Directors, management and every employee are guided by [principles of business conduct](#) and are held accountable for maintaining the highest level of ethical behavior.

We encourage employees to speak up when they see something that falls short of these expectations. If employees are unwilling to report an ethics or compliance violation because of fear of retaliation, our corporate culture, our reputation and the financial health of the company are at risk. We maintain a confidential 24/7 hotline that allows employees to report concerns anonymously or to seek guidance on ethical, safety or compliance issues.



We also provide annual, mandatory training to all employees on the Principles of Business Conduct. This training includes evaluation of several distinct scenarios in some of our higher risk areas – including conflicts of interest, misuse of company assets, management of personally identifiable information, and our anti-retaliation policy – which helps our employees consider the Principles in the

context of “real world” risks that might arise in their day-to-day job duties. Significant portions of our employee population also receive regular compliance training on the federal and state codes of conduct that govern our business activities.

Lobbying & Political Contributions

The electric utility industry is undergoing a fundamental transformation driven by a number of factors, including new regulations and public policies. For the benefit of all stakeholders, we actively participate in the political process and in lobbying activities at the national, state and local levels.

The investments needed to modernize the power grid are in the billions of dollars and the stakes have never been higher. To understand the policies and regulations that could affect our business, we participate in a number of organizations, lobby on our customers’ behalf and contribute to political candidates.

Each year, AEP publicly discloses [lobbying activities](#) and [political contributions](#). We also annually report on the portion of membership dues from organizations, such as the BRT and EEI, that go toward lobbying. We post our [lobbying policy](#) online and we have a process in place whereby information regarding political contributions is reviewed annually by AEP’s Board of Directors.

LOBBYING BY THE NUMBERS – 2015



We maintain five PACs that are run by our employees (one federal and four state PACs)



Contributions to candidates for public office



\$5.9 million
internal and external lobbying expenses



Approximately **26%** of eligible AEP employees participate in the federal PAC

Trade Groups

Among the organizations we are actively engaged with are the Business Roundtable (BRT), where our Chairman, President and CEO, Nick Akins, chairs the Energy and Environment Committee, as well as the Edison Electric Institute (EEI) where he is completing a one-year term as chair. We engage in these activities to stay current on issues, learn best practices and advocate on behalf of our customers, employees and shareholders.

We have been asked by stakeholders why we belong to some organizations whose positions may conflict with AEP's. In general, we believe it is better to be at the table and engaged in the discussion, whether we are in total agreement or not. When we disagree, we voice our concerns and work to change the position. Sometimes we prevail and sometimes we do not, but we strive to reach an appropriate position, based on the facts available. In addition, many of our customers belong to these organizations and this helps us understand their concerns and needs.

We believe in transparency and active participation in public debate. Our experience is that open, candid discussion and a good-faith attempt to reach common ground is the best way to do business.

Stakeholder Engagement

Our ability to make informed decisions relies on the strength of the relationships we have with our many different stakeholders. To AEP, stakeholder engagement is a business imperative.

During the last decade, we have cultivated a commitment to engagement and transparency by being accessible, responsive, honest and open with those with whom we engage. We seek to foster healthy, trusting relationships that turn conflict into cooperation and, ultimately, into partnership. In 2015, we made progress toward this objective and laid out a plan to expand our engagement efforts in 2016.

Stakeholder engagement in 2015 was largely dominated by carbon, specifically the Clean Power Plan (CPP), and the evolving utility business model. AEP held several meetings with four environmental groups – Natural Resources Defense Council, Environmental Defense Fund, Sierra Club and Clean Air Task Force – over the potential impacts of the CPP to the grid. Although we disagreed on some aspects of the rule, we agreed to try to identify opportunities to work together that would benefit the states we serve as they determine their compliance strategies.

For example, we agreed that renewable energy, energy efficiency and grid modernization initiatives will be critical for the future, regardless of what happens with the CPP. As AEP diversifies its energy portfolio, we will be looking for opportunities to work together to seek state commission support for utility investments in options such as universal solar projects that broaden access to renewable energy to more customers.

In 2015, we saw increased investor interest in AEP's evolving business model in a low-carbon, high-tech world. This report reflects extensive discussion with some AEP investors to address their concerns about our ability to sustainably grow earnings in the future as more customers seek to self-generate their electricity. They also wanted to know more about the impact of technologies and new regulations that can potentially affect AEP's long-term growth. For example, we discussed our carbon profile including how we factor carbon into our capital investment strategy. AEP's Board of Directors approves the capital investment plan, which maps to AEP's strategy of being a less carbon-intensive company in the future.

In response to investor discussions, we are providing a detailed view – as best we can – of the opportunities and risks, our strategy for growth and our plan for achievement. Sections of AEP's 2015

[Form 10-K](#) were enhanced to reflect these investor discussions and provide a clearer picture of the transformation we are undergoing.

In 2015, Mark McCullough, executive vice president – Generation, took the lead as AEP’s executive champion of stakeholder engagement. To ensure continuity and deepen our relationships, we began meeting one-on-one with the stakeholder groups. This will continue in 2016. In addition, we have begun to implement a plan to increase our outreach to social impact investors and expand the circle of non-governmental organizations (NGOs) with whom we engage. Our experience is that transparency and open, honest communications are important to building trusting relationships, eliminating misperceptions and increasing awareness and understanding of AEP’s transformation.



Another avenue of stakeholder engagement occurs in our [integrated resource planning](#) (IRP) process. Most of our states have formal stakeholder processes for developing these resource plans, while others are more informal. In all cases, the intent is to be inclusive, listen to stakeholder ideas and concerns, answer their questions and consider their input as we develop resource plans for our jurisdictions.

In Indiana, Arkansas and Louisiana, for example, the stakeholder process is formalized and includes representatives from customer groups, various industry groups, environmental groups and others. In these states, we share the IRP with the stakeholders before filing it with the state utility commission. In

other states, such as Oklahoma, Kentucky, Virginia and West Virginia, the engagement process is less iterative but there are clear communication pathways before and during the process of developing and approving IRPs for those states. While each process is unique, it is still based on the principles of engagement and transparency.

Our stakeholder engagement efforts include our employees. Learn More: [How we engage our employees](#)

About This Report

AEP is proud to share with you our 2016 Corporate Accountability Report. This is AEP's seventh integrated report and our 10th year of reporting our overall performance. This web-based report includes significant data and information about AEP's performance that is largely based on calendar year 2015, unless otherwise noted.

In addition to reporting on 2015 performance and showing three- to five-year performance trends, this report offers insight into AEP's transformation as it evolves its business model. We increased our use of photos, charts and infographics to help tell our story.

AEP's report follows the GRI G4 guidelines for data quality, report content and organizational boundaries. We also report according to GRI's Electric Utility Sector Supplement. In developing our report, we consider the principles set forth by the International Integrated Reporting Council (IIRC) and the proposed Sustainability Accounting Standards Board (SASB) standards for our sector. However, we believe there is no one-size-fits-all approach to voluntary reporting so we adapt them as appropriate to demonstrate we are directionally in concurrence.

Audit Statement

AEP Audit Services performed a limited review of company performance statements contained within the 2016 AEP Corporate Accountability Report. Financial information was reconciled with AEP's audited financial statements, if applicable, or to such other sources as deemed appropriate. Selected processes used in accumulating the significant nonfinancial data were reviewed and the associated data reconciled to the sources(s). The appropriateness of the context in which data are presented was also reviewed. Finally, forward-looking information was verified as consistent with other public information disclosed by AEP. Based upon our review, we believe the performance information contained within the Report is appropriately stated, and that the processes followed in accumulating both the financial and nonfinancial information are reasonable.



Andrew B. Reis
Vice President, Audit Services
May 16, 2016

Statement of AEP's Board of Directors

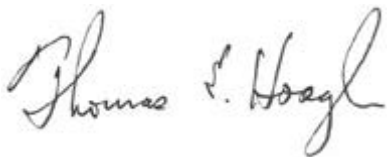
The [AEP Board of Directors](#) has assigned responsibility for overseeing the company's sustainability initiatives to the Board's Committee on Directors and Corporate Governance. This report marks the 10th year that AEP has provided a comprehensive account of its performance, integrating financial with sustainability reporting. The Committee fully supports this approach. Stakeholders have expressed approval and appreciation for AEP's leadership with this integrated approach to corporate reporting.

Throughout the year, the Committee and company management reviewed the company's sustainability objectives, challenges, targets and progress. The Committee reviewed and discussed the final text of this report before its adoption of a formal resolution approving the report.

The 2016 Corporate Accountability Report reflects robust disclosure about AEP's 2015 performance as well as the company's strategy and vision for the future. AEP's changing business model, its transition to a clean energy future, and its plan for future growth are discussed to provide clarity about the transformation of the company and the industry. AEP management had numerous discussions with multiple investors, large and small, and agreed to additional disclosure to address these issues. AEP is committed to being transparent, candid and open about its business, and this report is a reflection of that commitment.

The AEP Board of Directors receives frequent reports from management about the company's sustainability initiatives and financial reporting and economic performance. These issues are the subject of active discussion at Board meetings and Board committee meetings.

The Committee believes this document is a reasonable and clear presentation of the company's plans and of its environmental, social and financial performance. The Board has emphasized that management will continue to be evaluated by its success in executing the company's strategic plan to meet stakeholders' and the Board's expectations, including being agile in responding to changing circumstances while respecting the commitments in this report.



Thomas E. Hoaglin
Lead Director of the AEP Board of Directors
May 2016

Sustainability Governance

As the demand for transparency and public disclosure continues to grow, so do AEP's efforts around sustainability and performance reporting. AEP's Corporate Accountability Report is used to communicate and respond to stakeholder concerns, manage shareholder engagement, drive performance, and recruit and retain employees - while proactively telling AEP's story. AEP's report has evolved from

what was once a past performance-based environmental report into a more future-focused integrated report – tying our financial performance to our environmental, social and governance performance to show linkage with AEP’s business strategy.

In 2015, AEP implemented a governance structure around corporate sustainability through the creation of an internal Enterprise Sustainability Council. Co-chaired by representatives from the Corporate Sustainability and Ethics and Compliance departments, the Council consists of some of the top leaders and decision-makers from across the company.

Nick Akins, chairman, president and CEO; David Feinberg, executive vice president, general counsel and corporate secretary; and Lana Hillebrand, senior vice president and chief administrative officer, serve as executive sponsors.



The Council established the following goals and objectives:

- Ensure activities and decisions, including performance reporting align with our strategic plan and business objectives.
- Serve as champions of AEP’s sustainability initiatives – seek opportunities to link sustainability with culture, values, business performance and material issues.
- Share work, best practices, and ideas to identify potential risks/opportunities and emerging issues/trends and collaborate in developing solutions and sustainability goals/objectives.
- Manage disclosure to achieve the right balance compatible with AEP’s commitment to transparency, materiality and aligns with reporting guidelines.
- Accountability for accuracy of the information disclosed.

The Council provides a forum for key decision-makers to come together, and reflects the maturity of sustainability and the reporting process at AEP. It has become embedded in AEP’s business strategy, supporting our culture initiatives of strategic alignment and employee engagement, as well as, our continuous improvement efforts. The Council also reflects AEP’s commitment to sustainability reporting -- addressing stakeholder concerns by telling our balanced, accurate and complete story.

Global Reporting Initiative

This report was primarily developed according to the [Global Reporting Initiative](#) (GRI) Sustainability Reporting Guidelines Version 4 (G4). The GRI guidelines provide a voluntary reporting framework used by organizations around the world as the basis for sustainability reporting. We are using the G4 standards, as well as the Electric Utility Sector Supplement for reporting on industry-specific information.



[View AEP’s 2016 GRI-G4 Report.](#)

Carbon Disclosure Project

As a pillar of the company's commitment to social responsibility, AEP places high value and priority on transparency in our actions. By responding to the Carbon Disclosure Project (CDP) survey(s), AEP recognizes the importance of our disclosure and our commitment to the interests of our stakeholders. This is AEP's eighth year responding to CDP.

CDP is an international, not-for-profit organization providing the only global system for companies and cities to measure, disclose, manage and share vital environmental information. They work with market forces to motivate companies to disclose their impacts on the environment and natural resources and take action to reduce them. CDP now holds the largest collection globally of primary climate change, water and forest-risk information and puts these insights at the heart of strategic business, investment and policy decisions.

- [Carbon Disclosure Project - AEP's 2016 Response](#) (PDF)
- [CDP Water Disclosure Project - AEP's 2016 Response](#) (PDF)
- [CDP Supply Chain Disclosure Project - AEP's 2015 Response](#) (PDF)

Coal Supplier Survey

America's energy future will no doubt contain a greater diversity of energy sources but coal will continue to be the foundation of that resource base for the foreseeable future. At the same time, the life cycle of coal is of great concern to many of our stakeholders – from mining practices and combustion for energy production to disposal of coal combustion byproducts. Through our stakeholder engagement process AEP committed to annually survey our coal suppliers to assess their environmental, safety and health performance.

The purpose of this survey is to collect information about where and how our suppliers source their coal that AEP purchases and to collect data on their overall performance in the areas of safety, health and environmental compliance. This company-specific data will not be shared publicly but will be used by AEP to help us analyze and identify best practices and begin to understand some of the social ramifications of the electric and coal industries.

This resource site provides information for our suppliers about the survey, including links to the [Global Reporting Initiative's Mining and Metals Sector Supplement](#) (MMSS). Several performance indicators from the MMSS are included in our survey. Our commitment to transparency includes making the aggregated final report and analysis public by posting it to the web.

- [2014 Coal Supplier Survey Final Report](#) (pdf)
- [2013 Coal Supplier Survey Final Report](#) (pdf)
- [2011 Coal Supplier Survey Final Report](#) (pdf)
- [2010 Coal Supplier Survey Final Report](#) (pdf)
- [2009 Coal Supplier Survey Final Report](#) (pdf)
- [GRI Mining and Metals Sector Supplement – Supplier Matrix](#) (pdf)

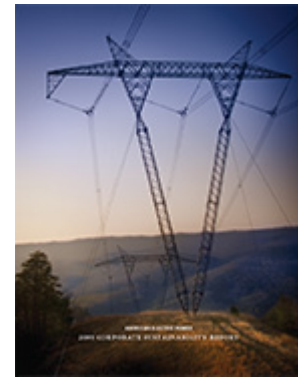
Past Reports



2015



2012



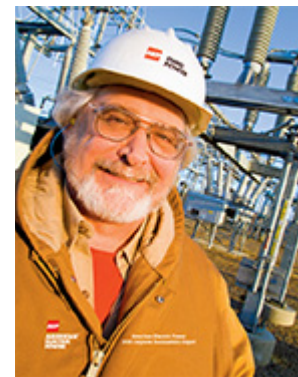
2009



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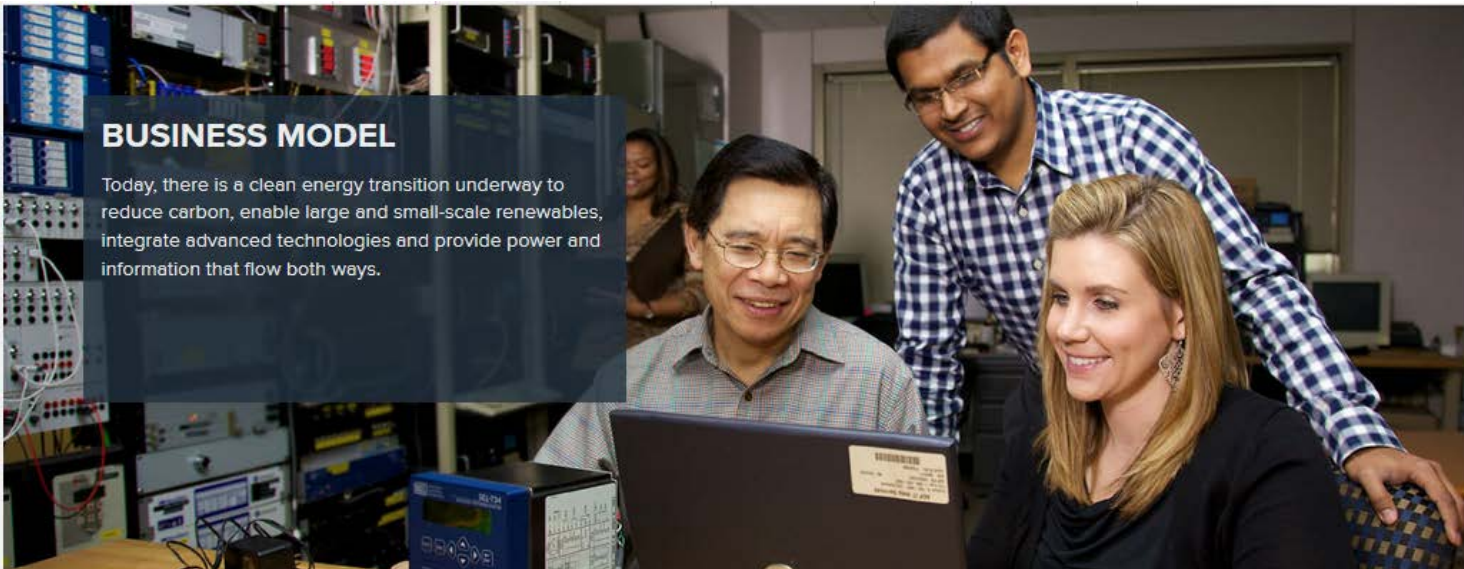
2013



2010



2006



BUSINESS MODEL

Today, there is a clean energy transition underway to reduce carbon, enable large and small-scale renewables, integrate advanced technologies and provide power and information that flow both ways.

[Home](#) | BUSINESS MODEL

CUSTOMER EXPERIENCE

Technology is giving customers options and tools to make choices that are based on their values, as much as on cost. We have to respond to dynamic and changing customer needs and do it as well as the best competitive consumer products companies.

[LEARN MORE >](#)



AEP's

STRATEGY EVOLUTION



TRANSFORMING THE FUTURE

AEP's strategy for growth is focused on our approach to investing capital and a commitment to continuous improvement that benefits our customers and shareholders. Infrastructure development is central to our growth strategy, but the focus is on how the system responds to and meets customer demand; we are transforming our system to become the solutions-oriented energy provider of choice for our customers.

[VIEW THE FULL STRATEGY >](#)



TECHNOLOGY & INNOVATION

AEP is developing strategies and investing in technology to be the next-generation energy company.



SUSTAINABLE ELECTRICITY

The power grid of the future will need a diverse resource mix to provide all customers access to safe, reliable and cost-effective electricity.

Today's Environment

AEP's transformation - to adapt the legacy energy system to become a smarter, resource-diverse power grid that is reliable, secure and modern - reflects the transition happening across our industry.

For 110 years, we have thought about our business in terms of generation, transmission and distribution – a one-directional flow of power and information to customers. That's how the electric utility system was originally designed and the prudence of those decisions and customer rates were determined by regulators to support that structure.

Today, there is a clean energy transition under way to reduce carbon, enable large- and small-scale renewables, integrate advanced technologies and provide power and information that flow both ways. In addition, technology plays an important role in energy efficiency because it makes the system more efficient, helps consumers manage their energy usage, lowers cost for customers and AEP, and helps to reduce emissions. As we embrace these changes, we also need to define the rules and policies that govern our industry, enabling us to be responsive to customers' needs.

Among the catalysts for change:

- Technology advancements
- Increasing demand for clean energy
- Customer attitudes
- Commodity prices
- Environmental regulations
- Competitors' actions
- Public policies
- Declining cost curves

To meet these challenges, we are developing new partnerships and building on established relationships with our customers. Our goal is to make the customer experience unique, while providing access to the power grid and its services to all customers. In the process, we are reinventing ourselves by focusing on customers,

COMPANY OVERVIEW 2015

American Electric Power has been providing electric service for more than 110 years and is one of the nation's largest electric utilities.

| | 2015 |
|---|------------------------|
| Regulated Customers (approximate, year-end in millions) | 5.4 |
| Competitive Customers (approximate, year-end) | 375,000 |
| Employees | 17,405 |
| GAAP Revenues (millions) | \$16,453 |
| GAAP Earnings (millions) | \$2,047 |
| GAAP Earnings Per Share | \$4.17 |
| Operating Earnings (millions) | \$1,808 |
| Operating Earnings Per Share | \$3.69 |
| Cash Dividends Per Share | \$2.15 |
| Service Territory (square miles) | 200,000 |
| Transmission (miles) | 40,000 |
| 765-kV Lines (miles) | 2,114 |
| Distribution (miles) | 224,000 |
| Generating Capacity | 32,000 MW ¹ |
| Generating Units | 179 ² |
| Renewable Portfolio (hydro) | 285 MW ³ |
| Pumped Storage | 586 MW ⁴ |
| Regulated Renewable Portfolio (wind, solar) | 2,193 MW ⁵ |
| Total Kilowatt-hour Sales (millions) | 195,755 ⁶ |
| Rail Cars | 4,858 |
| Barges | 498 |
| Towboats | 12 |
| Harbor Boats | 8 |
| Total Assets (millions) | \$61,683 |

resources and technologies of the future, being disciplined in our allocation of capital and fostering a customer-centric culture of innovation and operational excellence.

Our investment strategy is shifting from being compliance-driven to optimizing the system for efficiency and operational excellence, diversifying our resource portfolio to reduce environmental impact and investing in infrastructure that delivers positive value to our customers and investors.

This transformation presents new opportunities for growth but also carries a degree of risk and responsibility. We are engaging in discussions with policymakers, regulators, customers, investors and stakeholders about how we are evolving and how they can support our efforts.

Customer Experience & Expectations

Technology is giving customers options and tools to make choices based on their values, as much as on cost. While we are primarily a regulated energy company, we have to respond to dynamic and changing customer needs and do it as well as the best competitive consumer products companies.

Customer Expectations

To understand what customers want from their energy company is, in some ways, to understand Millennials. In 2015, Millennials made up more than 50 percent of the American work force. By 2025, it is estimated that number will climb to 75 percent. They are already our employees and our customers. They are digitally savvy, socially conscious, always connected and willing to share, and they want information immediately, conveniently and at a low cost. Millennials are instrumental in helping us to reshape the customer experience.



The conveniences we get from technology make life easier, allow us to conduct business at any time, and give us portability and mobility. Customers want the same interactive experience with AEP – personal, online, mobile, in “the cloud,” and securely delivered to their newest mobile device. It also has to be simple, fast and provide value – something that is as individual as customers themselves.

¹ Does not include Ohio Valley Electric Corporation (OVEC), Indiana-Kentucky Electric Corporation (IKEC) or Power Purchase Agreements.

² Includes facilities jointly owned with other utilities, hydro and two AEP-owned wind farms.

³ Nameplate capacity, excludes pumped storage. Regulated and competitive.

⁴ Nominal capacity.

⁵ Wind and solar contracts that are in service (nameplate capacity) and delivering energy in 2015; some current year Renewable Energy Credits (RECs) are sold and/or replaced with other RECs so claims to renewable benefits are reduced accordingly.

⁶ Includes Vertically Integrated and Transmission and Distribution Utilities.

Our challenge is to be innovative in the products we offer to our customers and help to transform the regulatory process, public policies and pricing plans that enable change at the same speed that technology and customer demands are changing. We have much work to do before we can claim success, but it is a journey to which we are committed.

AEP is investing in its people and infrastructure to deliver on our customer promise. We are developing short- and long-term strategies and plans to deploy new technologies that enable customers to access the information they need, when they need it and through their platform of choice – on their phone, tablet, website or through a customer contact center.

In 2015, we began a three-year project to install new customer contact center technology which would enable us to work across multiple platforms to serve customers. For example, a single contact center agent could respond to email, phone calls, text messages and social media, and manage online chat sessions. The new system has been planned for 2018. In preparation, we are developing work force training plans to give our employees new problem resolution skills, empowering them to give every customer a positive experience. This is part of our culture change at AEP.

It is important to understand that this dynamic is playing out across the electric utility industry. The pace of change is moving more quickly in some parts of the country, slower in others.

AEP's ultimate goal is to be the preferred energy services provider for our customers. We began laying the foundation for this with our gridSMART® initiative nearly a decade ago, gaining valuable experience with new technology applications on the distribution grid. Those applications have improved operational efficiency, outage prevention and restoration, and provided diagnostic capabilities to identify equipment problems before they become service disruptions. It is this smart grid foundation that enables the technologies that customers want today.

However, technology is only part of the equation. We need a strong customer-centric culture, too. Our recent employee culture surveys tell us that our employees are committed to our customers. Our culture transformation journey is helping us understand how we can improve the customer experience.

Big Data & Analytics

Imagine knowing your customers well enough that you could develop products and services that fit their specific needs, encouraging innovation, and delivering what customers want. Feedback from customers tells us we need to do a better job communicating with them, both in the content we send and the channels through which we send it.

As we learn more about our customers, we can better understand their needs and preferences and target communications accordingly, resulting in more effective customer service, increased customer empowerment and improved customer satisfaction. That is the power of big data and analytics – the new frontier in understanding and improving the customer experience. In 2016, AEP will build an internal team to enhance our knowledge and experience with big data and analytics.

Data-gathering Infrastructure

Today, AEP's smart grid technology is at the forefront of providing us with robust and frequent information, using smart meters, communications networks and data management systems. Smart grid technologies empower customers to use energy more efficiently and manage costs. The data collected also helps AEP to customize programs and services for customers. Smart meters were initially used to automate meter reading, improve bill accuracy and to manage physical assets, people and outages.

Today, we are learning how additional analytics, based on this data, can help us predict equipment failure so we can proactively take action to prevent an outage from occurring. For example, we are using an analytic that can identify when specific distribution transformers are on the brink of failure, allowing us to fix or replace them before an outage occurs.

Other analyses help us identify meter configuration errors, potential meter failures and meter connection issues based upon the internal temperature of the meter. They also help us to identify and prevent energy theft – a public safety concern and a threat to our revenues. And, we are exploring how analytics can help us improve our interactions with customers, such as improving the accuracy of the outage information we give customers if the lights go out.

Big Data Olympics

To improve our interactions with customers and their experience with us, we need to better understand their preferences and expectations. In 2015, our customer service organization launched an initiative to build a comprehensive, 360-degree view of our customers. Using a broad set of information about our customers from many sources, we looked at an array of things including usage and payment history, website visits, mobile alert history, call center activity, program participation information, outage data and demographic information. We tested several hypotheses to improve our understanding of customers, including proactive communications, improved call center services and performance, and broader adoption of existing payment, savings and energy management programs. We called this project the Big Data Olympics.

The results were eye-opening and led to further discussions and exploration of additional analytics to help drive improved customer web experiences and better target marketing and advertising campaigns. In addition, our call center managers found the data helpful to address the needs of repeat callers. The analysis found the majority of repeat calls were coming from one customer segment; additional analysis will help us develop solutions that will reduce the number of repeat callers.

Having a more comprehensive view of our customers will allow our companies to design better products, services and outreach programs. And, it will help us have more meaningful conversations with customers about how we balance our capital investments to meet the objectives of the communities we serve.

The Big Data Olympics also included a case study to develop a work force optimization model to help us improve our ability to forecast future workloads and optimally assign the work to employee and

contract crews, balancing cost and work efficiency with customer needs. We used historical data to generate a forecast and optimization software to determine the best way to do certain jobs, based on the type of work, cost profile and geography.

We learned there are potential opportunities that not only achieve significant cost savings but allow us to dedicate more resources to priorities that directly impact customers' experience. We believe this will increase customer satisfaction in the long run, as well as increase employee engagement and satisfaction.

As we increasingly begin to use data to better understand, communicate with and serve our customers, it is important to recognize that data privacy remains a critical priority for AEP and our industry. We continuously work to protect the confidentiality of customer information and to prevent unauthorized use. Because of the substantial investment in cyber-related defenses by AEP to defend its critical systems, we believe AEP customers should be confident in the security of data and information.



In 2015, our customer service organization launched an initiative called Big Data Olympics where we used a broad set of information about our customers, such as: usage and payment history, website visits, mobile alert history, call center activity, program participation information and outage data - to help us better understand their preferences and expectations.

Knowledge-Building

Applying big data concepts and analytics to better manage our business and serve our customers requires a major shift in how we think and a technical skill set that we need to develop. We need to better understand how to deliver greater value to our customers.

Through the use of analytics, our 2016 goals are to:

- Determine how to better serve and market to our customers
- Sustain continuous improvements to ensure we have the resources we need
- Improve reliability and reduce risk for customers and AEP
- Expand Big Data Olympics to other business units
- Begin to build a data and analytics foundation for AEP as we transition to the next-generation energy company

As we build in-house knowledge of data analytics, we know it will take at least two to three years to achieve the skill level and experience we need. We have established an enterprise analytics services team and a customer and grid analytics team, pairing the knowledge and expertise of our Information

Technology team with that of our Customer & Distribution Services group. As we develop our own internal talent and infrastructure, we will work with partners, including IBM and others, to fill in the gaps until we get there.

This is an emerging field that creates new job opportunities for the future. The biggest challenge we face is a shortage of talent with the right technical and analytical skills needed for this type of work. According to the McKinsey Global Institute, the “demand for deep analytical talent in the United States could be 50 percent to 60 percent greater than its supply by 2018.” We need a plan to attract the best talent because we will be competing with high-tech companies, such as Google and Apple.

[Learn more about workforce planning](#)

Customer Care

Different types of customers want and need diverse things from AEP. As we learn more about our residential customers, we are also working with our commercial and industrial customers to serve their needs. These customers need efficient energy management strategies that can be integrated into facilities nationwide. AEP is dedicated to providing a level of service that exceeds customer expectations and we are constantly thinking of new ways to meet their needs.



Market competition forces companies to be quick and agile. If we are not, the price is high. If we are not providing excellent service, our customers will leave us, which is costly. Enhancing the customer experience requires us to have people and processes in place to retain and grow our customer base.

Understanding customers’ needs can lead to new business opportunities. AEP’s new OnSite Partners, a subsidiary of AEP Energy, was conceived by talking to our customers. We learned that large commercial and industrial customers wanted customized energy solutions that are more reliable, localized and environmentally sustainable.

OnSite Partners was created with that in mind – to provide solutions based on market knowledge, technology innovations and deal structuring. This could include distributed solar, wind, combined heat and power, energy storage, energy efficiency, peaking generation and other forms of cost-reducing energy technologies.

Often, customers don’t think of the traditional regulated power company as being nimble because of long lead times needed for big, new projects. AEP is turning to its employees to find solutions, even when that means reconfiguring products and services to help large customers connect to the grid more quickly. This is especially important to oil and gas customers, who need large amounts of electricity in remote locations.

For example, AEP’s transmission team continues to use skid-mounted substations that tap into existing transmission lines near the business sites, providing a reliable, interim solution until the grid is

expanded. This allows us to serve a large customer within a few months, compared with the average of 18 months to build a new station. This employee-developed solution is a competitive advantage for AEP and allows us to be more responsive to customers.

Skid Mounted Stations

Benefits

- Flexible, modular design speeds up construction.
- Quick installation.
- Wide range of voltage capabilities (4kV to 34.5 kV) meets varying customer needs.
- Speeds AEP customer service as well as AEP revenue stream.
- Environmentally friendly option for initial load (versus diesel generators).



Station in a Box

Another example of solutions-oriented customer care is the Station in a Box (SIB), a joint effort between AEP's Transmission Engineering and Supply Chain organizations to support new and fast-tracked emerging load opportunities. The SIB approach is effective when long lead-time material and equipment are on a project's critical path schedule. Materials are purchased in advance and packaged in a portable storage container that can be delivered at the station site for construction. This approach offers flexibility and can be used system-wide. In addition, engineering is greatly simplified and expedited and station construction can be accelerated by several months.

Communicating with Customers

Proactive communication with customers allows them to make more informed decisions about their energy use and run successful businesses. AEP's National Accounts and Economic & Business Development teams work together to help companies expand, relocate, efficiently manage their energy use and troubleshoot. Our National Accounts team has been recognized for four consecutive years by the Edison Electric Institute (EEI) for outstanding customer service to these large customers.

What makes this award unique is that customers do the voting. Votes were cast by EEI National Key Accounts customers, representing a wide variety of industries, including national brands such as Costco, HealthSouth, Marriott Hotels, Staples, TJX Companies, and Walmart. Our customers are the backbone of our business, so recognition from them is the highest compliment.

In addition, AEP's Key Accounts and Economic & Business Development teams are collaborating with the EEI, the World Resources Institute and the World Wildlife Fund to develop a set of "buyer's principles" where large customers that want renewable energy and need their energy company to help

them achieve their goal, work together to develop a solution. This effort to better serve current and prospective customers is part of our strategy to attract and retain businesses to our service territory.

Learn more: [Residential Customer Efforts](#)

Sustainable Electricity

Technology and having a balanced energy mix are vital attributes of a reliable, secure supply of electricity. They are also essential to achieving environmental goals in a clean energy economy. As the resource mix changes, the electric power system is being transformed – and so is AEP.

Clean Energy Future

Our strategy to diversify includes increasing our use of natural gas and renewable generation and reconfiguring the grid to support further integration of distributed energy resources, increased energy efficiency and demand response, and the growth of other customer-driven technologies. The expansion of renewable resources is a key driver of growth in our transmission business.



There is no doubt federal and state policy and society are moving toward the use of clean energy, regardless of what happens with the Clean Power Plan. New and existing fossil-fueled generation resources will be expected to achieve higher efficiencies and include advanced environmental control capabilities. AEP’s existing coal units are controlled or in the process of being controlled to achieve compliance with current environmental regulations. In the future, decisions to maintain these units will be driven by their ability to operate and perform economically as market conditions and environmental regulations change.

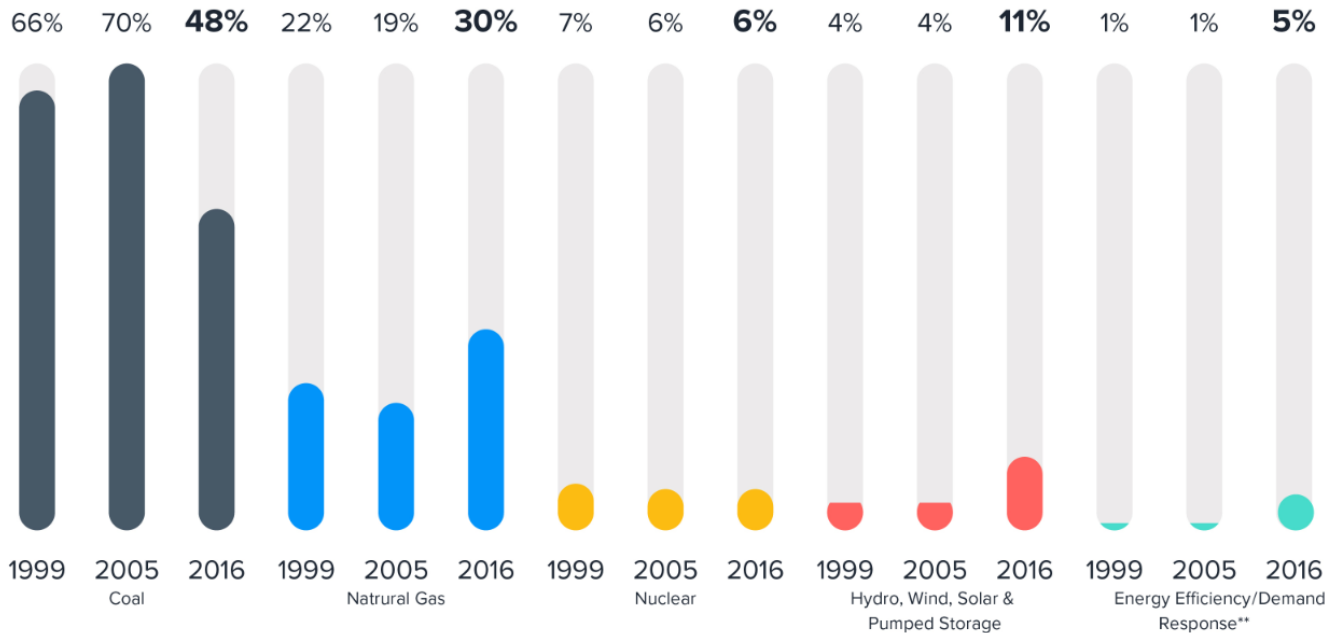
With that in mind, we will continue to prudently invest in technologies that support a balanced portfolio of generation assets. For the existing fossil fleet, our focus is on technologies that can improve efficiency, reliability, flexibility and maintenance of these assets. Improved monitoring and diagnostic capabilities, as well as applying “lean” processes and principles, will complement these investments and ensure these units continue to provide value to our customers and reliability of the power grid.

Given current economics, the logical technology choice for new 24/7 power sources will be high-efficiency combined-cycle natural gas units. However, wind and solar generation will play an increasing role as they become cost-competitive at grid-scale as an intermittent energy resource and align with regulatory mandates and customer preferences.

We are also investing in energy storage technologies that have the capability to improve the efficiency of the power grid and enable reliability with greater use of variable resources in the future.

The power grid of the future will need all of these sources to provide all customers access to safe, reliable and cost-effective electricity. Customer-focused energy efficiency programs and technologies will provide additional opportunities for AEP to adapt and serve our customers as the power grid becomes more and more decentralized.

AEP'S GENERATING CAPACITY PORTFOLIO*



1999 includes combined AEP and Central and South West generation assets

* Includes Purchase Power Agreements

** Does not represent a physical asset but avoided capacity. 1999 data based on estimates.

Resource Planning

Our stakeholders often ask if we factor the cost of carbon into our resource planning. The answer is yes; the potential for carbon regulation has been part of our integrated resource planning process for several years. AEP's planning process, which helps our states plan their energy and capacity needs over time, considers available resource and market options to achieve an adequate mix of resources at reasonable costs for our customers.

Several AEP operating company subsidiaries are required to develop periodic integrated resource plans (IRP) that are filed with state public utility commissions. IRPs help companies and state regulators plan for meeting customers' capacity and energy needs over a certain period of time. Learn more about [resource planning](#) at AEP.

AEP Operating Company by State

Case Number/Docket

Appalachian Power Co. – Virginia [APCo VA PUE-2015-00036](#)

Southwestern Electric Power Co. – Louisiana [SWEPCO LA I-33013](#)

Southwestern Electric Power Co. – Arkansas [SWEPCO AR Doc.07-011-U](#)

Public Service Company of Oklahoma - Oklahoma [PSO OK 2015 IRP](#)

Kentucky Power Co. - Kentucky [KPCo KY 2013 IRPNEED 2013 IRP](#)

IRPs in Indiana and West Virginia are currently pending

INTEGRATED RESOURCE PLAN PROCESS

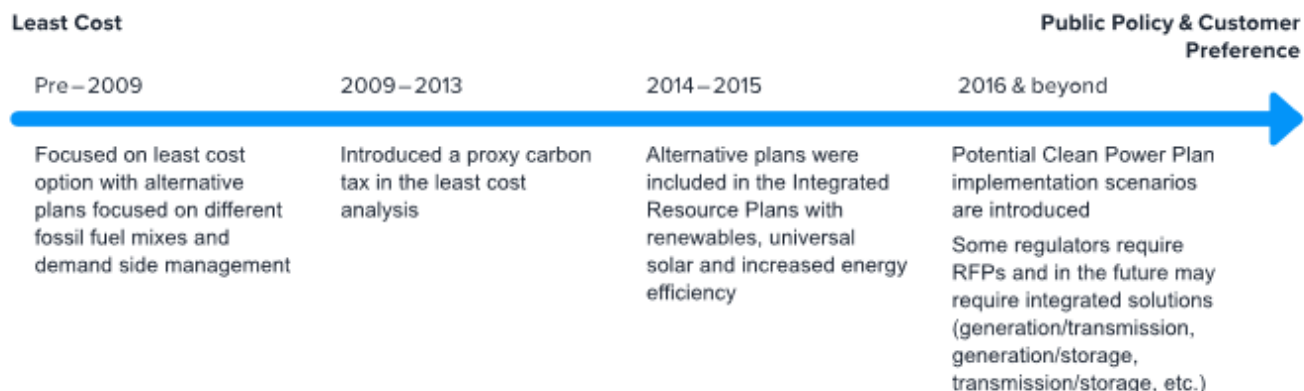
| State Jurisdiction | AEP Operating Company | Filing Frequency | Planning Period | Public Stakeholder Process |
|--------------------|--|------------------|-----------------|----------------------------|
| Arkansas | SWEPCO | 3 years | 10 years | Yes |
| Indiana | Indiana Michigan Power Company | 2 years | 20 years | Yes |
| Louisiana | SWEPCO | 4 years | 20 years | Yes |
| Kentucky | Kentucky Power Company | 3 years | 15 years | No |
| Ohio* | AEP Ohio | 5 years | 10 years | No |
| Oklahoma | Public Service Company of Oklahoma | 3 years | 10 years | No |
| Virginia | Appalachian Power Company | annually | 15 years | No** |
| West Virginia*** | Appalachian Power Company & Wheeling Power Company | 5 years** | 10 years | No |

* The Ohio IRP rules are currently in the process of being revised.

** Virginia has a formal regulatory hearing, with public intervention, before the Virginia SCC for such IRP submittals.

*** West Virginia IRPs are a new requirement with the initial submittal made on 12/30/15. WVVa Commission expectations are that supplemental and future filing requirements are to evolve over time.

INTEGRATED RESOURCE PLANNING EVOLUTION



Renewables

In 2016, the U.S. Energy Information Administration predicts renewable energy used in the power sector will grow by nearly 10 percent over 2015 levels.

The growth of renewable resources in AEP's service areas is also climbing and has the potential to expand, as we invest in large-scale renewable resources. Increasingly, customers want clean energy choices at a reasonable cost and they want their energy companies to work with and for them to make it happen. In fact, our current integrated resource plans show that by 2034, a majority of our resource additions will be made up of renewables and energy efficiency.

We believe we are best positioned to meet our customers' clean energy needs. Owning, operating and maintaining large-scale energy infrastructure is what we do best. We can achieve economies of scale that individual customers cannot while achieving the same environmental benefits and controlling integration with the grid. We can leverage the power grid to be the optimizer and integrator of all resources and technologies. We have the knowledge and experience to cost-effectively and efficiently develop universal solar projects, for example, which would expand access to solar power to more customers rather than the few who can afford private solar panels. And, we can leverage our assets to achieve maximum benefit for our system, the communities we serve and our customers. As our operating companies develop integrated resource plans, universal wind and solar are often among the resource choices in those plans and will continue to be in the future.

AEP'S RENEWABLE PORTFOLIO* nameplate capacity

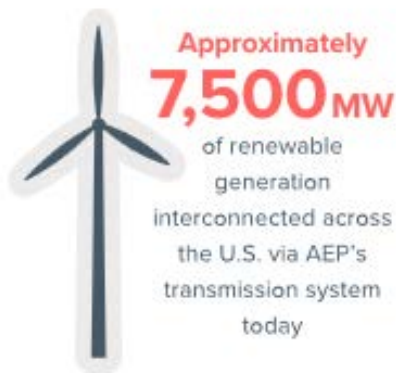
| Contributions by Regulated Operating Companies and Competitive Operations | MW |
|---|--------------|
| AEP Ohio | 209 |
| Appalachian Power** | 375 |
| Indiana Michigan Power*** | 465 |
| Kentucky Power*** | 59 |
| Public Service Company of Oklahoma** | 1,137 |
| Southwestern Electric Power Company | 469 |
| Competitive Operations | 488 |
| Total | 3,202 |

* Excludes hydro generating resources

** Some RECs are monetized and not retired on behalf of AEP regulated customers.

*** Includes projects that are not yet online.

As of March 2016



On Jan.6, 2016, one of four new universal solar facilities in Indiana began commercial operation. The Deer Creek Solar Facility, just south of Marion, Ind., has a nameplate capacity of 2.5 megawatts (MW) of electricity – enough energy to power about 350 homes annually. Three more facilities are under construction and are expected to be placed in commercial operation by the end of 2016. In total, the four facilities will have a total nameplate capacity of 14.7 MW. In addition to investing in large scale renewable projects, we also purchase renewable energy through power purchase agreements (PPAs). Effective January 1, 2016, AEP’s regulated operating companies’ portfolio included PPAs for 2,630 MW of wind (which includes 800 MW of wind identified in AEP operating companies’ IRP plans that have recently been

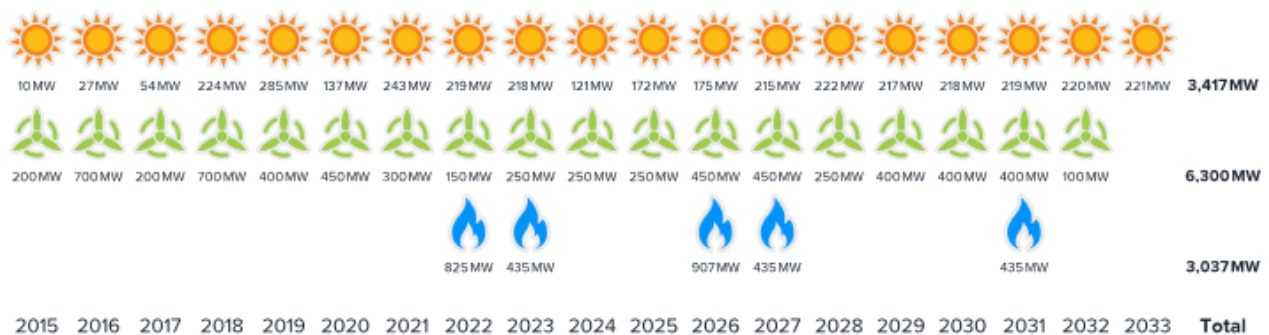
placed in service) and 10.1 MW of solar power. In addition, we have included plans for approximately 3,400 MW of new solar generation and 6,300 MW of new wind power between now and 2034.

Universal solar makes more long-term sense because we can provide it more cost-effectively for customers than smaller scale renewables. Furthermore, we are able to align it with grid operations, preventing unnecessary costs of integration for the long-term, such as the need to build additional transmission lines or substations.

Our renewable portfolio is designed to provide clean energy options that meet energy and capacity needs. We expect these resources to continue to grow regardless of the legal challenges to the Clean Power Plan (CPP). Many states already have voluntary or mandatory renewable energy goals and targets. We expect the demand for clean energy will grow, not diminish.

AEP SYSTEM PLANNED GENERATION RESOURCE ADDITIONS

regulated and AEP Ohio Purchase Power Agreement



Source: Current Internal Integrated Resource Plans, which largely do not reflect ITC/PTC extension or Bonus Depreciation.

Wind and solar represents nameplate MW capacity.

This chart reflects the combined resource plan for the AEP system based on current integrated resource plans; it also includes 900 MW of wind and solar in the Ohio PPA settlement that was approved by the Public Utilities Commission of Ohio.

RENEWABLE PORTFOLIO/ENERGY EFFICIENCY STANDARDS

Energy Efficiency Standards

- ARKANSAS (mandatory)**
0.9% of 2015 retail sales in 2017 and 2018; 1.0% of 2015 retail sales in 2019.
- LOUISIANA (voluntary)**
Voluntary 2-phase EE plan.
- OHIO (mandatory)**
22% reduction of retail electricity sales by 2026 phased in beginning in 2009; but in 2014 SB 310 put a two year freeze on mandates.
- MICHIGAN (mandatory)**
1% annual reduction of previous year retail sales in 2012 and remaining at that level.
- TEXAS (mandatory)**
30% reduction in annual growth in demand until the goal is equal to 0.4% of previous year peak demand.
- VIRGINIA (voluntary)**
10% electricity savings by 2022 relative to 2006 retail sales (voluntary).

Note: Indiana—EE goals are determined through the Interated Resource Planning Process (SB 412).

There are currently no energy efficiency standards in Kentucky, Oklahoma, Tennessee or West Virginia.

Renewable Portfolio Standards

- Michigan (mandatory):**
Phase-in program increasing to 10% by 2015.
- Indiana (voluntary):**
Phase-in program increasing to 10% by 2025.
- Oklahoma (voluntary):**
Goal of 15% by 2015
- Ohio (mandatory):**
Phase-in program increasing to 12.5% by 2026 (SB 310) put a two year freeze on mandates.
- Virginia (voluntary):**
Phase-in starting at 4% in 2010 increasing to 15% by 2025.
- Texas (mandatory):**
Starting at 2,280 MW in 2007 increasing to 10,000 MW statewide by 2025.

There are currently no renewable portfolio standards in Arkansas, Kentucky, Louisiana, Tennessee or West Virginia.

Natural Gas

Shale gas formations across AEP’s service territory have been a game-changer for the availability and cost of natural gas. As new regulations force a shift away from coal, low-cost natural gas has become the resource of choice for 24/7 power generation. Having a reliable, steady supply of fuel is critical to maintaining grid reliability, especially during periods of peak demand.

Natural gas is an important part of our resource portfolio, especially as we have retired approximately 25 percent of our coal-fueled power plants that provided 24/7 power. We are cautious, however, of relying too heavily on any single resource as the main baseload fuel for 24/7 power needs. Volatility in prices, pipeline capacity issues, and fluctuations in supply and demand could impact the availability of natural gas for power generation. For example, on January 7, 2014, during the polar vortex, 9,300 MW of natural gas generation, which represented five percent of PJM’s generating capacity, was unavailable due to interruption of natural gas service.

NATURAL GAS – AEP SYSTEM PLANTS

| | 2013 | 2014 | 2015 |
|--|--------|--------|--------|
| Total Delivered (billion cubic feet) | 158.30 | 146.10 | 176.10 |
| Average Price Per MMBtu of Purchased Natural Gas | \$4.01 | \$4.60 | \$2.64 |

The availability of natural gas, especially during peak demand periods and when variable resources are unavailable is why several of our natural gas plants are connected to at least two pipelines. This gives us

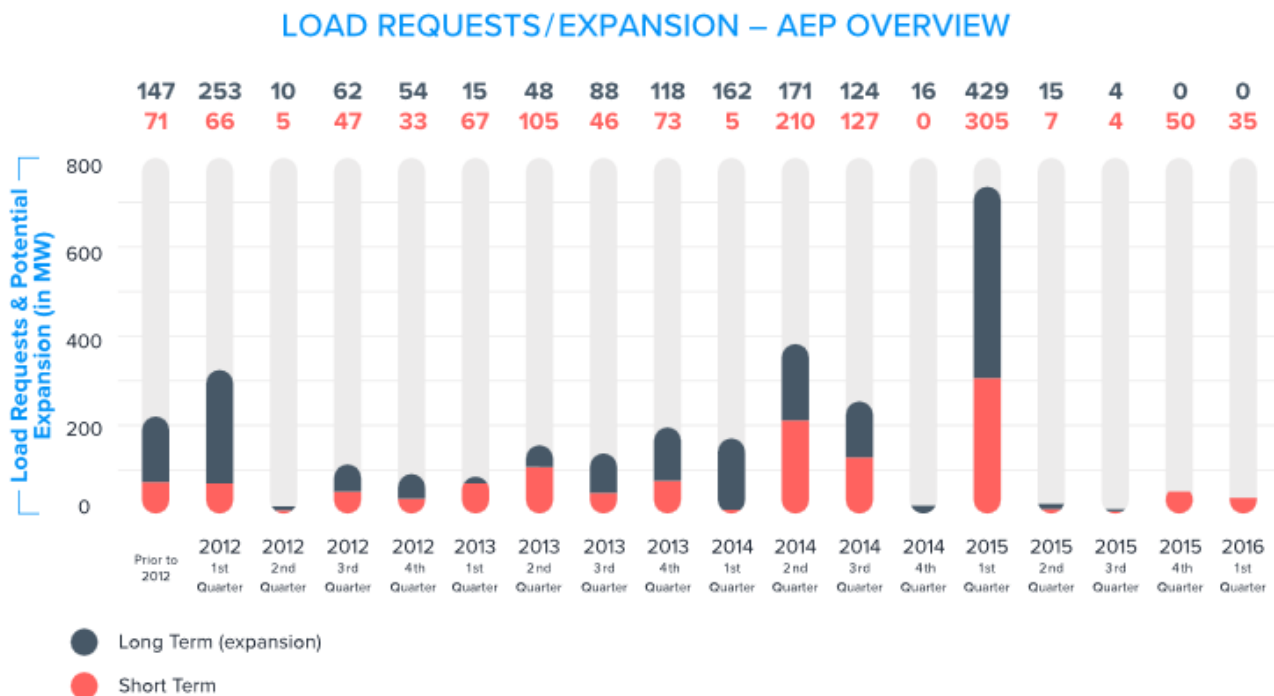
greater access to competitive supplies and reliable delivery. We also are working with regulators to align the needs and interests of the gas and electric industries to gain more certainty and flexibility when procuring and scheduling natural gas for our units. Learn more about gas-electric harmonization efforts under way.

AEP’s Clinch River Plant, Unit 1 and Unit 2 began operations as natural gas units in February 2016 and April 2016, respectively. Two units of the plant’s three coal-fueled units were converted to natural gas. A third coal unit, at the Big Sandy Plant in Kentucky, is being converted from coal to natural gas and will be in operation in June 2016. These conversions ensure reliability for customers while complying with new environmental regulations. Keeping these plants in operation also supports local communities with jobs and local taxes, while providing low-cost, 24/7 power.

Shale Gas – Growth for the Future

The natural resources in AEP’s 11-state service territory have presented an excellent opportunity to support economic and business development and create new jobs. Since 2011, many shale oil and gas customers tapped into these resources in AEP’s Ohio, West Virginia, Oklahoma, and Texas service territories.

AEP has tracked short- and long-term customer power requests since 2011; today, this data is helping us to plan transmission improvements to meet customers’ needs. In 2015, new customer requests from oil and gas companies slowed, predominately due to the drop in oil prices globally. However, with growing demand for natural gas in foreign markets, including India, Japan, and South Korea, the oil market has begun to rebound here in the United States to meet that demand.



* Approximately 176 MW and 128 MW of additional short/long term load requests have also been received but not reflected throughout the time frame represented in the chart

As customer needs increase, AEP is ready with solutions to meet new service requests. For example, AEP is engineering and building transmission system improvements that will further enhance service reliability in the shale regions.

Shale customers require a highly reliable supply of electricity to maintain many of their 24/7 operations, as well as meet their downstream customer needs. In AEP’s eastern service territory, planning engineers developed a transmission shale expansion plan to help us forecast where transmission improvements will likely be needed.

This plan will help us to prioritize our investments and system improvements to maximize benefits to customers and the power grid. A similar effort is under way in AEP’s western service territory. These efforts position AEP to seize growth opportunities in shale regions as they develop.

In addition, we have developed the concept of regional engineering teams that will focus resources where needed in the higher growth shale regions. These teams will also improve efficiencies across AEP’s territory, as well as support our cultural journey through collaboration and engagement.

As oil and gas drilling activities have increased in shale gas-rich regions of the country, the incidents of earthquakes have also been increasing. The U.S. Geological Service and others have tied the process of disposing of wastewater from oil and gas extraction activities to surges in earthquakes in eight states – including states in AEP’s service territory (Arkansas, Ohio, Oklahoma and Texas). This concerns us and, as we rely more heavily on natural gas for power generation, we will look to that industry to insure responsible practices are in place to minimize environmental impacts, as well as address the earthquake concerns.

Coal Fleet Transition

Having a diverse resource mix that includes coal is imperative to achieving an affordable and balanced energy portfolio. Our nation’s coal-fueled power plants have delivered significant benefits to the country and our economy for many decades. Today, the coal-fueled power plant fleet in the United States is cleaner and more efficient, thanks to breakthroughs in technology and investments in new environmental controls.

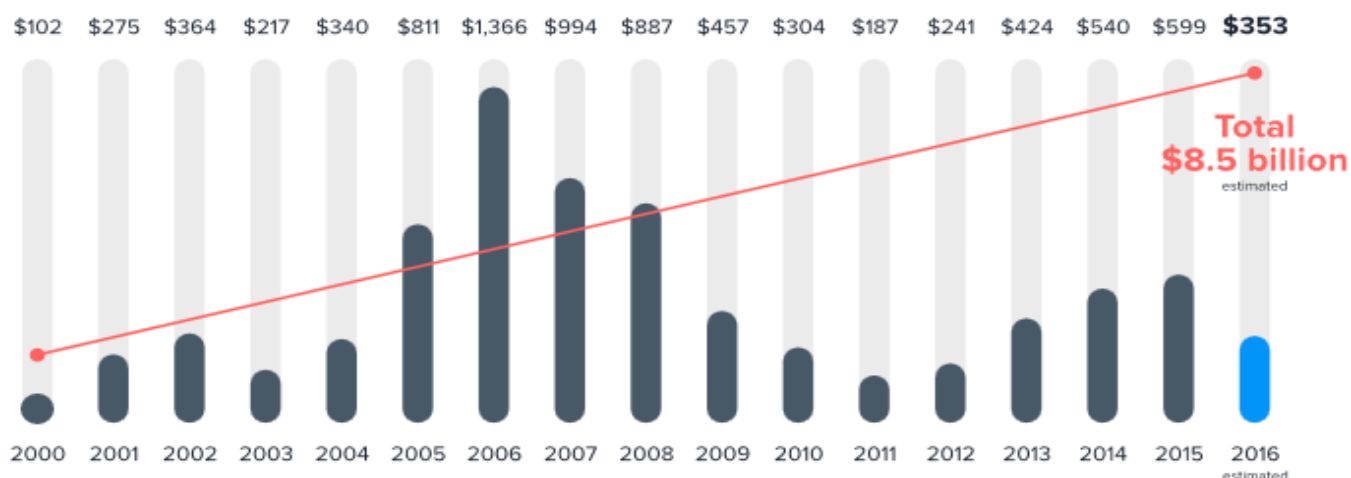
Between 2000 and 2016, AEP will have invested an estimated \$8.5 billion to date in its coal units to comply with various environmental regulations. Through 2015, AEP’s carbon emissions have already declined 39 percent from 2000 levels, and we expect further reductions as we transition to more natural gas and renewable resources in the future. Because coal will continue to be important to a reliable and diverse resource mix, we have planned additional investments up to \$1.4 billion between 2017 and 2025 to comply with new environmental regulations. This ensures our ability to maintain reliable, affordable service for our customers.

COAL – AEP SYSTEM PLANTS

| | 2013 | 2014 | 2015 |
|------------------------------------|---------|---------|---------|
| Average Cost Per Ton Delivered | \$51.31 | \$49.99 | \$47.08 |
| Total Delivered (millions of tons) | 54 | 59 | 50 |
| Total Consumed (millions of tons) | 55 | 58 | 47 |

INVESTING BILLIONS TO REDUCE EMISSIONS

\$ in millions



Between 2011 and mid-2016, AEP retired more than 7,200 megawatts (MW) of coal-fueled generation. The retirements are part of our plan to comply with the new federal Mercury Air Toxics Standards for existing power plants. At the end of 2015, AEP’s total generating capacity was approximately 32,000 MW, of which approximately 18,000 MW are coal-fueled.

AEP SYSTEM GENERATING UNIT RETIREMENTS

| Operating Company | Generating Plant Name & Unit | State | Capacity in MWs | Year Retired |
|-------------------------------------|---------------------------------|---------------|-----------------|--------------|
| AEP Generation Resources | Philip Sporn Plant Units 2 & 4 | West Virginia | 300 | 2015 |
| AEP Generation Resources | Philip Sporn Plant Unit 5 | West Virginia | 450 | 2011 |
| AEP Generation Resources | Kammer Plant | West Virginia | 630 | 2015 |
| AEP Generation Resources | Muskingum River Plant | Ohio | 1,440 | 2015 |
| AEP Generation Resources | Beckjord Generating Station | Ohio | 53 | 2014 |
| AEP Generation Resources | Picway Plant Unit 5 | Ohio | 100 | 2015 |
| AEP Generation Resources | Conesville Plant Unit 3 | Ohio | 165 | 2012 |
| Appalachian Power | Clinch River Plant Unit 3 | Virginia | 235 | 2015 |
| Appalachian Power | Glen Lyn Plant Units | Virginia | 335 | 2015 |
| Appalachian Power | Kanawha River Plant | West Virginia | 400 | 2015 |
| Appalachian Power | Phillip Sporn Plant Units 1 & 3 | West Virginia | 300 | 2015 |
| Indiana Michigan Power | Tanners Creek Plant | Indiana | 995 | 2015 |
| Kentucky Power | Big Sandy Plant Unit 2 | Kentucky | 800 | 2015 |
| Public Service Company of Oklahoma | Northeastern Station Unit 4 | Oklahoma | 470 | 2016 |
| Southwestern Electric Power Company | Welsh Plant Unit 2 | Texas | 528 | 2016 |
| Total | | | 7,201 | |

Coal Technologies

Although we do not see any new coal plants coming online, we support the development of technologies that will allow existing coal plants to remain part of our country's balanced portfolio. AEP's John W. Turk Jr., Power Plant in Arkansas is an example of the kind of technology innovation that is needed to keep coal in the resource mix. The 600-megawatt facility, which began operation in December 2012, is one of the cleanest, most efficient coal plants in the United States. It operates the country's only "ultra-supercritical" steam cycle using advanced materials and combustion technology to consume less coal and produce fewer emissions, including carbon dioxide, than traditional pulverized coal plants. In addition, state-of-the-art emission control technologies and the use of low-sulfur coal enable the Turk Plant to meet emission limits that are among the most stringent ever required for a pulverized coal unit.

To effectively reduce the carbon footprint of fossil generation, ultra-supercritical technologies for power generation such as the Turk Plant are a step in the right direction, but still cannot achieve the stringent new source performance standards for CO₂ that will be enforced through Section 111(b) of the Clean Air Act.

There are, however, transformational technologies under development that have the potential to build upon the types of innovation that the Turk Plant has pioneered for the industry, further reducing CO₂ emissions from fossil-fueled power generation. Technologies currently in early development stages, such as pressurized oxy-combustion, chemical looping and supercritical CO₂ power cycles, all rely on alternative fuel-to-energy conversions and fundamentally different ways of energy production and/or efficiency improvements to mitigate and/or easily separate CO₂ emissions for other uses or for storage.

Unlike the pre- and post-combustion carbon capture systems that have been inadequately demonstrated at commercial scale to date, we believe these technologies have greater potential to meet industry cost and performance targets. To support development, demonstration and deployment of these technologies, the industry, along with the Electric Power Research Institute, U.S. Department of Energy, technology suppliers and academia are working to test and validate state-of-the-art equipment and components, new metal alloys, alternative materials, and advanced manufacturing techniques. The goal is to have low-carbon fossil-fueled power generation technology options available in the 2030 to 2035 timeframe.

Energy Efficiency and Demand Response

Over the past decade, there has been a significant change in electricity usage trends. One key factor causing slower growth in electricity usage is the saturation of energy efficient technologies. This saturation has substantially increased as a result of federal energy policy, state requirements and energy efficiency and demand response programs implemented by utilities. AEP's load forecasting modeling tracks these trends, which helps us develop resource plans for our companies that account for these changes over time.

Energy efficiency and demand response are important elements of AEP's resource portfolio; they are tools that encourage reduced energy consumption, either during times of peak demand, or throughout the

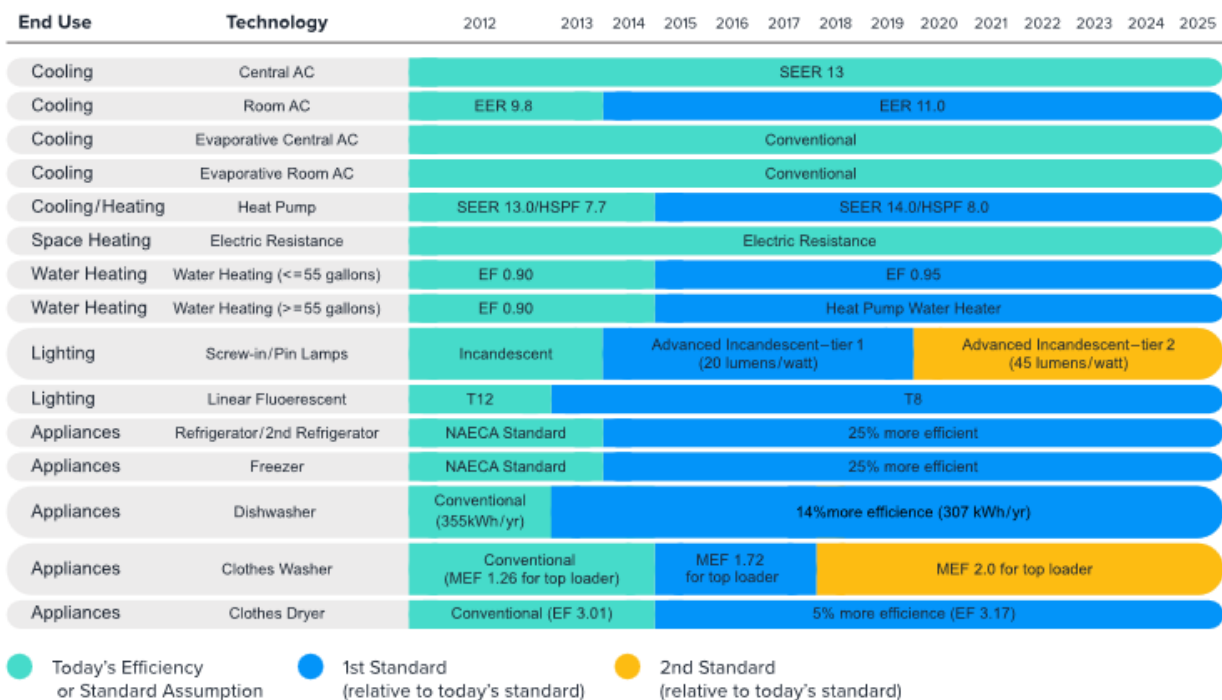
day or year. AEP currently has energy efficiency as well as demand response programs in place in almost all of its service territories.

The Energy Policy Act of 2005 (EPACT) was the catalyst for establishing energy efficiency as a priority for the nation. EPACT’s success led to more aggressive increases in efficiency standards with the passage of the Energy Independence and Security Act of 2007 (EISA). The EISA set new energy efficiency standards covering vehicles, lighting, motors, building codes and other categories of energy-using equipment. The increased standards have had a pronounced effect on energy consumption, which AEP has seen in its service territory, particularly over the last decade.

Federal codes and standards for residential and commercial lighting – combined with other efficiency gains from other energy-consuming appliances and building systems – are also helping to drive consumption down over time.

These naturally-occurring reductions in future energy usage that are brought about by such emerging federal codes and standards (reflected in the chart) are incorporated into the customer load- and peak-demand forecasts that are relied upon for integrated resource planning purposes. The operating company plans implicitly capture these energy usage reductions over time.

FORECASTED VIEW OF RELEVANT ENERGY EFFICIENCY CODE IMPROVEMENTS



SEER – Seasonal Energy Efficiency Ratio; EER – Energy Efficiency Ratio; HSPF – Heating Seasonal Performance Factor; EF – Energy Factor; NAECA – National Appliance Energy Conservation Act; MEF – Managed Extensibility Framework

Energy Efficiency Achievements

Today, AEP offers customers more than 100 energy efficiency programs across nearly our entire 11 state service territory. In 2015, AEP’s energy efficiency programs were credited with over 1 million megawatt hours (MWh) of energy reduction and over 250 megawatts (MW) of demand reduction, with associated program costs of \$159 million.

Cumulatively, from 2008 through 2015, these programs have been credited with reducing annual consumption by nearly 6 million MWh and peak demand by over 1,500 MW, with program costs of approximately \$875 million.

Energy efficiency is viewed as a readily deployable, relatively low-cost and clean energy resource that provides many benefits. Energy efficiency reduces energy consumption by incorporating energy efficiency improvements in their homes and businesses; the trade-off is the up-front investment in a building/appliance/equipment modification, upgrade or new technology.

Energy Efficiency Growth

There have been steady gains achieved through energy efficiency during the last two decades and AEP foresees additional future impacts, which we account for in our integrated resource planning process. Among the drivers of energy efficiency growth:

- **Energy costs** - As the cost of energy increases, the value of energy efficiency increases.
- **Technology costs** - The cost of energy efficiency technologies is decreasing. For example, the cost of LED bulbs has decreased substantially in the last few years. They are on track to replace CFLs as the next-generation lightbulb.
- **Technology improvements** – As devices become more interconnected and controllable, the ability to monitor and manage energy consumption rises. Today, this is seen more among commercial and industrial customers (e.g. more efficient building control systems) but is gaining penetration among residential customers through technologies such as smart thermostats.
- **Environmental reasons** – Some customers want to reduce energy consumption to support environmental sustainability in addition to achieving economic benefits.
- **Building code efficiency standards** – While building code standards can have a large impact over the life of a building, the adoption of these standards occurs gradually over time and the benefits are most often seen in new construction or major restorations or renovations.

AEP SYSTEM ENERGY EFFICIENCY RESULTS* FOR 2015

| Operating Company | MW Reduced | MWh Reduced |
|-------------------------------------|--------------|------------------|
| AEP Ohio | 63.9 | 534,698 |
| AEP Texas | 48.5 | 81,377 |
| Appalachian Power | 5.7 | 60,581 |
| Indiana Michigan Power | 36.3 | 162,644 |
| Kentucky Power | 4.1 | 33,454 |
| Public Service Company of Oklahoma | 70.8 | 92,844 |
| Southwestern Electric Power Company | 27.1 | 59,398 |
| Total | 256.4 | 1,024,998 |

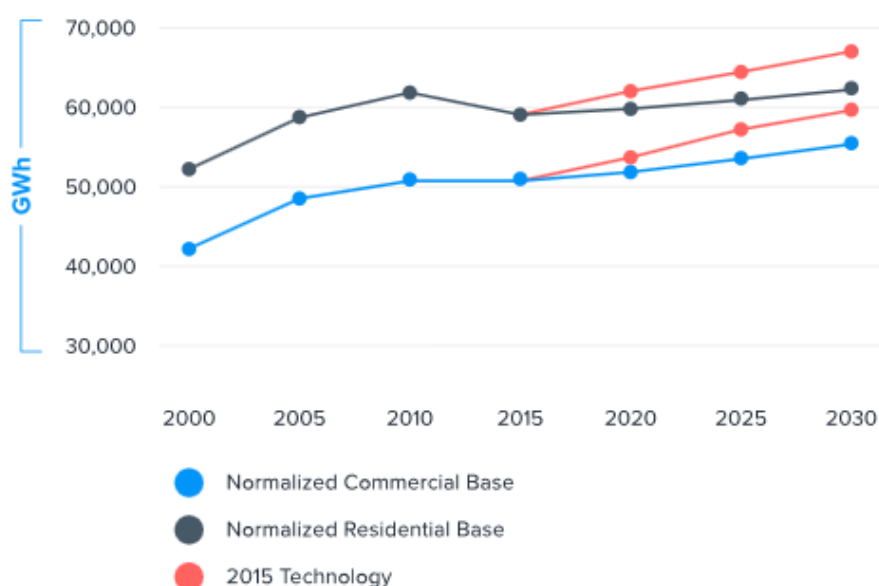
* Results represent programs/projects implemented in 2015 only. Preliminary results subject to third-party Evaluation, Measurement and Verification (EM&V), as appropriate.

- **Public policy** – A combination of federal mandates and company-sponsored energy efficiency programs have had a significant impact on the development of more energy efficient technologies and their rapid adoption rate in AEP’s service territory.
- **Appliances** – In addition to lighting, there have been significant increases in the saturation of energy efficient technology related to other appliances such as cooling systems, clothes washers and dryers, water heaters, dishwashers, etc.

As a result of these developments, subsequent achievements from utility-sponsored energy efficiency programs that exceed the ‘naturally occurring’ and efficiency codes-driven energy savings will likely be more challenging and expensive to implement in the future.

Every three to four years, AEP conducts a residential appliance saturation survey to monitor the saturation and age of various appliances in residential homes. We compare the findings to projections from the U.S. Energy Information Administration to understand the trends for which we plan accordingly.

ENERGY EFFICIENCY TECHNOLOGY IMPACTS TO AEP'S SALES FORECAST



This chart reflects forecasted impacts of energy efficiency on residential and commercial sales within AEP’s service territory. The red line represents what our residential and commercial sales would have been if not for the increasing energy efficiency that is assumed will occur.

Demand Reduction

Demand response supports reliability of the power grid by helping to reduce peak periods of demand. Demand-side management includes energy company-sponsored programs and rate structures that encourage customers to reduce energy consumption during peak demand periods. Within each of AEP’s state integrated resource plans, the potential for more demand-side resources, as well as other smart

grid-related projects such as volt VAR optimization, are modeled on the same economic basis as supply-side resources (generating capacity).

Peak demand is reported in megawatts and is the amount of power used at the time of maximum power usage. Peak demand periods vary across AEP's service territory. For example, Appalachian Power Company's system peak generally occurs on a winter weekday morning, when electric heating and appliance usage is happening at the same time that commercial equipment and industrial machinery is ramping up electric use. Whereas Public Service Company of Oklahoma's system peak, for example, typically occurs in the afternoon of a summer weekday, as people get home from work or school and increase their use of air conditioners and fans, while the demand from commercial and industrial customers remains high.

As peak demand grows with the economy and population, new capacity would ultimately be needed. To defer building new power plants, there are several ways to reduce the peak load. For example, a customer with an interruptible contract with AEP agrees to allow the company to "interrupt" or reduce its power consumption in exchange for reduced rates.

For the first time, the North American Electric Reliability Corporation (NERC) is forecasting the lowest peak demand growth rates on record in its annual long-term reliability assessment of the bulk power system. NERC forecasts that winter and summer peak demand growth during the next decade will drop below 1 percent for the first time.

NERC also predicts that declining demand growth rates will continue. With the decline in peak demand, less new capacity is needed, allowing energy companies to use more of existing resources to meet future resource needs. It also frees up capital that can be invested on other things such as transmission and distribution infrastructure that improve service to customers.

We've been predicting slow growth in peak demand for a number of years due to various factors. Our increasing rates to comply with new environmental regulations, combined with higher saturation of energy efficient appliances, slower population growth and shifting demographics, and the shift in our overall economy away from manufacturing and toward a more service-sector based economy, all point to much slower demand growth than we've experienced historically.

Energy efficiency and demand response programs can affect customer bills in differing ways. Customers can be favorably impacted through the delay in investment required for new generation resources, and benefit through avoidance of incremental costs associated with environmental compliance costs. This benefit to the customer, however, comes with a price due to the up-front and ongoing costs of the programs themselves.

Distributed Energy Resources

The advent of distributed energy resources (DER) and the integration of information technologies with the power grid are creating new challenges and opportunities for the electric power industry. DER technologies include energy efficiency, demand response distributed generation (DG), microgrids, energy storage and electric vehicles. These demand-side technologies – often on the customer side of the

meter – are growing in popularity as technology costs decline, reliability and performance improves, and consumers opt for greater flexibility and control over their energy generation and use and its cost.

Cost-effective advancements in technologies such as solar, natural gas turbines and reciprocating engines, and energy storage are setting the stage for microgrid opportunities, and paving the way for emerging distributed generation (DG) technologies such as fuel cells, microturbines, and flow batteries. If properly integrated, DER technologies like these, coupled with innovative pricing structures, can provide operational benefits for AEP and the power grid, and financial benefits for the customer.

For instance, accurate pricing signals can be designed to fairly compensate customers with private local generation to optimize production at peak-demand times that provide the greatest benefit. In much the same way, these accurate pricing signals could further support development of energy storage resources to help meet peak demands. In the end, revision of the current pricing construct could provide a more sustainable pricing structure for all customers who rely on the services provided by the power grid.

Local Generation

Local generation – technologies that generate electricity at or near where it will be used, such as private solar and combined heat and power – is growing in popularity as costs come down, government subsidies continue to be extended, reliability and performance improve and consumers opt for greater flexibility and control over their energy use and cost. Local generation is creating new challenges and opportunities for the energy industry.

Large industrial and commercial customers have been the early adopters of local generation, where energy managers want more control over their systems, lower costs and increased reliability of the power that drives their business and keeps them competitive. The economics of local generation, particularly private solar, continue to improve, increasing their saturation rate.

[AEP's solar generation growth](#)

Examples of local generation systems in use by residential, commercial and industrial customers

| Residential Sector | Commercial & Industrial Sector |
|------------------------------|---|
| Solar photovoltaic panels | Combined heat and power systems |
| Small wind turbines | Solar photovoltaic panels |
| Natural gas fuel cells | Wind |
| Emergency back-up generators | Natural gas or biogas fuel cells |
| | Reciprocating internal combustion engines, including back-up generators |

Local Generation and Grid Reliability

Local generation can have positive and adverse effects on the reliability of the electric grid. Despite the growth of emerging local generation technologies, customers will continue to depend on the grid; therefore integration of local generation must be done in a way that maintains the reliable service that we all depend upon daily.

Distributed resources may provide energy security, resiliency and a way to reduce emissions. But it also means that more of the grid's energy and capacity is spread across more sources. As local generation penetration grows, the need to modernize the grid infrastructure to integrate these resources in a safe and efficient manner is heightened.

Nearly all customers, including those who have installed local generation, continue to rely upon the grid for fundamental services. Capacity (the obligation to provide energy and demand whenever it is needed) is a fundamental service provided to all customers connected to the grid. This includes times when local generation sources are not producing energy, such as when a cloudy day prevents private solar customers from producing sufficient energy to meet all of their needs, or when their system is not operational. Conversely, they also need the grid when their system produces more energy than they need.

The grid also provides voltage control, frequency support and other ancillary services that are essential to reliability and all the devices we connect to. Without these fundamental services, all customers – DG and non-DG – would not be able to operate any of the electrical equipment in their homes or businesses.

There have been some bold predictions made regarding the electric utility industry's quick demise resulting from the growth of local generation and other distributed resources. While it is true that the future will likely require power companies to build less central generation than we have in the past, we will continue to rely upon 24/7 capacity as a cost-effective and reliable source to maintain the reliability of the grid.

We have already taken steps to prepare the grid and we are making further investments in our transmission and distribution systems to accommodate a multitude of resources that will need to be connected to our system. Our gridSMART[®] initiative is one example of how we have laid the foundation for a modern grid. Now, we are focused on building out the infrastructure and engaging with regulators and policymakers to review the rules to enable this bold new future.

Technology & Innovation

AEP is developing strategies and investing in technology to be the next-generation energy company--one that co-exists with, accommodates and incorporates distributed generation, energy storage and advanced energy management.

Technology Focus

AEP's Focus:

1. [Universal Solar](#)
2. [Energy Storage](#)
3. [Non-renewable Distributed Generation](#)
4. [Volt/VAR](#)

We believe that a robust, modern grid is a natural enabler of new technology. The power grid serves as the backbone to support diverse generation resources and distributed energy technologies. And, it assures cost-effective, efficient and reliable delivery of electricity, regardless of how it is produced.

In the future, the integrated grid will be decentralized, digitized and have a smaller carbon footprint. Technology and information, including the use of big data and predictive analytics, will help us to identify and develop programs and services for customers, while enabling them to deploy new technologies to personalize their use of energy.

In 2015, AEP established an Enterprise Technology Council that is focusing on the deployment of innovative technologies to support the integrated grid and meet customer demand and expectations.



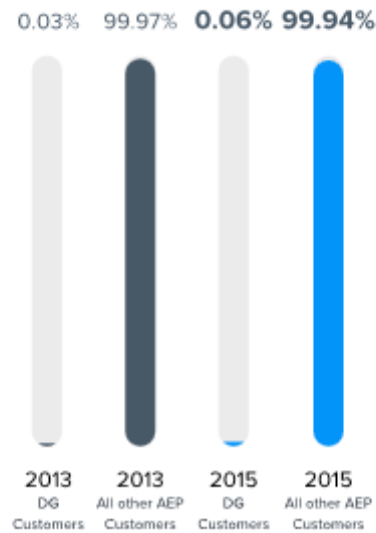
On Jan.6, 2016, one of four new universal solar facilities in Indiana began commercial operation. The Deer Creek Solar Facility, just south of Marion, Ind., has a nameplate capacity of 2.5 megawatts (MW) of electricity – enough energy to power about 350 homes annually.

Universal Solar

We are seeking to standardize the design and deployment of large-scale photovoltaic systems to ensure consistency and to better manage their integration with our system.

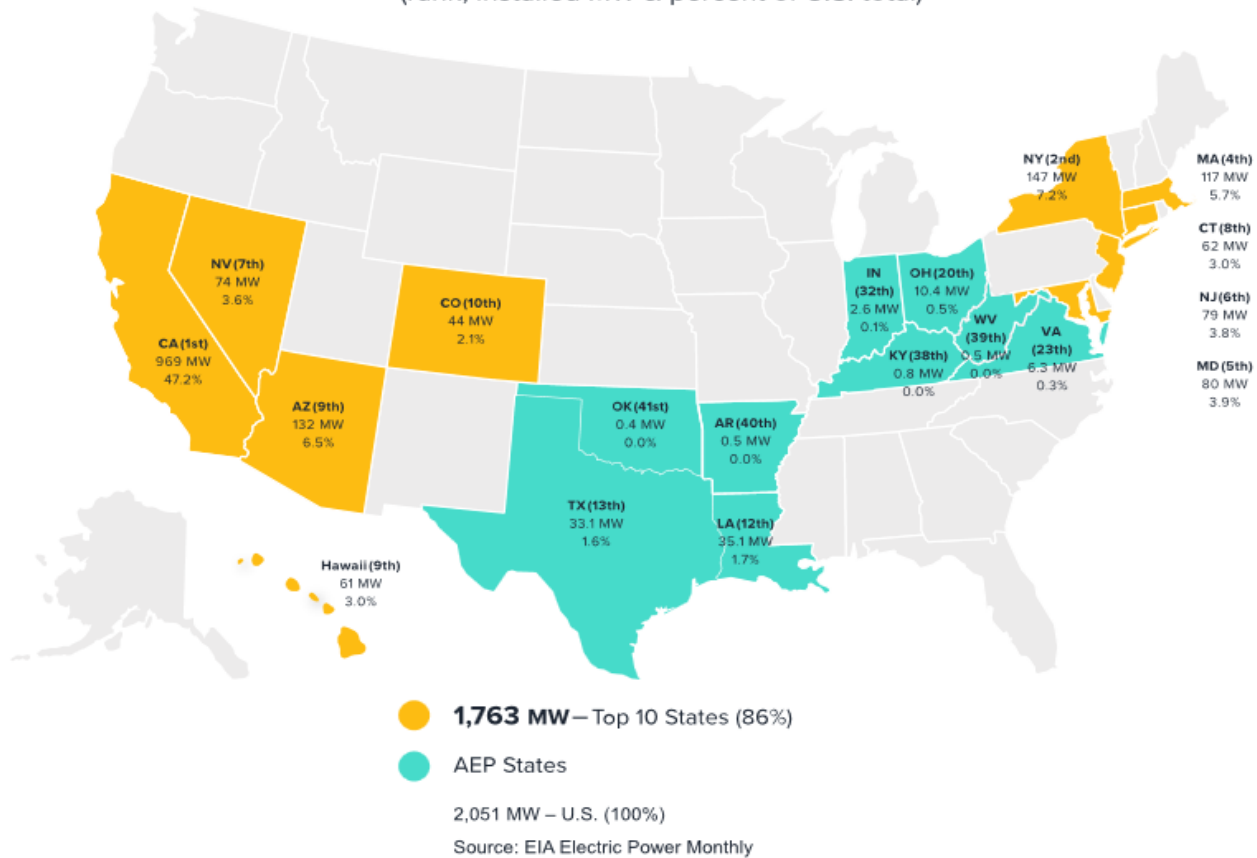
AEP has extensive power systems engineering experience and is the largest transmission owner and operator in the U.S., which we believe gives us an advantage in the ability to optimally integrate variable resources with the grid.

AEP SOLAR DISTRIBUTED GENERATION (DG) CUSTOMERS



INSTALLED SOLAR DISTRIBUTED GENERATION IN 2015

(rank, installed MW & percent of U.S. total)



Solar Generation Growth

Customer adoption of local generation in AEP’s service territories, particularly among residential customers, is slower compared with other parts of the country. The areas in the U.S. that have seen the highest penetration of private solar generation are typically in places where supporting subsidies are in place and/or the average household incomes and/or the local energy company’s rates are relatively high. Electricity rates in AEP’s service territory are still below the U.S. average and typically below the average rate for the states we serve. At the same time, average household incomes within AEP’s service territory are nearly 20 percent below the U.S. average.

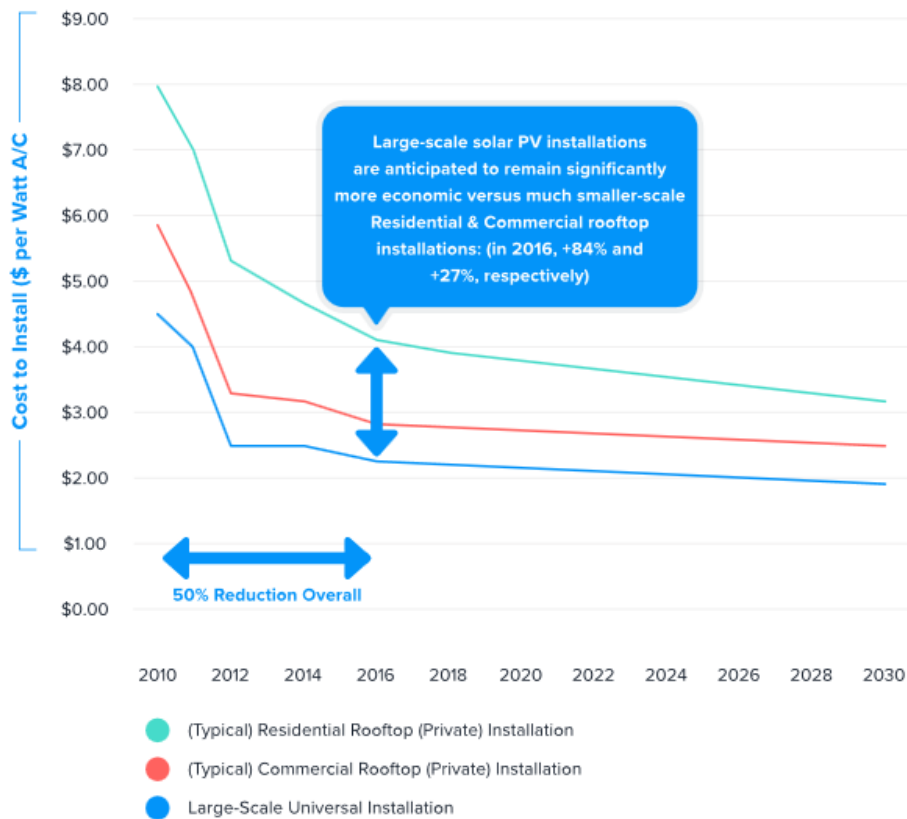
Although the current number of local generation customers on the AEP system is relatively modest, it is increasing. During the past three years, customer-owned private solar generation in AEP’s service territory has increased from 0.03 percent in 2013 to 0.06 percent of our total 5.4 million customers in 2015. However, even with that growth, the threat to AEP’s financial status is not a material risk for the foreseeable future.

As the cost of solar continues to decline, and with the extension of federal investment tax credits, customer adoption may continue to increase over time. However, we believe that installing private solar panels remains economically challenging for most residential customers.

The following chart shows the fairly rapid decline of expected installed solar costs, based on a combination of AEP market intelligence and the Bloomberg New Energy Finance’s (BNEF) installed cost of solar forecast. The costs shown do not include the 30 percent federal Investment Tax Credit (which remains at that level for the next three years, then is reduced incrementally through 2021, until leveling off at 10 percent thereafter).

SOLAR PHOTOVOLTAIC (PV) INSTALLATION COST TRENDS (U.S. AVERAGE)

Excluding Investment Tax Credit Benefits



Note: All costs reflected in 'normal' (as-spent) dollars with wattage (denominator) reflected on an "alternative current" (A/C) basis.
 Source: Bloomberg New Energy Forecast (BNEF)—H2 2015 U.S. States Average Utility Forecast

That is why AEP believes large-scale universal solar is a better alternative to private solar. It is more cost-effective (typically half the cost) for AEP to build it than for individual homes and businesses, and it expands access to more customers. Without subsidies, residential rooftop solar remains considerably more expensive than large, universal solar. We are actively pursuing opportunities to invest in universal solar projects; our first projects are in Indiana and Michigan.

Renewable Associations

As we increase our renewable portfolio, we need to increase our knowledge of these resources as they interact with the power grid. We are doing this by participating in renewable energy trade organizations. We have been members of the [American Wind Energy Association](#) for more than a decade. In 2015, we joined the [Smart Electric Power Alliance](#).

AEP also has joined with the [Edison Electric Institute](#), the [World Resources Institute](#) and the [World Wildlife Fund](#) to advocate for a set of “buyer’s principles” where large customers that want renewable energy and need their energy company to achieve their goal, work together to develop a solution. AEP’s Key Accounts and Economic & Business Development teams are collaborating on this effort to serve current customers and as part of our strategy to attract new businesses to our service territory.

Energy Storage

Reliable and affordable energy storage – equipment that stores power and distributes energy on demand when and where it is needed most – will be extremely important to enable large-scale deployment of renewable resources. In addition to grid-scale storage applications, we are also exploring the use of energy storage for specific customer applications.

Distributed energy storage can have application in several areas:

- **Frequency regulation** - Batteries have the ability to rapidly respond to frequency regulation signals on the grid. Regional transmission organizations are recognizing the need for greater amounts of frequency regulation due to the integration of distributed resources.
- **Firming of renewables** - Wind and solar often do not generate energy when and where it is needed most. Deploying batteries to charge using excess wind/solar energy can allow for better use and management of variable renewable energy sources.
- **Peak shaving** - Batteries can provide power during peak demand times to limit customer demand and alleviate strain on the power grid.
- **Reliability improvements** - Batteries can provide back-up power in case of an outage. For example, a total of three 2-MW NaS (sodium sulfur) batteries were deployed in Appalachian Power, Ohio Power and Indiana Michigan Power in 2008. Each battery is capable of providing islanding (backup power) for over seven hours when loss of power from the substation occurs.
- **Power quality** - Batteries are capable of conditioning the flow of power so it can be used by sensitive electronic equipment.



AEP's Electric Transmission Texas' 4-MW NAS[®] sodium sulfur battery system located in Presidio, Texas.

In many cases, batteries can provide peak power and thus delay the need for building transmission or distribution lines or electrical substations located near peak loads. They can also help to smooth the variability of renewables. In addition, batteries are a relatively quick-fix solution that can be relocated if they are needed elsewhere on the system.

AEP is an industry leader in deployment of batteries to support the power grid

| Year Deployed | Project | Benefits to Grid Achieved |
|----------------------|---|---|
| 2002 | First U.S. demonstration of sodium sulfur (NaS) battery in the United States at AEP | Tested the combined power quality and peak shaving capabilities of the NaS battery |
| 2006 | 1 MW / 7.2 MWh NaS battery | Allowed deferral of capital investment in distribution system in Charleston, WV |
| 2009 | Three 2 MW/14.4 MWh NaS batteries | Provided peak load shaving and demonstrated increased reliability by providing back-up power in Milton, WV, Churubusco, IN, and Bluffton, Ohio. |
| 2010 | 4 MW/ 24 MWh NaS battery | Transmission capital deferral while providing back-up power to the town of Presidio, Texas |

The biggest barrier to wider deployment has been cost, which has significantly decreased since AEP initially piloted community energy storage as part of the gridSMART[®] demonstration project in Ohio.

We recognize the need to continue exploring a variety of options and possibilities for delivering electricity to our customers, including further development of energy storage technology. That’s one of the reasons we invested \$5 million in [Greensmith Energy Management Systems, LLC](#). Greensmith’s main focus is maximizing the efficiency of battery storage. We believe that our investment will help further advance energy storage technologies and support deployment of innovative energy infrastructure solutions that will benefit our customers.

Non-renewable Distributed Generation & Combined Heat & Power

Unlike traditional centralized power plants that require electricity to be transmitted over long distances, distributed generation (DG), also known as local generation, produces electricity on-site, close to the point of consumption. Efficient, flexible and dispatchable local generation technologies fueled by natural gas can be deployed cost-effectively to meet grid and customer demands for reliability, resiliency and sustainability. The most prevalent of these technologies are aero-derivative combustion turbines, reciprocating internal combustion engines, and fuel cells.

These technologies can be integrated directly with the customer to provide combined heat and power (CHP) opportunities to further enhance the efficiency and improve the overall carbon footprint of the technology. CHP applications recover waste heat from the power generation equipment and reuse it to

supply heating, cooling, steam and/or hot water to nearby buildings or industrial processes. The integration and effective design of DG with CHP can provide environmental, economic and energy infrastructure benefits for customers and the power grid.

We believe that providing non-renewable local generation and/or CHP solutions ranging from 1 to 50 MW in locations where it can best benefit the grid and the customer can be highly beneficial in both regulated and competitive environments. Careful consideration of services that these systems continue to rely upon, such as capacity from the power grid, need to be properly evaluated.

Volt VAR Optimization

Applying technology on our distribution system allows us to monitor and more tightly control voltage, which creates energy and demand savings for customers. Known as Volt VAR Optimization (VVO), this technology has proven its technical viability in achieving demand and energy savings.

Typically, distribution lines deliver electricity at a voltage between 114 and 126 volts. Using the full range of voltage is common practice in our industry; it has been a way to ensure the strength of the voltage between the point of origin and the customer. But studies and our experience have demonstrated that optimizing voltage – delivering electricity at the lower end of the range – reduces customer energy demand and consumption, and thus lowers their bills.

VVO is a unique type of energy efficiency and demand reduction. Energy companies can identify the areas where the greatest increases in efficiency can be achieved, and it doesn't require participation or behavioral change by customers. Upgrading the circuits with VVO control equipment enables other grid efforts to improve reliability and outage restoration with relatively small incremental investments.

To help us advance this technology, we signed a research and development agreement with [Utilidata](#), a supplier of voltage optimization and digital automation systems for our industry, to accelerate the application of digital control technologies to high value smart grid solutions. AEP is providing Utilidata access to our operations and planning expertise to help guide the next-generation of grid applications. The goal is to bring innovation to the market faster. We invested \$4 million in Utilidata because we believe their technology is a provider of innovation to the market.

This is an example of the mutual benefits of energy and technology companies working together to develop the modern grid. We need each other to test and standardize technologies that smoothly integrate with the grid and give customers the flexibility they want. By working together we fulfill a mutual need and achieve a common goal.

Of the approximate 6,000 circuits on our system, we have deployed VVO on 87 circuits. Because VVO is such an effective tool in achieving demand and energy savings, it can have an immediate negative impact on a company's financial results since most of the costs associated with serving customers don't decrease as customers use less electricity.

VVO is a next-generation energy efficiency program and regulators should support it in the same way they historically supported other energy efficiency programs. This is simply another tool in the toolbox

that enables AEP to create energy and demand savings for our customers. And there is widespread support for this approach.



Looking up at the 120-foot pole at Elcona Station in Elkhart, Ind. The station is part of Indiana Michigan Power's volt var optimization project, a distribution automation system.

In November 2012, the National Association of Regulatory Commissioners (NARUC) supported the adoption and rapid deployment of VVO. In addition, the National Electrical Manufacturers Association supports NARUC's call to advance VVO technologies.

Within AEP's service territory, the Michigan Public Service Commission and the Indiana Utility Regulatory Commission have approved plans for Indiana Michigan Power Company to qualify VVO as an energy efficiency program. The Oklahoma Corporation Commission has also approved VVO for a limited timeframe for the Public Service Company of Oklahoma.

We are actively discussing the application of this technology with regulators and stakeholders and need their support to enable us to achieve the significant levels of energy and demand savings that we know are achievable without financial harm to AEP.

Next-Generation Energy Company

The pivot to clean energy is accelerating the transformation of the power grid to optimize it for reliability, resiliency, efficiency, affordability and environmental responsibility. Technology, innovation and information are key drivers of this transformation. We must have appropriate planning, communication and engagement among all stakeholders to ensure the proper balance of technologies and infrastructure to prevent creating new risks to the grid.

The cost and maturity of technology is changing fast and impacting our business model. As we develop options for our companies to deploy, we are simultaneously working in our states to encourage public policies and regulatory actions to support them. We recognize that we have to take the lead if we want to innovate, or we risk our competitiveness. The technologies we are focused on and investing in today present the greatest opportunity for building the next-generation energy company.

The energy company of the future will be more complex, efficient and distributed. We are building a better network to make it easier for customers to plug in to the power grid when and how they want to, while providing quality, reliable power as efficiently and cost-effectively as possible.

A Smarter Network

Modernizing the power grid requires sustained, strategic investments. To build a network capable of providing benefits beyond what is in place today, we need reliable generation resources and a modern transmission and distribution system. At the same time, we have to maintain and operate a system that provides safe, reliable electricity to our customers, every day.

Some of our infrastructure is more than a century old and the legacy systems that make operational and control decisions for the major generation, transmission and distribution equipment that make up the grid are in the process of being transformed from analog to digital. This transformation includes



thousands of devices across the AEP system and construction of an AEP-owned fiber network.

As we modernize the grid, we deploy new technologies that generate real-time data, allowing us to determine the health of new assets. There is also an evolution under way to learn how to use the data we collect to better serve our customers, prioritize our resources and manage our work force. As we do this, we are making the grid more flexible and putting in place a self-healing grid that is more secure, reliable and connected.

AEP's underground network monitoring system will give our operating companies greater insight into the status and health of the underground networks.

AEP's Underground Distribution Network Monitoring project is a good example of grid hardening and modernization. It is the deployment of a robust monitoring system of the health and operational status of equipment that will support existing sensor technology as well as developing technology. When complete in 2018, we will have next-generation capabilities to handle the technologies and resources of the future, making our underground networks one of the first in the country to have this level of monitoring and control.

AEP is also deploying a continuous, online monitoring system for existing underground transmission systems. Implementing new monitoring technology, including analytics, will allow AEP to better assess the health of these existing, critical underground circuits, improving reliability. One pilot project includes the Davidson-Dublin 138-kV circuit, scheduled to be completed in 2016. Other underground transmission circuits will be upgraded over the next few years to develop and incorporate different types of new sensor technologies.

The Self-Healing Grid

AEP's gridSMART® initiative is the foundation for providing advanced grid infrastructure that is needed to realize the many potential benefits of the smart grid. AEP is deploying smart grid technologies across our service territory, with regulatory support.

Smart meters – a critical step in creating a smarter network – establish a two-way data connection between AEP and our customers, which is increasingly important as smart appliances and devices need more information from the grid to function optimally. Having smart grid technology helps us to pinpoint sources of customer outages with greater speed and accuracy, improving outage restoration capabilities. We have installed more than 1.6 million smart meters across our system and plan to deploy approximately 900,000 additional meters, with regulatory support.

Distribution automation circuit reconfiguration (DACR) is an important grid technology that significantly improves reliability of the power grid through real-time monitoring and reaction. DACR continuously monitors for potential electrical faults and isolates portions of the network when a fault occurs, strategically re-routing electric loads to available circuits to maintain energy delivery to the majority of customers. This is known as a “self-healing” system. A smart grid has the ability to locate and isolate problems within the network as they occur. With DACR, we can effectively split the network into islands that would be managed separately to prevent a larger event, such as cascading outages. As the repairs are made, controllers would prepare the island to rejoin the larger grid.

GRID MODERNIZATION ACTIVITY SUMMARY

| Company | Smart Meters | DACR Circuits | VVO Circuits |
|-------------------------------------|--------------------------------------|-----------------------------|-----------------------------|
| AEP Ohio | 136,800 complete 894,000 proposed | 86 complete 250 proposed | 17 complete 160 proposed |
| AEP Texas | 1,054,600 | 29 complete 15 proposed | N/A |
| Public Service Company of Oklahoma | 455,400 | 38 complete 4 proposed | 13 complete 24 proposed |
| Indiana Michigan Power Company | 10,280 | 32 complete 4 proposed | 33 complete 24 proposed |
| Kentucky Power Company | N/A | 6 complete 20 proposed | 24 complete 2 proposed |
| Appalachian Power Company | N/A | 29 complete 10 proposed | 0 complete 3 proposed |
| Southwestern Electric Power Company | N/A | 28 complete 0 proposed | N/A |

Data is approximate/estimated

DACR (Distribution Automation Circuit Reconfiguration)

VVO (Volt VAR Optimization)

As of March 2016

Technology Breakthroughs

As we do our part to modernize the grid, we are taking bold actions to diversify our energy resources, invest in new technology and optimize our existing infrastructure to meet changing customer demands. The result has been cutting-edge innovation from our employees and technology partners.

BOLD™ Transmission

Siting of large infrastructure requires collaboration with the public and landowners to find the best solution. AEP Transmission's new and compact line, called BOLD™ (Breakthrough Overhead Line Design), is a preferred design due to its lower profile tower and inherent electrical efficiencies, including greater capacity, lower audible noise and lower electromagnetic fields, that can reduce right-of-way land needs. A team of AEP engineers developed the high-capacity 345-kilovolt (kV) line design to move power over long distances; it is now being expanded to new voltage classes for different applications. BOLD's first application, a 22-mile rebuild of an existing 138-kV line in Indiana, is well under way and on track for a mid-2016 completion.

In 2015, AEP established [BOLD™ Transmission](#), LLC, a subsidiary of AEP Transmission Holding Company, to accelerate adoption of this next-generation line technology across the industry. PJM Interconnection, the regional transmission organization that oversees the transmission of bulk electricity in 13 states and the District of Columbia, approved a second deployment of BOLD technology in Indiana. A third deployment of BOLD for a wind farm interconnection in Texas was recently approved by the Electric Reliability Council of Texas, which manages the transmission grid that covers the majority of the state.

AEP believes there is a significant market for 230-kV BOLD lines because of an abundance of this voltage class. AEP is testing a 230-kV version of BOLD at the Electric Power Research Institute lab in Massachusetts. BOLD's value is significant, especially to replace aging infrastructure at 230-kV, since it provides a bigger increase in power-carrying capability that can be achieved cost competitively. BOLD could be useful in replacement and upgrade of aging infrastructure throughout the United States, including over 125,000 miles of 230-kV and 345-kV.



By packing more power in a compact design, BOLD provides 12 times the power carrying capability of the 138 kV structure, 33 percent more than the 500 kV structure, and 42 percent more than the conventional 345 kV structure. BOLD also maximizes capacity in a right-of-way and its low profile is designed for greater public acceptance.

BOLD Transmission has patents in the United States and Canada, with patents pending in Mexico, South Korea, China and the European Union, similar to those already approved by the U.S. Patent and Trademark Office.

The BOLD Edge

- Up to 40% - 60% more power-carrying capability than conventional designs.
- Facilitates renewable energy interconnection.
- Reduces challenges to long-distance transmission.
- Low profile wins greater public acceptance.
- Packs more power in a right-of-way.

Asset Health Center

AEP Transmission developed a system-wide analytical tool, called the Asset Health Center (AHC), to reduce unexpected equipment failures through enhanced real-time monitoring, enabling us to prioritize assets and resources. Phase one deploys in 2016, moving AEP Transmission closer to condition-based maintenance, which relies on ‘real time’ performance information of vital station equipment, such as transformers, circuit breakers and batteries, rather than time-based maintenance. Pinpointing weak assets on our system and correcting them improves our system reliability and efficient use of maintenance resources.

The AHC was developed for extra-high voltage (EHV) equipment with technology partner Ventyx/ABB. The AHC is implementing software to monitor lower voltage equipment (138-kV and lower) and has started a pilot program to monitor underground transmission facilities. We are also looking at how this technology may benefit our generation and distribution businesses. The next rollout of the AHC will target equipment at 138-kV and lower.

AHC benefits customers and shareholders by helping to:

- Reduce the consequences of equipment failure (and outages) with asset condition data, predictive analytics, and risk modeling.
- Achieve system reliability, power availability, high-quality performance and compliance goals.
- Optimize workforce productivity and safety by targeting maintenance where it is most needed.
- Prioritize asset replacements (investments).
- Reduce capital costs from unexpected failures.

Asset Health Center
Reduces equipment failures and
improves reliability



Transmission Re-conductoring Live Line

In 2015, AEP completed the longest and most complex “re-conductoring-while-energized” project in company history, with upgrades for two 345-kV transmission lines between Corpus Christi, Texas and the Lower Rio Grande Valley (LRGV). This project was unique because an energized re-conductor project of this size and length had never been attempted.

The project spanned nearly three years and involved careful installation of new conductor onto two existing and diminished 1970s era extra-high-voltage lines while they remained energized; plus upgrades to stations along the routes. Each re-conducted line branches 120 miles from the Lon Hill Station to separate destinations, North Edinburg and Rio Hondo stations, delivering much-needed additional power into the LRGV, including grid access to emerging wind generation and other resources.



Demand for electricity in LRGV has grown 80 percent since 1996 due to steady population growth and commercial development. Meanwhile, generating capacity has remained steady at about 1,600 megawatts (MW) during that 20-year period, not enough to handle season peak loads, such as the record 2,730 MW in the winter of 2011 when power was imported to meet demand. Forecasts predict load in the LRGV will climb to more than 3,000 MW by the end of the decade.

AEP is a finalist for the Edison Electric Institute's (EEI's) 2016 Edison Award, the electric power industry's most prestigious honor. The award recognizes distinguished leadership, innovation, and progress in advancing the electric power industry. AEP is being recognized for this re-conductoring project.

Fiber Optics

AEP is building its first substation protection and control system to be entirely operated by fiber-optic technology. Various U.S. utilities have installed components of a fiber-optic protection system while continuing to rely on traditional copper-based protection systems. AEP's installation will rely entirely on fiber-optic protection and is expected to be built in Ohio in late 2016. Thread-like fiber-optic wires will take the place of most of the copper wiring that would otherwise be required in the station. AEP's launch of fiber-optic technology is a collaborative effort with General Electric.

Although fiber-optic technology is decades old and a mainstay in the telecommunications industry, the energy industry has been slow to adopt it because hard-wired copper holds a time-tested and reliable performance record. Among the reasons for adopting fiber optics:

1. It matches the skillset of newly-trained engineers and technicians; to them, fiber-optics is the “new copper.”
2. Fiber is less vulnerable to interferences (such as those caused by lightning or high-voltage switching impulses) in the harsh substation electromagnetic environment.
3. The AEP-developed drop-in control modules (DICM), a standardized substation control house, can accept fiber-optic wiring and devices.
4. It connects customers to the grid faster, meeting their business needs.

Electromagnetic Pulse Disturbance Mitigation

High-impact, low-frequency (HILF) events are a growing concern in the power industry. These include natural events such as severe weather, pandemics or solar flares. HILF events also include man-made actions, such as cyber, physical, or coordinated attacks, including electromagnetic pulse (EMP) and intentional EM interference (IEMI) attacks. Policymakers are looking to the energy industry to develop an effective, affordable response based on scientific evidence and testing.

EMP refers to a very intense, short burst of electromagnetic energy that can impact electronic or electrical equipment. Man-made, high-energy EMPs result from the detonation of a nuclear or other high-energy explosive device. A HEMP (high altitude electromagnetic pulse) is a nuclear warhead detonated high above the Earth’s surface to produce more wide-spread EMP effects. HEMP detonation can occur with little or no warning, making mitigation based on operational strategies ineffective. Therefore, response to the HEMP threat generally comes in the form of hardening assets to reduce initial damage, and recovery to reduce the duration of the interruption.

The redundant nature of the U.S. power grid provides significant protection from a wide range of natural and man-made threats. In addition, AEP is implementing a number of mitigation techniques for further protection, including:

- Development of the Drop in Control Module (DICM), an EMP-resistant control house in the substation that shields the electronic equipment. The DICM is built using a metal exterior with special consideration to ensure bonding of metal members, improved grounding and cable entrances.
- Installation of power supply and communication cables with integrated shields. For example, individually shielded twisted pair cables with an overall grounded shield.
- Installation of filters applied at cable entry points to reduce high frequency, conducted energy, which can impact electronics.
- Incorporating EMP resiliency into new components, such as relays and communication systems through equipment manufacturers.

AEP is also piloting fiber-based protective relay systems that will provide enhanced shielding effectiveness by minimizing traditional copper conductors/cable penetrating the building. The benefits

of the fiber system will also provide an opportunity to install enhanced EMP solutions at the fiber cable entrances which have also been identified as an area of improvement.

AEP continues to be a leader in this area, by actively participating in and leading industry and regulatory hosted discussions, including the Electric Power Research Institute and the North American Transmission Forum EMP working groups.

Unmanned Aircraft Systems

In 2015, AEP assembled a multi-disciplined team to explore opportunities for using unmanned aircraft systems, or drone technology, for a variety of inspection applications across our generation, transmission and distribution system. Our generation business unit has used the technology for boiler furnace and boiler inspections that otherwise would require significant outage time, affecting customers. It would also have required building scaffolding to gain access to the equipment for inspection. Using drone technology proved to be more cost-effective, safer for our employees and produced high-quality results.

Additional opportunities to use drone technology are being explored within each business unit, along with an effort to engage in the development of legislation and regulations associated with it. We are also exploring business case opportunities for owning and operating our own drone technology. AEP is working with the Electric Power Research Institute in a study to investigate the potential for increasing



worker safety and reducing transmission line inspection and maintenance costs by using drone technology.

AEP is exploring opportunities for using unmanned aircraft systems, or drone technology, for a variety of inspection applications across our generation, transmission and distribution system.

Electric Office

A new geographical information system called Electric Office has been deployed to give us greater control of automated circuits by integrating our mapping system with the outage management system and our new distribution Supervisory Control and Data Acquisition (SCADA) system. Once in place, our dispatchers will be able to see what's happening on the system in real-time, allowing us to minimize impacts to customers. Starting in 2016, the SCADA system will be implemented across AEP, one company at a time, with an estimated completion in 2018. Once it is fully operational, we will be better able to pinpoint the location of problems and more efficiently deploy resources. SCADA is important as

the use of local generation on our system grows because it allows us to “see” how those resources are interacting with the power grid and make real-time adjustments.

Transmission SCADA

Transmission uses SCADA to perform centralized monitoring and control of field sites, including monitoring alarms and processing associated with analog and status data. Based on information received from remote stations, automated or operator-driven supervisory commands can be sent to remote station control devices.

These SCADA systems and the remote station control devices continue to mature and evolve as technology changes. AEP Transmission has implemented a new Remote Terminal Unit platform into the station design to improve the interface between the next-generation Intelligent Electronic Devices within the substation and the centralized SCADA systems. This SCADA information is being used to respond to station alarms and system conditions. Additionally, field employees are using mobile devices to report station entry/exit, and further uses of mobile devices, such as electronic switch orders, are in various stages of implementation.

Regulations and Policies

Investor-owned, vertically integrated energy companies have built, operated and maintained the power grid from end-to-end for many years. A key principle of how these companies operate is known as the Regulatory Compact, which is the traditional model of regulation, where customers in each customer class are treated equally and regulators judge the prudence of investments and allow recovery of these costs of service along with a reasonable return on capital. AEP is engaging with regulators and policymakers at the state and federal levels to explore how regulatory models can evolve as we modernize the grid to respond to new paradigms in meeting customer needs.

Modernizing the Rules

Today’s customers are always plugged in and want the convenience of easy access to information, 24/7, from any device. The investments in new technology and infrastructure to reconfigure the power grid and the systems that deliver what customers want are critical to building the next-generation energy company.

Today’s growing demands on the power grid to ensure reliability and resiliency at a time of unprecedented growth of variable resources, the slowing of load growth, mandates to mitigate risk from cyber and physical threats, as well as ongoing environmental mandates make that model extremely challenging. Technology is constantly evolving but the regulations and public policies that currently govern the electric power industry are not keeping pace.

Modernizing the power grid is a prerequisite to realizing the full value from innovations – from energy efficiency, demand response, new electro-technologies such as electric vehicles, renewables and local generation, energy storage and programs and offerings that allow customers to optimize their energy

use. It will take time to obtain state or federal regulatory approvals to develop the infrastructure and systems needed to manage this new transactional grid. In addition, the regulatory recovery model will need to evolve to provide accurate pricing signals that ensure fairness to all customers. To achieve this, we must keep sustainability and fairness at the center of the dialogue.

Net Energy Metering

The growth of distributed generation (DG), also known as local generation, has raised new discussion about the value of the grid and who pays to use it. Although the current number of net energy metering (NEM) customers on the AEP system is relatively modest, it is increasing.

NEM customers do not go “off the grid.” In fact, NEM customers choose to stay connected and rely on the grid to support all of their on-demand electricity needs. They use the grid to import energy at times when their system is not meeting their instantaneous needs, and use the grid differently than non-NEM customers.

Public policies and rate structures established to encourage early development of local generation have led to unintended consequences that must be addressed. NEM tariffs were established to incent local generation, which has, indeed, occurred. Some NEM tariffs credit DG customers at the full retail rate, which includes both the costs of the energy itself, as well as the fixed costs associated with grid infrastructure (such as the distribution poles, wires and meter necessary to provide service to them). In essence, NEM pays the customer as if they provided all the products and services of a utility, including balancing the system, cyber security and administrative costs such as customer contact centers, when the customer truly only provides energy intermittently to the system.

When NEM customers use the grid under current pricing structures, they aren’t fully paying for the services they receive. Instead, these costs are shifted to other customers. Those who end up paying are customers who do not have local generation, including low-income and other vulnerable customers. This is unfair and ultimately, unsustainable.

This issue is being actively addressed in many policy and regulatory proceedings across the nation. Stakeholders are attempting to find solutions that continue to support customer desires to generate their own electricity with renewable resources at competitive rates, while also correcting the cross-subsidy



that causes all other customers to pay more for the benefit of local generation customers. AEP has been active in these policy debates and regulatory proceedings to address these issues and advocate for fair, equitable and sustainable solutions.

AEP has been active in net energy metering policy debates and regulatory proceedings to address issues and advocate for fair, equitable and sustainable solutions.

Capacity Markets

A significant financial risk for AEP is the outcome of annual PJM Reliability Pricing Model capacity auctions. The auctions are conducted three years prior to the delivery year, and determine the prices AEP will be paid for its unregulated generating capacity. These auctions have been historically volatile, with prices ranging from \$16/MW-day to \$174/MW-day. The 2015 auction for the planning year beginning June 1, 2018 through May 31, 2019, cleared at \$165/MW-day.

Capacity payments represent an important portion of an unregulated plant's income. AEP Generation Resources may experience increased revenue and earnings volatility due to its exposure to PJM's capacity market in addition to fuel and power prices.

The 2015 auction was the first base auction run under the new Capacity Performance (CP) rules. Approved by FERC in June 2015, the new CP rules were created largely in reaction to significant forced outages and fuel delivery challenges during the polar vortex of 2014.

FERC also allowed PJM to conduct supplemental auctions for 2016/17 and 2017/18. These supplemental auctions allowed units to re-offer for these delivery years if they could meet the higher availability requirements. The supplemental auctions cleared at \$134/MW-day for 2016/17 and \$151/MW-day for 2017/18, compared to the initial base auction prices of \$59/MW-day and \$120/MW-day.

The most significant change in the new rules involves the assessments to generators for non-performance. Beginning in 2016/17, if a unit fails to perform during a PJM emergency, it will be assessed approximately \$1,900/MWh in 2016/17, increasing to approximately \$3,500/MWh by 2018/19. This is significantly higher than under the previous rules, and the financial risk stemming from these higher rates were likely incorporated into the capacity offers for years beginning 2016/17.

Unregulated generation: AEP's unregulated generation will realize the initial revenue increase from the higher auction prices.

Regulated generation - FRR requirements: The June 2015 FERC order gave a three-year exemption through 2018/19 for Fixed Resource Requirement (FRR) entities from the Capacity Performance requirements. The FRR alternative is the self-supply option, in which a utility that owns enough generation to cover its own load requirements is not required to participate in the PJM capacity auction. This is primarily applicable to regulated states only. AEP has chosen this option for its integrated utilities since the inception of the PJM capacity market in 2007. FRR entities will become exposed to the capacity performance requirements in 2019/2020.

Our Strategy for Growth

AEP's strategy for growth is focused on our approach to investing capital and a commitment to continuous improvement that benefits our customers and shareholders. In spite of lower demand for our product, we are investing and innovating to become the next-generation energy company that provides

solutions customers want and long-term value creation for our shareholders. AEP is poised for success in a world where the electric industry and the power grid are becoming more complex. Our history of leading change and world-class engineering expertise are attributes that will lead us into the future.

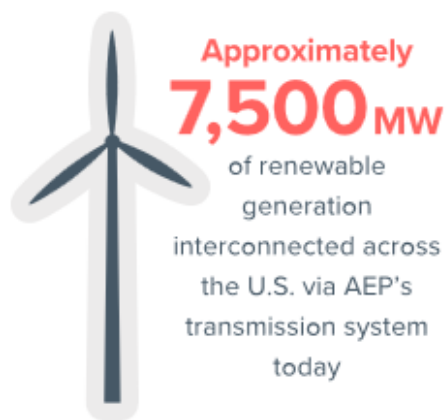
We are focused on bringing our investments closer to what our customers value (even if it is not least cost) while advocating for policies that fairly value the power grid. Our intent is to operate a modern grid that is reliable, sustainable and adaptable with new and emerging technologies to efficiently meet customer demands.

AEP is building upon a solid foundation to shape the next-generation energy company. We are deploying capital predominantly in our regulated business where it delivers shared value for customers and investors. Our projected annual 4 to 6 percent operating earnings growth rate is predicated on this strategy, as well as our commitment to continued focus on sustainable continuous improvement efforts and expense discipline.

Our transmission business is the major growth engine for AEP. The U.S. transmission system is in the midst of a major upgrade not seen in decades and AEP is among those making significant investments to modernize the grid. In addition to investments within our regulated footprint, we pursue projects and partnerships throughout North America that benefit communities in our traditional service areas and beyond.

Transmission is the great optimizer and, in fact, should be viewed as a resource. A robust transmission system is the key to ensuring the availability of a diverse generation mix (coal, wind, gas, etc.). It also facilitates interstate commerce and our national defense. To keep pace with our growing needs, aging transmission infrastructure will need to be replaced and the current system expanded to facilitate use of new technologies.

AEP Transmission is investing in the future by creating the infrastructure needed for electric reliability and economic growth. Upgrading and rebuilding existing infrastructure that is near the end of its useful life is equally important. High-capacity, extra-high voltage lines are more energy-efficient than lower voltage lines and offer part of the solution to a more reliable, flexible and resilient grid. In addition, new innovation and technology – such as AEP’s new BOLD™ transmission line design – is needed to ensure that our electrical grid continues to serve us well in the future.



Growing our business includes working with partners to modernize the power grid and pursuing projects competitively inside and outside of our traditional service territory. For example, Prairie Wind Transmission is a joint venture between Electric Transmission America, LLC (a 50/50 joint venture between subsidiaries of American Electric Power and Berkshire Hathaway Energy) and Westar Energy, which recently completed a \$158 million transmission line that delivers energy from Kansas to customers in Kansas and Oklahoma. AEP’s competitive

transmission affiliate, Transource Energy[®], LLC (Transource) pursues competitive, regulated transmission projects within and beyond AEP's service area under FERC Order 1000.

One project is being built by Electric Transmission Texas (ETT), a joint venture of subsidiaries of AEP and Berkshire Hathaway Energy Company. The other project is being jointly constructed by ETT and Sharyland Utilities. With the completion of these Valley projects, ETT is on track to have over \$2.9 billion in transmission assets by the end of 2016. ETT has several projects with various completion dates scheduled through 2025.

Through 2018, AEP Transmission Holding Company (AEPTHCo) is expected to add a billion dollars annually to AEP's rate base. In 2015, AEPTHCo contributed 39 cents per share to earnings – a reflection of its accelerated growth and future potential.

In addition to reliability, our investments in the power grid help to ensure security of the grid. Grid Assurance is an example of how the industry – and AEP – is preparing to recover from an event by ensuring we have access to critical equipment that often has long lead times for production.

A Proven Strategy

Some investors and other stakeholders want to know more about the impact that greater adoption of local generation resources, energy efficiency and demand response programs will have on reducing demand for centrally-generated electricity, and the potential impact to revenues. While it is anticipated that increased adoption of private rooftop solar would reduce the energy and capacity requirements of our regulated electric utilities, we plan for this in our integrated resource planning process.

AEP has a proven strategy of investing in our regulated businesses to benefit customers and deliver solid earnings growth and strong shareholder value. We will continue to invest in infrastructure that improves reliability, gives customers the clean energy they want and enhances the overall customer experience. This strategy allows us to earn a return on those investments, which is good for investors and customers.

We have consistently stated that earnings growth will be achieved through a combination of capital investment, rate recovery, identified sustainable cost savings and spending discipline. Through this combination of tactics, we will be able to achieve our earnings guidance.

Business Model Evolution

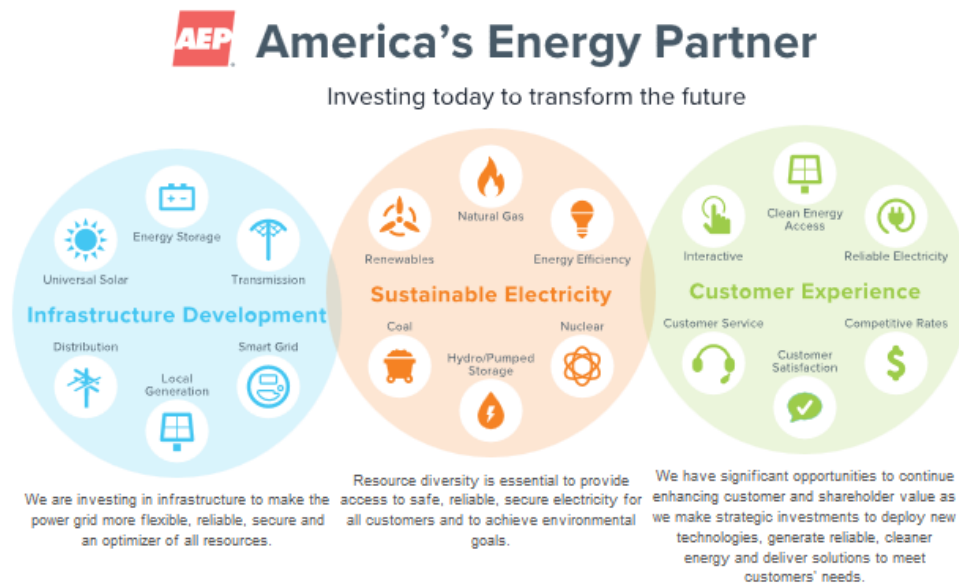
For more than a century, we have focused our business on the assets we built and the one-way flow of power to our customers from those assets. Today, we are thinking differently. Infrastructure development is central to our growth strategy, but the focus is on how the system responds to and meets customer demand; we are transforming our system to become the solutions-oriented energy provider of choice for our customers.

We have built a strong foundation for the future with a focus on enhancing the customer experience and creating shareholder value.

Our financial health is solid and we have a Regulatory Compact that supports investments in infrastructure to improve the customer experience and reliability of the grid. We are focused on bringing our investments closer to what our customers want and value, while advocating for policies that value the power grid. We are also building a culture of engagement, continuous improvement, innovation and Zero Harm among our employees.

Today, we are investing in infrastructure that makes the power grid more flexible and an optimizer of all resources and technologies. We are developing new skills in big data and analytics to help us better understand and serve our customers' needs, and leveraging the foundation we already put in place (through gridSMART® initiatives) to improve operational performance and reliability. And we are working with our regulators and policymakers to redefine the rules to support grid modernization. We are also investing in and partnering with companies to bring next-generation technologies to market faster, such as our investment in energy storage.

At the heart of our strategy is our people; an engaging culture is a prerequisite for everything we do. It drives continuous improvement, agility, our focus on safety, innovation and competitiveness. We are transforming our culture to be more customer-centric to address changing customer needs. As we do this, we are boldly transforming AEP to be the next-generation energy company.



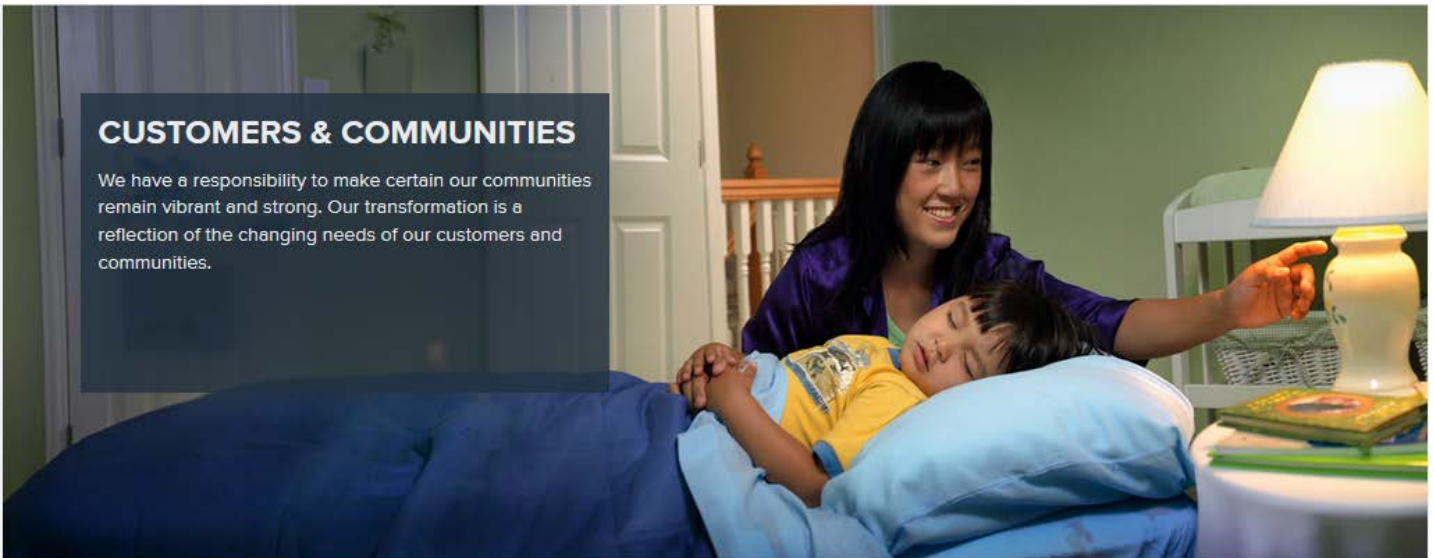
AEP's Foundation for the Future



We have a firm foundation in which to invest on behalf of customers, earn a fair return and grow earnings.

CUSTOMERS & COMMUNITIES

We have a responsibility to make certain our communities remain vibrant and strong. Our transformation is a reflection of the changing needs of our customers and communities.



HOME | CUSTOMERS & COMMUNITIES

CUSTOMER CONTACT & CARE

The customer experience encompasses every touch point we have with our customers, whether on the phone, through social media and outage alerts, with a line crew in the field, through billing and online transactions, or through the interactions our employees have while serving in the community. AEP is dedicated to improving the overall customer experience by providing our customers with programs and services that matter most to them.



[LEARN MORE >](#)

AEP and our employees play an important role in the economic viability of our communities. Whether through employment and wages, taxes and corporate philanthropy, or volunteer hours and economic development efforts, we actively engage and support local communities and economies in which we operate and serve.

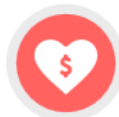
INVESTING IN LOCAL COMMUNITIES AND ECONOMIES

AEP is dedicated to building stronger communities by providing economic development opportunities to attract jobs, support capital investment and grow local economies. This adds value to AEP and the local communities where we live and work.



RELIABILITY

Through our grid modernization and infrastructure development efforts, we are improving grid security, reliability, and customer accessibility to clean energy.



CORPORATE GIVING

Corporate philanthropy is important to our communities because it helps enhance the quality of life, advances education and enriches communities.



SUPPLIER DIVERSITY

We believe that having a strong, diverse pool of suppliers is as important to AEP as it is to the business owners in our communities who do business with us.

Communicating with Customers

The customer experience encompasses every touch point we have with our customers, whether on the phone, through social media and outage alerts, with a line crew in the field, through billing and online transactions, or through the interactions our employees have while serving in the community. Increasing numbers of customers want the ability to access their bill and service information at any time, from any location, on any device.

One way we are improving our communications with customers is through mobile alerts. In 2015, AEP offered mobile outage alerts to its 5.4 million customers. But the technology is only as good as the information it delivers, which is why we have multiple efforts under way to improve our outage assessment capabilities to provide customers with more accurate and timely data. Customers can also sign up for alerts to start and stop service, report an outage and to be notified of bill payments.

As we learn more about what our customers want, we will be able to use the mobile alert communication channel to provide information about programs and services that matter most to them. Our customer analytics will get us there.

The Role of Social Media

Customers are the driving force behind how and where we interact with them. Increasingly, they are using social media, text, chat and other online tools to connect with us. Because they are always plugged in, they expect immediate response from us 24/7, similar to other online retail experiences. This is especially true during outages, when customers want real time, accurate information about restoration efforts.



In response, we are developing a long-term plan to give us a stronger online presence that would allow for expanded monitoring, reporting and analysis of the communications channels customers and other stakeholders are using to contact AEP. This includes constantly developing new content, including short videos, infographics and blog posts as well as using other social media channels, such as Instagram, because the use of pictures and videos tells our story so well.

AEP and its operating companies actively engage through social media. In 2015, AEP managed 14 Facebook pages, 14 Twitter handles, eight YouTube channels, three Instagram accounts and one corporate LinkedIn page. Investor-related information and power outages were the two most talked about categories via social media, followed by company and Ohio news and environmental-related posts.

Social media also allow us to:

- Quickly disseminate information and correct misperceptions
- Address customer concerns
- Convey corporate branding
- Share our community involvement
- Educate the public on electric safety
- Gauge customer perceptions
- Attract new employees
- Communicate and educate customers on company initiatives, such as energy efficiency

Customer Contact, Customer Care

In 2015, customers conducted more than 19.6 million online transactions, or an 11.4 percent increase from the previous year, and web traffic also increased for desktop and mobile users. Online bill pay and electronic billing is a win-win for us and our customers; it is more efficient, eco-friendly and enhances customer satisfaction.

COMMUNICATING WITH OUR CUSTOMERS – 2015



173,439

customers who signed up for severe weather and outage-related mobile alerts



125,832

customers who signed up to receive mobile alerts



25%

of customers signed up for paperless billing (compared to 22% in 2014)



Approximately

50% customer

bill payments being processed online and electronically

In addition to self-service options available on the web and over the phone, we are dedicated to providing customers with access to professional and helpful customer operations associates. In 2015, our Customer Operations Centers handled nearly 23 million customer calls, a 5 percent increase from 2014. As we improve our contact center capabilities, we expect those numbers will decrease as more customers opt for self-serve or online options. We also hope to reduce the number of customer calls, using big data and analytics to better understand why customers are calling and whether they can be better served using online options. In 2015, AEP's Customer Operations Centers were awarded the Certification of Excellence for a seventh time by Benchmark Portal, a global leader in contact center benchmarking, certification, training and consulting. The certification recognizes AEP's effective use of people, processes and technology when serving customers.

If we don't deliver unique products and services to our customers, our competitors will. That is why AEP Energy, our competitive business unit, is focused on providing customers with solutions such as long-term agreements, full end-to-end energy management solutions and being their trusted energy provider. Our Key Accounts team is doing the same thing for our large commercial and industrial customers on the regulated side. Our customers want to focus on their business, not ours. Our job is to give them what they need, when they need it.



Energy Assistance

From time to time customers may experience unexpected financial hardships. These hardships can put customers in a tough situation where they have to choose between paying their energy bills and feeding their families. AEP has several initiatives and resources that help customers manage their electricity bills and reduce their energy consumption, including energy efficiency programs, rebates and incentives, monthly payment plans and energy assistance grants and programs.

ENERGY ASSISTANCE PROVIDED THROUGH AEP TO HELP CUSTOMERS PAY THEIR ELECTRIC BILLS

in millions

| | 2013 | 2014 | 2015 |
|-------------------------------------|---------------|---------------|---------------|
| Appalachian Power | \$21.5 | \$24.4 | \$24.6 |
| Kentucky Power | \$2.3 | \$2.6 | \$2.5 |
| Indiana Michigan Power | \$8.5 | \$6.5 | \$8.3 |
| AEP Ohio | \$10.0 | \$14.2 | \$15.7 |
| Public Service Company of Oklahoma | \$9.7 | \$10.0 | \$9.1 |
| Southwestern Electric Power Company | \$5.6 | \$5.3 | \$5.7 |
| Totals | \$57.5 | \$62.9 | \$65.8 |

- Approximately \$65.8 million in federal and private energy assistance.
- More than 7,873 pledges totaling \$2.3 million in energy assistance pledges from our self-serve agency websites.

AEP provides several options to help customers save energy and reduce their overall costs while keeping their homes comfortable and safe. Learn more about the many energy assistance programs offered across AEP's service territory:

- [Low Income Home Energy Assistance Program \(LIHEAP\)](#)
- Appalachian Power: [Take Charge Virginia](#), [West Virginia Utility Assistance Program](#), [Neighbor to Neighbor Fund](#)
- AEP Ohio: [Ohio PIPP Plus](#), [Community Assistance Program](#), [Neighbor to Neighbor Program](#)
- Public Service Company of Oklahoma: [Light A Life Fund](#)
- Southwestern Electric Power Company: [Neighbor to Neighbor Fund](#)
- AEP Texas: Targeted Low Income Program ([Texas Central](#) and [Texas North](#))



Customer Satisfaction

Customers judge their experience with any company in terms of cost, quality and service. They also measure value by how a company responds when something goes wrong. And their perceptions of AEP can directly impact regulatory and financial outcomes, as well as our reputation.



Demonstrating that we care about our customers in every interaction is the hallmark of a positive customer experience. Providing reliable, quality, affordable service is just the beginning. We have to understand and anticipate what our customers want and be ready to meet those expectations. One way to measure our performance is through customer satisfaction surveys.

AEP actively engages with residential, commercial and industrial customers using phone and online surveys,

including the J.D. Power Electric Utility Residential Customer Satisfaction StudySM. The 2015 survey measured satisfaction among 140 electric utility brands in the U.S. Satisfaction is examined across six factors: power quality and reliability; price; billing and payment; corporate citizenship; communications; and customer service. AEP's results show that overall customer satisfaction is moving in the right direction; AEP's operating companies in the survey recorded improvements in overall customer satisfaction from the prior year. However, we can do better and that is our commitment.

One thing we do know is that technology and information are fundamental to customer satisfaction. We have action-oriented, measurable customer experience work plans for each of our operating companies to help us prioritize our efforts. We continue to promote outage and billing text alerts and email alerts to keep our customers informed. In 2016, we will engage customers in new ways. For example, we are creating customer research panels to test messaging, get feedback on programs and services, and measure perceptions of our company.

Reliability

Reliable electric service is a critical public need. Our nation's economic success and security depends upon our ability to preserve this fundamental resource. We expect electricity to be there all the time to power the machines, electronics and systems that drive just about everything we do. As we modernize the grid, we are improving reliability for customers.

Reliability Performance

We track our transmission and distribution reliability performance with several metrics that are used industry-wide. These indicators show us how reliable our system is and how our customers are impacted when it is not. They do not include major storms. The investments we are making in our transmission and distribution system improve reliability and operating efficiency and prepare the system for new technologies.



99.96%

average percentage of time in a year that customers have uninterrupted electric service

The System Average Interruption Duration Index (SAIDI) represents how many minutes the average customer experiences an interruption in electric service in a given year. During 2015, the AEP System SAIDI was 229.5 minutes, excluding major events, a 4.4 percent increase from 2014. The growth of vegetation contributed to about 32 percent of SAIDI results and failure of distribution line equipment accounted for about 21 percent of SAIDI.

ANNUAL AEP SYSTEMWIDE RELIABILITY INDICES

| | 2013 | 2014 | 2015 |
|--------------------|--------|--------|--------|
| SAIFI ¹ | 1.329 | 1.375 | 1.468 |
| SAIDI ² | 200.2 | 219.9 | 229.5 |
| CAIDI ³ | 150.6 | 160.0 | 156.3 |
| ASAI ⁴ | 99.96% | 99.96% | 99.96% |

¹ System Average Interruption Frequency Index is the number of interruptions an average customer experiences in a year.

² System Average Interruption Duration Index measures how many minutes the average customer experiences an interruption in electric service in a given year.

³ Customer Average Interruption Duration Index is the length of time it takes to restore service when an outage occurs.

⁴ Average System Availability Index represents the average percentage of time in a year that customers have uninterrupted electric service.

The System Average Interruption Frequency Index (SAIFI) represents the number of interruptions experienced by customers in a year. During 2015, the system’s SAIFI was 1.468, a 6.8 percent increase from 2014. Vegetation and distribution line equipment failures were also the major contributors to SAIFI performance.

The Customer Average Interruption Duration Index (CAIDI) represents the average length of time it takes to restore service when an outage occurs. AEP’s 2015 CAIDI was 156.3 minutes, a 2.3 percent decrease from 2014.

Reliability Investments

Maintaining the approximately 264,000-miles in our transmission and distribution network comes with an array of challenges while we are upgrading the infrastructure to meet demands and changes in our generation portfolio. These include the age of our infrastructure, the threat of external interruptions, the transformation of our generation fleet, the difficulty of siting new facilities, new and future environmental regulations, and the magnitude of investments needed. In response, we are investing in infrastructure and using technology to prevent and mitigate service disruptions and to better communicate with our customers.

Vegetation-related outages and equipment failure are among the biggest challenges to AEP’s service reliability. Managing vegetation on our rights of way is a key to maintaining transmission and distribution system reliability. AEP manages the trees and vegetation around power lines using a combination of performance-based (such as targeting low performing circuits) and cycle-based

maintenance strategies. Maintaining a regular tree-trimming cycle is a significant expense that directly affects customer bills and satisfaction.

During the past five years, AEP has invested more than \$1.49 billion in vegetation management, including \$348 million in 2015. The issue of reliability has prompted several states to consider or implement shorter intervals between tree trimming programs.

Severe weather events have made it clear that electric distribution and transmission systems need to be made more resistant to damage from vegetation during major storms. Over the past several years, AEP and our operating companies have received approvals from state commissions in Virginia, West Virginia and Kentucky to implement vegetation management programs, moving tree-trimming and other vegetation management to a three- four- or five-year cycle, to lessen future storm impacts. Four-year vegetation management cycles have already been established in Oklahoma and Ohio.

At the end of 2015, [Appalachian Power](#) concluded its three-year vegetation management pilot program in Virginia. This program allowed the company to trim, remove, or treat trees and brush near electric facilities on 30 distribution circuits across its Virginia service territory. Program work was completed on approximately 2,200 miles of overhead line.

Vegetation-related interruptions to customers on these circuits showed a nearly 40 percent improvement in frequency and 31 percent improvement in duration.

In addition to vegetation management, we are investing in new infrastructure to improve reliability for customers. For example, Appalachian Power will begin construction in 2016 on a project to improve reliability in southwest Virginia. The Duffield Area Improvements project is an estimated \$14 million investment in transmission upgrades. The need was identified following a period of extreme weather during winter 2014. Extreme weather conditions could create stress on the existing system and lead to power outages. In addition to improving reliability for the region, the project will provide a modern transmission system that can enhance local economic development. The project is expected to be completed by the end of 2017.

A second transmission project will bolster the transmission grid in four Virginia counties. The Roanoke Area Switching Improvements Project is an estimated \$30 million investment in the region with upgrades to at least 14 area substations. Construction is expected to be completed in the fall of 2017.

Grid Security

One physical threat to the electricity infrastructure is severe weather. When weather causes power outages, there are financial costs, as well as political, reputation and social risks, especially when the disruption is prolonged. We cannot prevent power outages, but we can take storm-hardening measures to



40,000

Transmission Miles

224,000

Transmission Miles

reduce the damage from a major event, improve recovery time when a disruption occurs, reduce the number of outages and lower the costs to customers.

In 2014, AEP implemented new design criteria to strengthen, or harden, the distribution system. We now design new and replacement poles to withstand wind speeds and ice accumulation that exceeds the National Electrical Safety Code requirement for our service territory. In 2015, more than 95,000 poles were designed using the new storm-hardening criteria across the AEP system.



These hardening measures are predicted to increase the strength of electric structures by at least 25 percent with nominal increase in cost. We also developed an assessment tool to help us determine where to deploy capital funds to maximize the benefits of grid-hardening initiatives. Among the criteria we are using include the number of customers served; the type of customer (how many on a particular circuit are considered “critical” customers, such as hospitals and nursing homes, law enforcement agencies and water or

wastewater facilities); the age of the poles; and the average duration of outages. This allows us to put our resources to work where they deliver the most value for our customers.

Nationally, and within our service territories, hardening, reliability and grid modernization initiatives have garnered support from state utility commissions.

AEP is among other utilities participating in the [Electric Power Research Institute’s three-year Grid Resiliency Project](#). Started in 2013, the project will provide our industry with tools and strategies to improve the distribution system’s ability to withstand severe weather events.

EPRI’s research ranged from physical failure modes of components to documenting strategies such as storm restoration and vegetation management, to applying modern technologies such as circuit automation. In addition, the research looked at the costs/benefits of placing overhead lines underground and developed a model to help prioritize resiliency investments.

The Grid Resiliency Project benefited AEP by providing views of practices across a large, representative cross-section of the industry, and increasing our understanding of what occurs when distribution lines are coated with ice and snow or impacted by high winds and falling trees.

AEP focuses on three areas to manage service restoration during large-scale power outages:

- **Use of the Incident Command System (ICS)** – This nationally known crisis management tool is a standard for responding to small and large emergencies and incidents.

- **Technology improvements** -- Introducing new tools and improving our systems to better manage workload during major events and to provide more timely and accurate information to customers and other stakeholders.
- **Process improvements** – Standardizing our assessment process and implementing a number of restoration process enhancements that will improve how we manage our crews and other resources.

Reliability Compliance

The [North American Electric Reliability Corporation \(NERC\)](#) develops and enforces rules and standards protecting the North American bulk power system, which serves more than 334 million people. In addition to developing reliability standards, NERC also conducts annual reliability assessments, monitors the bulk power system and educates, trains and certifies industry personnel. These rules and standards are constantly evolving, and they affect virtually everything we do in planning, operating, maintaining and protecting the grid on a daily basis.

We engage our employees through continuous communication about their contribution to AEP's reliability compliance. This includes basic facility security measures, such as displaying an employee identification badge at all times; following facility access control policies like escorting visitors in secure areas; and maintaining strong passwords. Additionally, NERC requires a rigorous program to maintain and operate bulk electric system protection equipment. These security, operations and maintenance practices are necessary and effective in preserving the integrity of the services we provide and contribute to the safe operation of our assets.

The reliability standards in place today require processes and procedures to maintain and advance the reliability and resiliency of the bulk electricity system. Noncompliance with NERC reliability standards can lead to serious financial consequences and reputational risk. Maintaining a culture of compliance has been a priority for us and is reflected in the 2015 NERC audits.

In the fourth quarter of 2015, AEP went through two rigorous NERC audits, which covered Operations and Planning NERC standards. The auditors focused, in more detail than the past, on a reduced scope of requirements as a result of their newly implemented risk-based approach to compliance. Auditors requested supporting data for AEP's procedures, policies and specific safeguards, and conducted on-site investigations and personnel interviews.

Although AEP officially received three possible minor violations in the audits, the auditors recognized AEP for its progress in achieving a strong compliance culture and identified several areas of best practices.

In addition to audits that focus on what is required today, we also need to be prepared for what might be required tomorrow. To that end, AEP participates in NERC's cycle of enhancing existing and creating new requirements. AEP is in the final stages of achieving compliance with the most recent Critical Infrastructure Protection (CIP) Standards, which has an enforcement date of July 1, 2016.

We are testing many of our CIP processes in a trial compliance period in preparation for the deadline. Furthermore, AEP will be implementing the latest version of the protection system maintenance and testing Reliability Standard, PRC-005-6, which includes various scope and terminology changes.

Risk-Based Compliance Monitoring

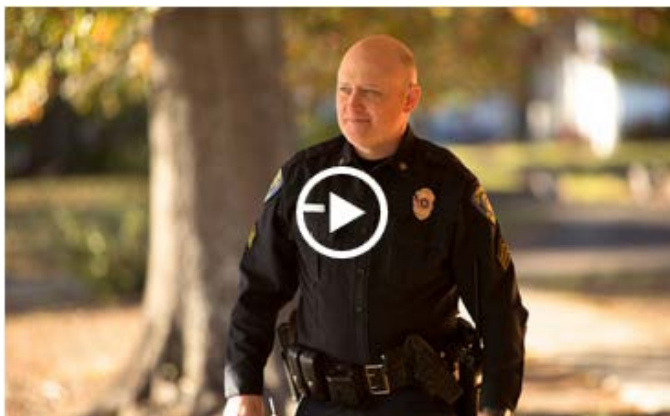
Throughout 2015, NERC implemented risk-based compliance monitoring, which arose from its Reliability Assurance Initiative (RAI). Risk-based compliance monitoring allows NERC to focus its compliance monitoring activities around certain risk elements. NERC initiated RAI in 2012 as a means of shifting to a more collaborative process of identifying reliability risks and using that information to better gauge future compliance monitoring and enforcement efforts. On Feb. 19, 2015, FERC approved the transition to a risk-based approach, pending some modifications. We agree that this new reliability philosophy is much more effective and efficient because it allows us to focus on higher-risk issues, thereby boosting system reliability.

Supporting Our Communities

AEP and our employees play an important role in the economic viability of our communities. Whether through employment and wages, taxes and corporate philanthropy, or volunteer hours and economic development efforts, we actively engage and support local communities and economies in which we operate and serve.

Corporate Giving

Corporate philanthropy is important to our communities because it helps enhance the quality of life, advances education and other worthy endeavors, and enriches communities. No matter how big or small the effort we are personally committed to making positive change. In 2015, AEP and the American Electric Power Foundation donated approximately \$13.5 million to support 1,800 community organizations.



Contributions are made primarily in the areas of education, basic human services, such as hunger and housing, safety and health, and the environment. In the area of education, preference is given to grades pre-K through 12 in the fields of science, technology, engineering and mathematics (STEM).

In 2015, the AEP Foundation collaborated with Ashland Community and Technical College in Ashland, Ky., to provide an \$815,000 grant - expanding AEP's signature Credits CountSM program to aid eastern Kentucky's Lawrence County Schools. Another \$800,000 grant was announced in early 2016, to expand

the Credits CountSM program to Ivy Tech Community College Marion, IN campus in the Indiana-Michigan service territory. The grants will be distributed over five years.

Credits CountSM is a five-year, dual enrollment program, created by the AEP Foundation, to help students pursue college level STEM education and careers while completing their high school diploma.

PHILANTHROPIC GIVING

Corporate & AEP Foundation

| | 2014* | 2015 |
|---------------|---------------------|---------------------|
| Arkansas | \$326,867 | \$39,000 |
| Indiana | \$1,700,078 | \$1,228,797 |
| Kentucky | \$579,538 | \$253,617 |
| Louisiana | \$1,206,654 | \$699,827 |
| Michigan | \$1,284,456 | \$192,146 |
| Ohio | \$12,982,388 | \$6,943,820 |
| Oklahoma | \$795,617 | \$432,352 |
| Tennessee | \$17,171 | \$18,400 |
| Texas | \$1,941,808 | \$1,538,932 |
| Virginia | \$824,173 | \$446,033 |
| West Virginia | \$1,655,935 | \$920,528 |
| Other** | \$1,978,006 | \$806,628 |
| Total | \$25,292,690 | \$13,520,081 |

* Corporate philanthropic giving in 2014 included pre-payments to select organizations that were earmarked for use in 2015 & 2016.

** Giving to organizations outside AEP's Service area or those that benefit multiple states

The program engages students' families and provides the opportunity for students to graduate from high school with at least 12 college credits toward a career-ready certificate or toward a college degree in STEM fields that may include engineering, energy, the environment or information technology.

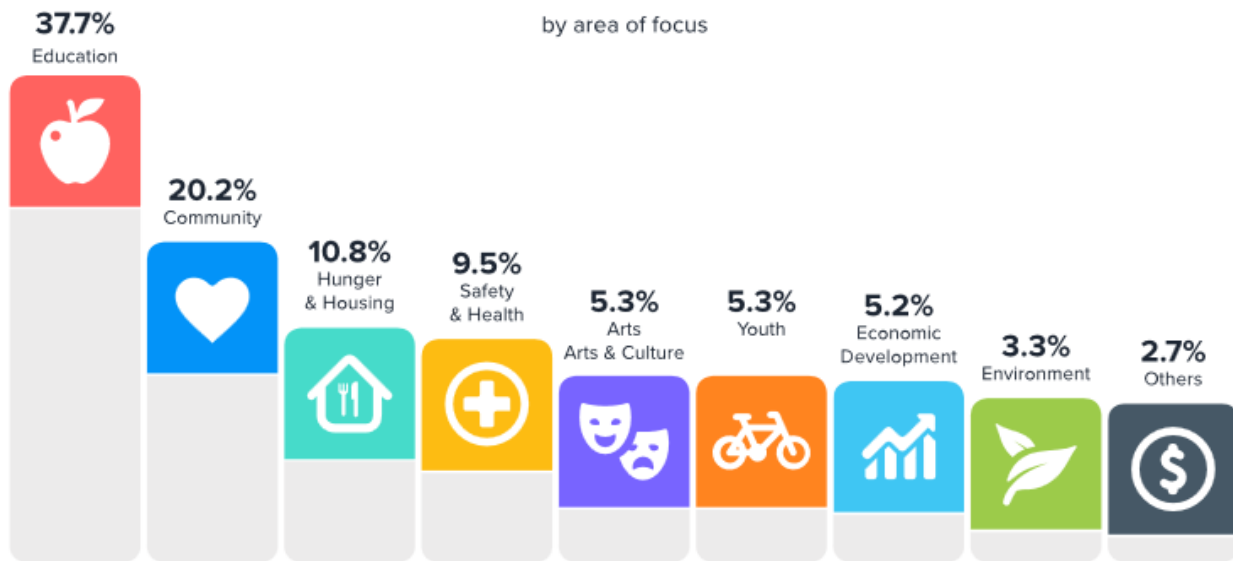
Since the program launched in 2013, the Foundation has committed more than \$11 million over multiple years for Credits Count in five AEP operating companies' service areas in Ohio, Louisiana, Oklahoma, Kentucky and Indiana.

The AEP Foundation also supports local housing efforts, such as the Shreveport Community Renewal for its Friendship House program. In 2015, the AEP Foundation donated \$25,000 to fund another unit in the program, which provides a variety of services to low-income, high-crime neighborhoods. Community coordinators and their families live in the five Friendship Houses located throughout Shreveport and Bossier City in La., building trusting relationships and serving as catalysts for rebuilding safe and caring neighborhoods.

In Columbus, the Foundation also committed \$300,000 as part of its second installment of a \$1.5 million, five-year grant to the Community Shelter Board. The Community Shelter Board oversees funding for homelessness prevention, emergency shelters, and housing services.

CORPORATE CHARITABLE GIVING IN 2015

by area of focus



Volunteerism

Corporate philanthropy is one way we support our local communities. Another is through our employees, many of whom selflessly and generously give their time and resources to support their communities. Our employees serve as social change agents, whether donating time and effort through employee volunteer programs, such as local United Way campaigns or serving on local boards and commissions. Our employees can also be found leading youth groups, coaching Little League teams and protecting their communities as volunteer firefighters or auxiliary police officers.

Other Community Commitments Made in 2015:

- 750,000 of meals donated to the Mid-Ohio Foodbank through AEP's employee- and retiree-led Operation Feed campaign in 2015.
- Kentucky Power (KPCo) received the 2015 Corporate Partnership Award for its employee volunteer efforts with the Kentucky River Area Development District and its annual Senior Day Games. KPCo has served as the primary corporate sponsor of the event since it began in 2002 – donating money and volunteer hours.
- More than 300 Appalachian Power Company employee and retiree volunteers visited classrooms in Virginia, West Virginia and Tennessee for its "Read to Me Day" program in 2015. In addition to classroom visits, APCo has donated nearly 5,000 books to school libraries since the program began in 2001.

Economic & Business Development

Building strong, vibrant communities requires an investment that goes beyond dollars and cents. AEP's [Economic and Business Development](#) (E&BD) team puts its expertise and connections to work, helping

local communities attract and retain businesses and jobs. From site certifications to attracting foreign investment to our service territory, the E&BD team connects customers with communities.

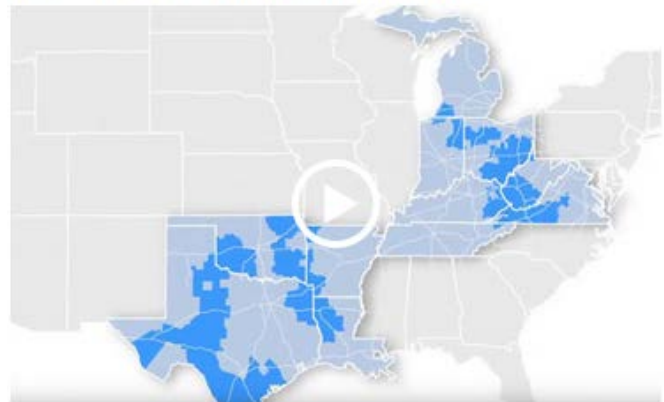
In 2015, the E&BD team worked on 170 business attraction and retention projects that are expected to create 22,500 jobs in our communities, including projects from companies such as Energy Transfer Partners, Cheniere Energy, Markwest Energy, M&G Chemicals and Kinder Morgan.

AEP - Your Business Partner

The E&BD team provides comprehensive location advisory services to companies looking to expand or locate new operations, including property searches and screening; custom community and site analysis; and introductions to local economic development partners and industry resources.

The team has recently launched a new and improved website – www.aeped.com – that provides companies and site selection consultants with essential information about locating and expanding in AEP's 11-state territory. Site selection typically starts on the Internet, so it is critical to make a compelling case about opportunities that exist in your region. The website features detailed information on AEP states and premier certified sites, as well as several interactive mapping tools that provide demographic and business data about AEP-served counties and a tool to tell users if their location is served by AEP.

AEP - YOUR BUSINESS PARTNER



For several years, the E&BD team has built a portfolio of well-prepared sites in our service territory to meet the needs of expanding companies. These sites have undergone a rigorous certification process to ensure they are ready for immediate development. They reduce the risks associated with development and accelerate speed to market by providing detailed information, including price and availability, utilities, access, environmental concerns and potential development costs.

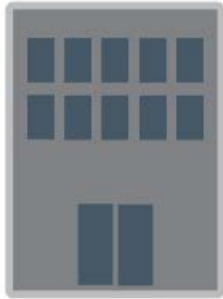
Italian automotive supplier, ELDOR Corporation, announced its decision in March 2016 to locate its first U.S. production plant on an AEP certified industrial site in Botetourt County, Virginia. ELDOR will invest \$75 million and plans 350 new jobs at the facility over the next five years. In addition to the Botetourt site, AEP has, as of March 2016, certified and is actively marketing 12 other sites for industrial use, 10 sites for data center development and six sites for food and beverage processing.

In 2015, the E&BD team launched its foreign direct investment (FDI) strategy. FDI is a key source of capital, job creation and innovation. The United States and AEP states in particular, are attractive and competitive destinations for FDI. In collaboration with state and other economic development partners, AEP is working to attract international investment into our service territory. We have hired consultants in five key markets: Canada, China, Germany, India and Japan.

Amazon, the largest Internet-based retailer in the United States, announced in March 2016 that it selected AEP Ohio's service territory in central Ohio as the location for its \$1.1 billion investment in three new data centers. AEP's valued customer service, comprehensive economic and business

Two Amazon distribution centers

BRINGING
2,000
JOBS
TO OHIO



development services, and reliable power delivery solutions were a few key reasons that persuaded Amazon to choose suburban Columbus. The E&BD team helped the large Internet retailer identify sites for its data center development and AEP Transmission Planning provided service delivery plans to each site.

AEP's experience and technical know-how allowed us to work on Amazon's accelerated timeframe and provide temporary electric to service to each site while permanent service buildout is in progress. Also, because of the strength and breadth of AEP's transmission system, Amazon is able to access clean energy

alternatives in the PJM Marketplace to power its operations. Central Ohio also awaits construction of two Amazon distribution centers that could bring more than 2,000 jobs to the area. One center is expected to be served by [AEP Ohio](#).

Our strong relationships with state and local development officials, workforce agencies and other utilities are among the reasons customers want us to be their energy advisor. Our business is more than just making electricity; it's about making connections with communities, businesses and people. In addition to our corporate E&BD efforts, our operating company economic development initiatives include grant programs for communities and businesses, community and site marketing assistance, and ally training on topics such as workforce development, selling strategies, site readiness and business retention and expansion.

Public Safety

Protecting the public from unsafe contact with our electrical equipment is a challenge and we are always looking for better ways to get important information to our customers and to the public. As an industry, we continue to be concerned with the number of people from the public who come into contact with power lines and electric equipment.

Those at risk range from billboard installers and highway construction workers to homeowners doing home improvements and thieves who steal from substations and other equipment. Our industry is active in educating the public about the danger of coming into contact with live electrical equipment as well as promoting how to safely work around facilities.



In 2015, AEP re-launched our public safety campaign using local and cable television, and online media placements. The ads aired across AEP's 11-state service territory and were produced in both English and Spanish for select markets.

Despite our efforts, we experienced 11 public fatalities in 2015. Four were the result of vehicles crashing into utility poles, and six were caused by contact with our electrical facilities. This was fewer than in 2014, when we experienced 16 public fatalities, including one that resulted from copper theft. However, we continue to strive for Zero Harm.

Sustainable Procurement

We work with fuel and nonfuel suppliers to drive continuous improvement and efficiencies within the supply chain, while improving environmental and safety performance. We ask suppliers about their sustainability strategy and activities through our procurement process, and we advise them of opportunities to help them reduce or mitigate their impacts on natural resources.

Non-fuel Suppliers

AEP buys millions of dollars in goods and services every year, ranging from chemical solvents and office supplies to vehicles and industrial equipment. As a large company, we are able to manage costs by negotiating prices, being strategic about sourcing and managing inventory. By applying an integrated supply program model for our procurement activities, we are able to look at the whole value chain from sourcing through inventory. Our goal is to be an industry leader in procurement performance, cost and value by 2018.

One way we are improving efficiency is through strategic sourcing - optimizing what we buy and how we buy it. Our procurement team is getting involved earlier in the purchasing process and standardizing the process by educating employees on best procurement practices. We are looking at the total cost as well as end-of-life value, financial and environmental impacts. We are also using different forms of technology, such as bar code scanning through mobile devices to capture, store and share instant data. This type of technology allows increased accuracy, and gives us the ability to instantly communicate with others throughout the company.

Cybersecurity poses an increasing risk within our supply chain. As data breaches increase, so does the concern for how to protect our systems, to which many of our suppliers have access. AEP's Procurement team is working very closely with our Enterprise Security team to address these concerns. We are implementing a screening process and developing criteria to identify the high-risk suppliers to help prioritize our efforts. Learn more about AEP's approach to cybersecurity.

Supplier Diversity

One way we can be a leader in supply chain and procurement practices is by ensuring we have a diverse supplier base. Increasingly, we are receiving inquiries about our supplier diversity program. This is an area we are working to expand beyond a compliance-based program towards best practice. We believe

that having a strong, diverse pool of suppliers is as important to AEP as it is to the business owners in our communities who want to do business with us. We are strengthening this network by identifying and helping to qualify small, diverse and competitive suppliers to be part of AEP’s supplier portfolio to compete for our business.

We are building a business plan to establish a program that will lead us to best practice for supplier diversity. This will add value to AEP and the local communities and economies where we conduct business and where our employees live and work. It will also help us achieve the cost savings and level of service we expect and need from our suppliers.

SUPPLIER DIVERSITY – 2015



Fuel Suppliers

Since 2009, AEP has worked with its coal suppliers to survey their environmental, safety and health performance. We have conducted five [surveys of our coal suppliers](#), a commitment we made to stakeholders to better understand the life cycle of coal, its impact on the environment, how our suppliers are addressing those impacts and sharing of leading practices.

The 2014 [AEP Sustainability Survey of Coal Suppliers](#) repeatedly showed our suppliers outperforming the national average in safety and health performance and an improved environmental performance over the years. We also have seen an increased commitment to sustainability reporting. Due to the rapid changes in the coal and electric industries, AEP suspended the coal supplier survey in 2015.

We respond annually to the [Carbon Disclosure Project’s \(CDP\) Supply Chain Survey](#). This survey aims to drive action on climate change among both purchasing companies and their suppliers. The survey provides us with a different platform to be transparent about our sustainable supply chain efforts and collects business-related climate change information from our suppliers

OUR PEOPLE

A healthy culture is important to AEP because a highly engaged workforce naturally creates a better experience for our customers, and business outcomes that benefit our shareholders. The ingenuity and creativity of our employees will help us reinvent ourselves for the future.

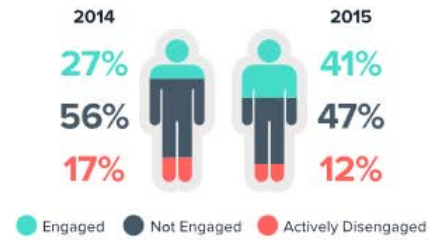


[HOME](#) | [OUR PEOPLE](#)

CULTURE COMMITMENT

Most companies define success based on their profits, brand equity and market share. Truly successful companies know that engaging their employees is the key to achieving this success. Research has proven that engaged employees have a positive impact on business outcomes. According to Gallup, engaged employees are more likely to be loyal, psychologically committed to the company, passionate about their work, perform at consistently high levels, work safer and want to make meaningful contributions. They are also the source of the best ideas and innovation. That's why an engaging culture is so important to AEP.

AEP EMPLOYEE ENGAGEMENT



We value a diversity of perspectives and experiences, skills, ideas, culture and opinions. We have put several initiatives in place to support and engage our diverse culture as we reposition our business for a bold new future shaped by technology, innovation and improving our customers' experience.



ZERO HARM

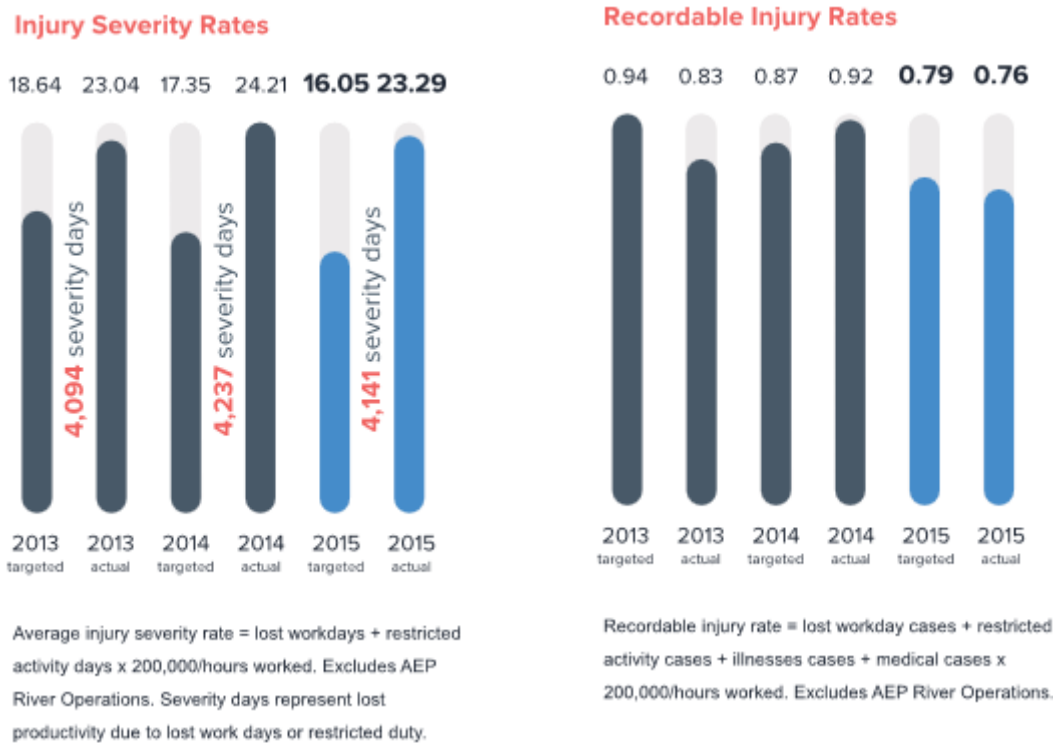
There is nothing more important to us, or culturally valued, than the safety and health of our employees. AEP is renewing its commitment to Zero Harm - to reinforce its principles and reinvigorate AEP's safety focus.

[LEARN MORE >](#)

Safety & Health Performance

To AEP, Zero Harm means we care for each other; we care enough to always choose the safest way to do a job; and, we take responsibility and accountability for speaking up to prevent harm. We believe every event is preventable and we will not put productivity ahead of safety.

The road to Zero Harm is challenging but rewarding, with many successes along the way. In 2015, we achieved something we had not done since we began keeping statistics in 1970; four consecutive years without an employee fatality. This was quickly tempered in early 2016 when an AEP Transmission employee lost his life while on the job. A second employee was severely injured in this life-changing event.



This immeasurable loss is felt by every employee. It is unacceptable to each of us and strengthened our resolve to work harder to achieve Zero Harm – zero injuries, zero fatalities. We must do everything in our power to ensure that every employee and contractor goes home at the end of each day in the same condition as when they came to work.

We have established an aggressive plan to transform our approach to safety and health, and to build systems and a culture that support and sustain world-class safety and health performance. Our strategy is based on the findings and recommendations from a 2015 safety gap analysis and safety perception survey of employees. The survey was conducted by DuPont Sustainable Solutions.

Zero Harm at AEP

- Zero Harm means we care about every employee’s health and well-being.
- Zero Harm means we care that every employee can retire suffering no long-term effects of their work at AEP.
- Zero Harm means we care to know the job, be trained appropriately and choose the safe way every time.
- Zero Harm means we care to watch out for each other and stop any job if it is unsafe.
- Zero Harm means we care to learn from every event and get continuously get better

Path to Zero Harm

Over the past decade, we have made great progress in injury/illness prevention by providing employees with training, tools, resources and data to prevent harm. Although AEP’s performance is good compared to our industry peers – we want to move from good to great in Zero Harm. In 2016, we will pursue Zero Harm by focusing our efforts on:

- Engaging and developing leadership.
- Engaging and developing employees.
- Setting clear and consistent expectations, standards and accountability.
- Measuring serious injuries and using the industry standard DART (Days Away/Restricted or Job Transfer) rate to focus on high-consequence risks.
- Improving safety and health and risk management systems.

Zero Harm: We Care About People

To achieve Zero Harm, our five-year plan is grounded in communication and action. We have committed to:

- Adopt, communicate and implement a system-wide framework for safety and health.
- Replace historical recordable rate performance metrics with a DART rate of measure to focus our attention on events with more serious consequences.
- Reward employees by setting performance-based goals based on proactive measures.

AEP EMPLOYEE DART RATES



DART Rate = Days Away, Restricted or Job Transfer Cases x 200,000/hours worked. DART Rate is an industry accepted measure that allows companies to isolate more serious events.

Excludes AEP River Operations

Safety & Health Gap Analysis

To help us enhance the efficiency and effectiveness of AEP’s safety and health management system, we hired DuPont Sustainable Solutions to complete a comprehensive evaluation of AEP’s safety and health culture. The DuPont Integrated Safety Management System model was used to benchmark AEP’s safety management system against companies with world-class performance.

The evaluation consisted of a company-wide safety and health perception survey, site visits, a review of safety management system documents, interviews with key AEP stakeholders, and workplace observations and discussions with front-line employees. The assessment identified several areas of strengths as well as areas for improvement.

We will continue to work to close these gaps in 2016, which will strengthen the foundation for safety going forward. These initiatives will enable a Zero Harm culture; allow us to implement a consistent organization-wide solution and sustain the results we achieve.

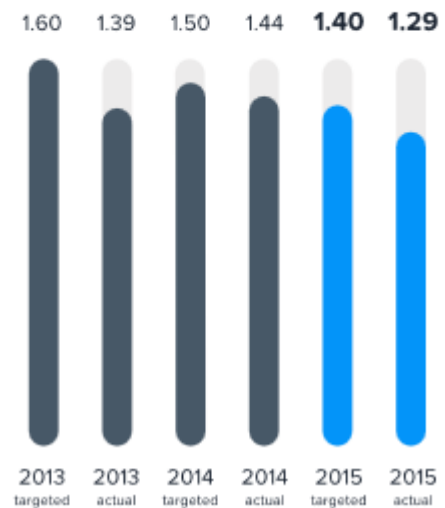
Contractor Safety & Health

No aspect of our work is more important than safety and health, whether it is an AEP employee or an AEP contractor. Our focus is on prevention. As we strive for Zero Harm with our employee work force, we seek the same level of commitment and performance among our contractors. We invest time and resources to ensure the safety and health of our contractor work force and we hold them accountable for their performance. This has become critically important as our contractor work force has increased to support the growth of our business. As a result, in early 2016, we created a new leadership position responsible for contractor safety and health performance.

Our ongoing efforts to improve contractor safety and health have included: a rigorous contractor pre-qualification process; setting clear expectations for compliance and commitment; incorporating leading indicators into the contractor oversight process; proactively addressing trends; and actively engaging AEP personnel in contractor oversight.

The recordable rate for AEP’s major contractors was 1.29 versus the 1.40 target. Overall, we are making progress but it is not enough, especially when four AEP contractors were fatally injured during 2015.

AEP TARGETED CONTRACTOR RECORDABLE RATE – PATH TO EXCELLENCE



Managing Performance

Audits of safety and health efforts help us stay compliant with company policies, laws and regulations. The audits also help flag potential hazards that could lead to harm.

Internal audits of our safety and health management system and compliance processes are a part of our quest for Zero Harm. Safety and health programs were audited



at 18 locations in 2015. In addition, a system-wide audit for contractor safety and health programs oversight was conducted for all utility operations. All audit findings are assigned action plans to address findings and then corrected and shared with business unit leaders and safety and health professionals to leverage lessons learned.

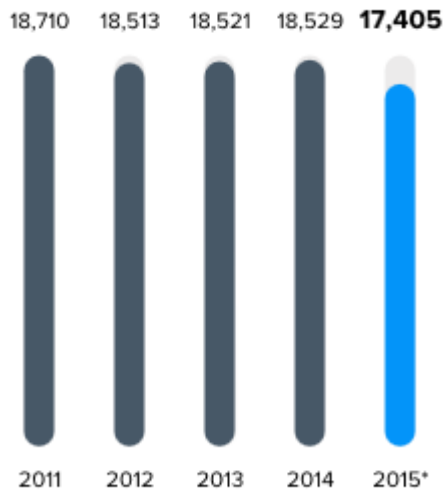
In 2016, we are reviewing our processes for sharing information and lessons learned to ensure there is consistency across the AEP system and that important information to prevent harm is shared with each and every employee and contractor.

Our Generation business unit uses the Managing Environment, Safety and Health (MESH) information management system to track performance and ensure compliance with requirements. Each of our power plants has electronic MESH manuals that link to corporate resources while also addressing plant-specific processes.

Workforce Planning & Optimization

According to the [Center for Energy Workforce Development](#) (CEWD), an aging work force plays a significant role in the industry’s transformation. The CEWD’s 2015 “Gaps in the Energy Workforce Pipeline” survey shows that overall, the electric and natural gas utility work force is getting younger and

NUMBER OF AEP EMPLOYEES
year-end



* 2015 reflects the sale of AEP’s commercial barge transportation subsidiary, AEP River Operations LLC.

that retirement forecasts in future years are trending downward for the first time since the survey began in 2006. A large number of workers in our industry will retire in the next five to 10 years; at the same time, the industry is making progress filling the gap with younger employees.

A skilled work force is critical to AEP’s success. Many of our skilled and technical employees, such as plant operators and line mechanics, are approaching retirement eligibility. AEP defines retirement eligibility as a minimum age of 55 years with 10 years of service. To prepare and develop the work force of the future, we are actively engaged in several initiatives to attract people with the technical skills we will need. This can be challenging as we find ourselves competing with other industries, such as the shale gas and technology-driven industries, for the same skilled workforce. The skillsets we will need are also changing. As we develop our data analytics team, for example, we will need different technical skills to be successful. This field is very competitive and we will be competing with companies such as Google and Amazon for the best talent.

One way we are addressing this potential labor shortfall is by developing work plans for each of our business units to identify potential staffing gaps, as well as opportunities to educate, train and prepare our future workforce. Work force planning enables us to grow the business while giving our employees opportunities to develop their knowledge and their skills.

Through AEP's [Big Data Olympics](#), we are working to develop a work force optimization model. The purpose of the model is to help us improve our ability to forecast future workloads and optimally assign the work to employee and contract crews from a cost efficiency and customer satisfaction perspective.

Training

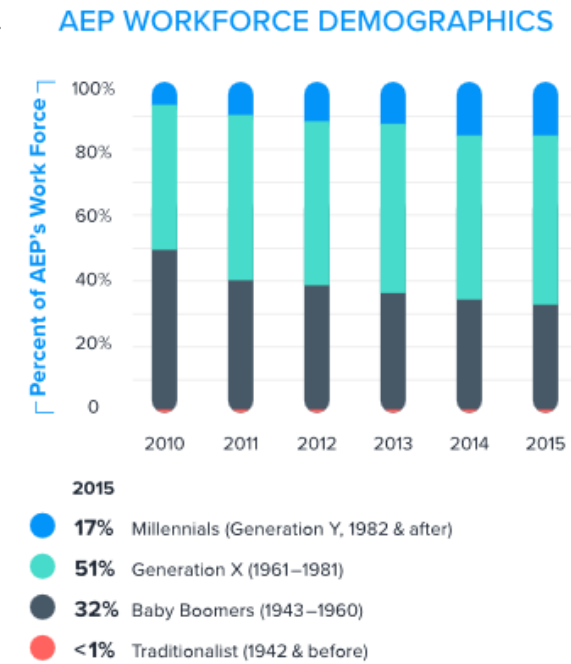
Providing our workforce with the proper tools and training is part of our commitment to employees. AEP provides a broad range of training and assistance that supports lifelong learning and transition support. Programs develop knowledge, competencies and learning that collectively benefit our employees, the business objectives of AEP and the communities we serve.

Our knowledge and skills development strategy is accomplished through our processes for ongoing performance coaching, operational skills training, resources supporting our commitment to environment, safety and health, job progression training, tuition assistance, and other forms of training that help employees improve their skills and become better leaders. In 2015, AEP employees completed more than 1 million hours of training, as tracked in our corporate-wide learning management system.

To ensure a pipeline for our future work force needs, AEP has training alliances with various community colleges, vocational and technical schools across our 11-state service territory. We work with these institutions to develop academic programs needed to prepare employees for upward mobility



2016 AEP Corporate Accountability Report



opportunities and to attract external job seekers interested in a career in our industry. Our education partners include: [Columbus State Community College](#), [Ohio Mid-East Career & Technical Center](#), [Texas State Technical College](#), and [Oklahoma State University Institute of Technology](#), among many others.

AEP has several training facilities, including distribution line training schools, that are important resources for hands-on training to learn new skills and sharpen existing ones.

Jobs for Veterans

AEP actively supports, recruits and hires military veterans, and educates, trains and prepares them to transition into energy industry jobs. Many veterans bring key skillsets to the work force, such as leadership, discipline, teamwork, reliability and safety, making them attractive recruits for our company.

AEP is actively involved in the [Troops to Energy Jobs](#) effort to increase the percentage of veterans in the energy industry work force. Eleven percent of AEP's workforce are military veterans, and 11 percent of AEP's new hires are military veterans.

Military veterans tend to have the technical training, experience and personal characteristics that make them a great fit for careers in the energy industry. We hold open houses for veterans to learn about skilled craft positions within the company, and watch live demonstrations of line mechanic work. They also get a preview of the different technologies used to operate the grid. AEP encourages veterans to actively seek and apply for jobs at AEP that match their training and skill.

AEP has enhanced its military benefits. For example, in early 2016, AEP amended its bereavement policy to allow military veterans and reservists paid time off to attend funeral services for a service member with whom they have served. We understand that a fellow service member is often as close as a family member and the loss is deeply felt by our veterans. The policy change is in addition to AEP's regular employee bereavement policy.

Supporting Our Soldiers and Community



We are proud of our work to support military veterans. In 2016, AEP has been recognized for the 13th year as a Top 100 Military Friendly Employer by Victory Media. In 2015, AEP was also named one of the nation's Best of the Best Top Veteran-Friendly Companies by [U.S. Veterans Magazine](#). Also, AEP is participating in the Veteran Jobs Mission, which has grown to over 200 companies. The coalition is committed to hiring veterans and has collectively hired more than 300,000 veterans since its inception in 2011.

Labor Relations

More than one fourth of AEP's work force is represented by labor unions. We value the relationships we have with our unionized employees and believe in a trusting, collaborative and respectful partnership. We are working with our labor partners to strengthen these relationships to ensure that we have a culture that attracts and supports employees who can adapt to the rapid changes occurring in our company and industry. Our partnership with labor is critical to meeting the growing expectations of our customers and adapting to the challenges of rapidly changing technologies.

In 2015, we negotiated a three-year collective bargaining agreement and wage package with the Utility Workers Union of America. Multi-year agreements enhance continuity for both the company and the work force. We plan to continue to negotiate multi-year contracts with our other unions throughout 2016.

Our relationship often goes beyond the confines of a contract. We also partner with labor to strengthen our safety culture as well as support vibrant communities. Our physical work force is at the front line every day keeping the lights on for customers; their active partnership with AEP to ensure we achieve Zero Harm is imperative if we are to achieve our goal.

2015 ORGANIZED LABOR AT AEP

| Labor unions | Number of Employees |
|---|---------------------|
| International Brotherhood of Electrical Workers | 3,275 |
| Utility Workers Union of America | 964 |
| United Steelworkers of America | 395 |
| United Mine Workers of America | 160 |
| International Union of Operating Engineers | 2 |
| Total | 4,796 |

Culture Commitment

Research shows that companies with a strong culture and a strategic business plan outperform their peers. A strong culture fosters engaged employees and creates the foundation for long-term success. At AEP, we continually work to foster a culture that will support the adaptability and focus needed to succeed in a fast-paced, changing work environment. This includes building on our commitment to customers, safety, operational excellence and innovation.

To measure our progress AEP conducts employee culture surveys. The 2015 AEP Employee Culture Survey had an 82 percent participation rate, compared with 74 percent in 2014. The results showed meaningful improvement, especially around engagement, performance recognition and accountability. This is a strong reflection of the work we have done over the past three years to strengthen these areas of focus.

The survey also showed us that we have more work to do. To continue the momentum and continually improve, work groups develop culture action plans each year and we are currently focused on sharing best practices across the AEP system.

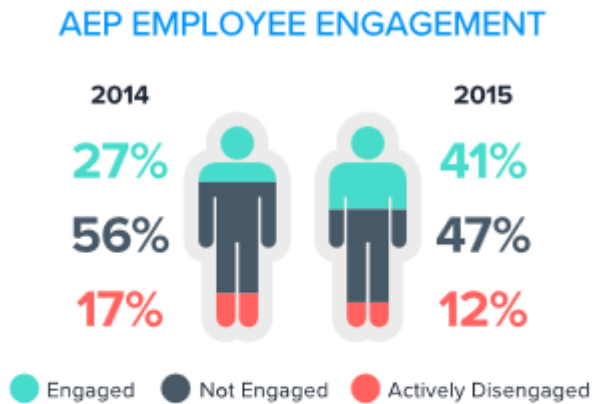
A strong and healthy culture is essential to help our employees understand how they contribute to AEP’s strategic goals, fostered by collaborative, supportive leaders who provide timely feedback and recognition, and continuously engage their employees. This in turn will lead to better performance, whether it’s the safety and health performance of our employees, reliability performance of the system, or interactions we have with our customers.



Work teams not only develop annual culture action plans, many also have formed local culture committees.

Engaging our Employees

Employee engagement was one of the culture focus areas that showed meaningful improvement in the 2015 AEP Employee Culture survey. In 2015, 41 percent of employees responded that they were engaged, compared to 27 percent in 2014. In addition, we saw a decrease in both employees who were not engaged and actively disengaged compared to 2014.



Employee engagement was one of the culture focus areas that showed meaningful improvement in the 2015 AEP Employee Culture survey. In 2015, 41 percent of employees responded that they were engaged, compared to 27 percent in 2014. In addition, we saw a decrease in both employees who were not engaged and actively disengaged compared to 2014.

One way we are empowering employee engagement is through our Power up & Lead culture leadership workshop where employees learn about their own behaviors and leadership styles, and what it takes to be effective communicators. In 2015, AEP accelerated the implementation of Power up & Lead by offering several flexible options to adapt to AEP’s work force needs. We increased the number of participants from more than 1,600 in 2014 to 5,282 in 2015. Since the workshop began in 2013, more than 8,300 employees have completed Power up & Lead. AEP plans to continue an accelerated pace for the training in 2016.

To help employees understand how they contribute to the company’s overall strategic goals, AEP launched a learning map called “AEP’s Strategy for the Future.” This interactive map exercise allows small groups of employees to learn about AEP’s past successes, current challenges, what’s changing, and AEP’s strategy for future success. The learning map supports AEP’s cultural pillar of strategic alignment. More than 10,700 employees have completed the learning map since it launched in 2015.

AEP has been named to Fortune magazine’s World’s Most Admired Companies list in the electric and gas utilities sector for the third year in a row. Each year, Fortune surveys top executives, directors and financial analysts about the companies in their industry based upon nine criteria: financial soundness, use of corporate assets, long-term investment value, quality of management, quality of products and services, people management, innovation, social responsibility, and global competitiveness. Our employees, and AEP’s commitment to developing a culture that will support the adaptability and focus that our employees will need to succeed in a fast-paced, changing work environment, is and will continue to be the center of our success.

Continuous Improvement

Almost every work process can be improved, and people who do the work every day are the best ones to identify those opportunities. AEP has adopted Lean as our primary framework to continuously improve.

Lean relies on a well-known experiential learning cycle known as Plan-Do-Check-Adjust. By giving employees ownership and the freedom to experiment with possible solutions, we foster entrepreneurship which, in turn, sparks creativity, innovation and prudent risk-taking. We have celebrated many successes as a result.

Successes

Creating lean business processes started modestly as a pilot program at AEP's Gavin Power Plant over three years ago and quickly grew. Through 2015, there have been more than 65 deployments of Lean throughout the enterprise and thousands of employee ideas submitted to improve processes that create efficiencies and reduce waste, as well as, create a favorable sustainable bottom line financial impact. The initial deployment of lean continuous improvement efforts has been completed at 16 power plants, all 31 distribution districts, all five regions of Transmission Field Services, Cook Nuclear Plant, Commercial Operations, Information Technology, Customer and Distributions Services, and Procurement-Supply Chain and Fleet group. Other business units across AEP are also adopting Lean principles and have begun their own journey to continuous improvement.

Here are some successes:

AEP's finance department launched the "Every Dollar Counts" campaign to remind employees of the importance of being good stewards of AEP's financial resources.



One way we are doing this is by leveraging the Supply Chain, Procurement and Fleet Operations organization. Procurement is not about buying the cheapest item; it is about having the right item, at the right place, at the right time, for the right price.

Through this focused effort, the procurement team, working with business units across AEP, was able to contribute a substantial operations and maintenance savings in 2016 through the strategic sourcing of goods and services. Our goal is to become an industry leader in cost, performance and value in Procurement, Supply Chain and Fleet Operations activity, and we believe this effort reflects positively on our journey.

Employees in the Transmission Field Services organization found that in remote areas in West Virginia, locating line faults could be time-consuming. When called upon to locate a line fault they would sometimes end up on long hikes through mountainous terrain to find the problem. The solution the team adopted was to install relatively low-cost fault indicators along lines prone to outages in those remote areas. During a fault event, simple LED indicators direct crews more quickly to the fault location, helping to reduce the duration of the outage.

What works well in one location may also work in another. That is why we are making a concerted effort to share ideas and solutions learned from other Lean deployments. One example of idea-sharing occurred at AEP's Conesville Plant, where an equipment operator saw an improved FGD (flue gas

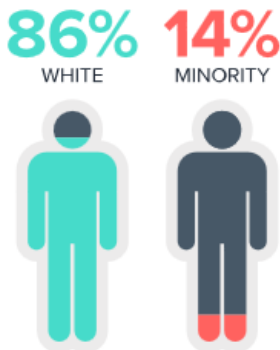
desulfurization) belt wash system at another plant and took the idea back to Conesville. Sharing ideas in this way indicates that a continuous improvement culture is maturing.

A key driver behind the success of these efforts has been the high level of employee engagement. Going forward, we will focus on embedding Lean/continuous improvement principles in our daily work, sustaining those efforts and developing leaders as coaches to promote and support a problem-solving culture.

Diversity at AEP

We are committed to and value diversity at AEP and in the communities where we live, work and operate. To us, diversity involves ethnicity, gender, age, and other demographic factors. It also includes valuing diversity of thought, experiences, skills, ideas and culture, all of which make the company and the community stronger.

LEADERSHIP DIVERSITY BY ETHNICITY



Includes AEP's Board of Directors, Executive Council and Regional Utility Presidents in 2015

At the end of 2015, our [board of directors](#), [executive council team](#) and [regional utility presidents](#) included seven women, two African Americans and two Hispanics. Women made up 24 percent of this group and minorities 14 percent. Being diverse within the upper ranks of the company helps us gain a broader perspective on business issues, allowing us to make better decisions. It also sets an example for more diversity within our work force and in our communities.

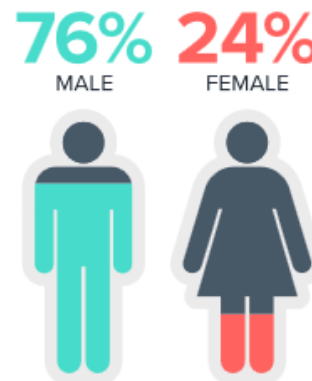
We work on becoming more diverse from the board room to the front line. We track the advancement of women and minorities from front-line craft-level positions to executive posts. We consider diversity in every hiring decision and look for development opportunities. One example of this is the AEP Women's Leadership Series, which provides informal networking and professional development opportunities for female leaders within AEP.

Workplace diversity is an important issue for all companies. Recognizing the evolving diversity of our work force and the global economy, AEP has changed policies, benefits, training and other resources to be more inclusive. These efforts have been reflected in our [Human Rights Campaign \(HRC\) Corporate Equality Index](#) score.

In 2016, AEP scored 95 out of a possible 100 points, adding 15 points to our 2015 score of 80. This index has become a benchmarking tool for large U.S. companies to measure the fair, nondiscriminatory treatment of LGBT employees in the workplace. The AEP Pride Partnership employee resource group worked with the Office of

2016 AEP Corporate Accountability Report

LEADERSHIP DIVERSITY BY GENDER



Includes AEP's Board of Directors, Executive Council and Regional Utility Presidents in 2015

Diversity to improve the company's HRC rating over the years.

Employee Resource Groups

Employee resource groups (ERGs) give voice to the diversity of our work force. They are an integral part of our culture and contribute to the success we are having in the area of inclusion. These groups support AEP's values and goals, strengthen communication between AEP and its employees, provide a forum for exchanging new ideas and enhance the company's desirability as a prospective employer. Currently, AEP has seven ERGs located at corporate headquarters and at satellite locations around the AEP system.

AEP's Employee Resource Groups:

- Asian American Employee Partnership
- Hispanic Origin-Latin American (HOLA) Employee Resource Group
- African American Employee Resource Group
- Military Veterans Employee Resource Group
- AEP Pride Partnership (for lesbian, gay, bisexual and transgender (LGBT) employees and their allies)
- Abled and Disabled Allies Partnering Together (ADAPT)
- Native American Employee Resource Group (NAERG)



Employee resource groups give voice to the diversity of our work force and support AEP's values and goals.

Open to all employees, the ERGs sponsor programs and events focused on culture, education and personal and professional development. They are active community volunteers supporting efforts such as Project Mentor and Make a Difference Day. ERGs also play an active role in AEP's diversity recruitment efforts.

One of the key factors that contribute to the success and growth of our ERGs is the support they receive from senior management. Each ERG has at least two senior leaders as executive sponsors who provide guidance and counsel to the groups' mission and goals. In addition, the executive sponsors ensure the group has the right visibility within the organization.

In January 2016, AEP was selected for inclusion in the [Pax Ellevest Global Women's Index Fund](#), a diversified mutual fund that invests in the highest-rated companies in the world in advancing women's

leadership. This demonstrates that diversity is an investment choice as much as it is smart business for AEP.

In February 2016, [Appalachian Power Company](#) (APCo) was recognized by the West Virginia Human Rights Commission for its efforts to eradicate discrimination and its promotion of civil rights in the workplace. APCo was among 20 honorees at the Commission's West Virginia 13th Annual Civil Rights Day.

7-AEP EMPLOYEE RESOURCE GROUPS



AEP has a diversity and inclusion online training module that is required for all employees. The course provides information on the business case for diversity. It demonstrates how to respond effectively to differences, and increase the level of inclusion in the workplace. We meet regularly

with business unit leaders to provide status updates on their individual progress toward increasing workforce diversity enterprise-wide.

To maintain diversity in our employee candidate pool, we have established relationships with universities with minority and female populations, including Texas A&M University–Kingsville, Missouri University of Science & Technology and the University of Puerto Rico. We also have partnerships with organizations such as the [Center for Energy Workforce Development](#) (CEWD), [Direct Employers](#) and the [United Negro College Fund](#) to assist us with our diversity recruitment efforts. In 2015, our Human Resources team provided a diverse slate of candidates to our hiring managers 63 percent of the time when a job was being filled.

ENVIRONMENT & CARBON

Although the environmental considerations of generating and delivering electricity are diverse, AEP is committed to operational excellence and environmental stewardship to reduce our impacts. We have a good environmental compliance track record.



🏠 | ENVIRONMENT & CARBON

CARBON EMISSIONS

AEP's carbon dioxide emissions have been reduced 39 percent from 2000 levels, and we will continue to reduce carbon dioxide emissions as we transition to more natural gas and renewable resources in the future.

[LEARN MORE >](#)



SUSTAINABLE GROWTH & OPERATIONAL EXCELLENCE

We measure our success based on financial and non-financial performance. This includes the impacts our product has on the environment. We are committed to being environmental stewards as we build the next-generation utility.



CARBON & CLIMATE

AEP is less carbon-intensive than a decade ago. As we retire additional coal units and increase our use of clean energy, our carbon footprint will continue to shrink.



CORPORATE EMISSIONS

Between 2000 and 2016, AEP will have invested an estimated \$8.5 billion in environmental controls, which has resulted in significant reductions in air emissions.



WATER

Water quality, availability, use and management are increasingly important sustainability issues for society and our company.

Compliance Performance

Our facilities are subject to environmental regulatory and permitting requirements for which we must demonstrate compliance. Our goal is zero enforcement actions. We are also subject to routine environmental inspections of our facilities through scheduled – and unannounced – visits. During these visits, regulators inspect physical facilities and monitor our compliance with regulatory requirements, permit limits and record-keeping obligations.

Whenever agencies identify concerns, we proactively work with them to address those issues in a timely fashion to their satisfaction. If enforcement actions are initiated, we work with the regulatory agency to resolve those actions and identify and implement any corrective measures that may be needed to mitigate future risks by preventing recurrences.

One of many voluntary actions we take to help drive continuous performance improvement is the use of an internal Environmental Performance Index for our generation business. We recorded six incidents in 2015. The index monitors incidents for opacity, water quality permits and oil and chemical spills at our power plants.

In our Transmission business, we developed a mandatory environmental compliance training program and provide support from environmental specialists to ensure all transmission-related construction projects are built in full compliance with environmental permit requirements.

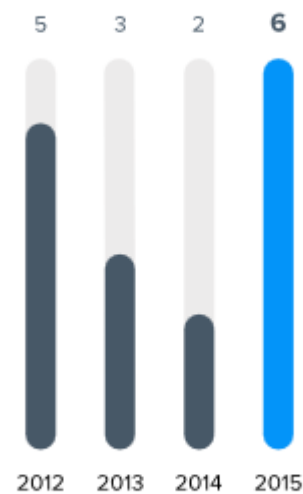
Checks and Balances

We use our environmental, safety and health management system to improve our environmental performance and to measure, track and report our progress. By applying the principles of the ISO 14001 standard to managing environmental performance, we enable a cycle of continuous improvement that helps diminish the risk of compliance incidents.

One way we check our compliance is through internal audits. Audits provide additional focus on controlling risks and providing assurance that robust compliance processes are developed and implemented system-wide. In 2015, we conducted internal audits of our environmental management programs at 20 locations and a system-wide audit for environmental programs compliance at station construction sites.

AEP GENERATION ENVIRONMENTAL PERFORMANCE INDEX

number of incidents per year



The Environmental Performance Index includes incidents for opacity, water quality permits and oil and chemical spills at our power plants.

Our responsibility to environmental compliance will continue for requirements that remain effective at AEP-owned properties where generating units have been retired. This includes many existing state environmental requirements, in particular, those related to the management of water and coal-combustion byproducts. We continue to work with regulators to amend permits as we move through the decommissioning process.

ESH Policy & Philosophy

Environment, Safety & Health Philosophy

No aspect of operations is more important than the health and safety of people. Our customers' needs are met in harmony with environmental protection.

Environment, Safety & Health Policy

AEP is committed to social responsibility and sustainability. We are proactive in our efforts to protect people and the environment by committing to:

- Maintain compliance with all applicable ES&H requirements while pursuing the spirit of ES&H stewardship;
- Ensure that people working for or on behalf of AEP understand and integrate ES&H responsibilities into their business functions;
- Support continual improvement of environmental performance and pollution prevention; and
- Hazard elimination through employee involvement and continual health and safety improvement.

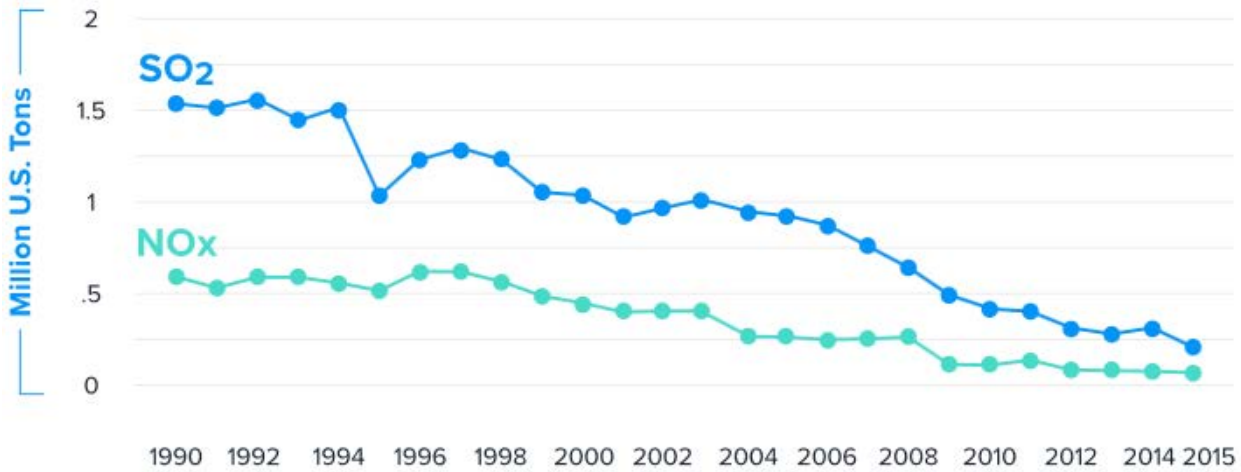
Emissions

AEP's investments in environmental controls have resulted in significant reductions in air emissions. Since 1990, sulfur dioxide (SO₂) and nitrogen oxide (NO_x) emissions have been reduced by about 88 percent and 87 percent respectively, while mercury emissions have declined by nearly 54 percent since 2001. Mercury emissions information is reported to the EPA under the [Toxics Release Inventory program](#).

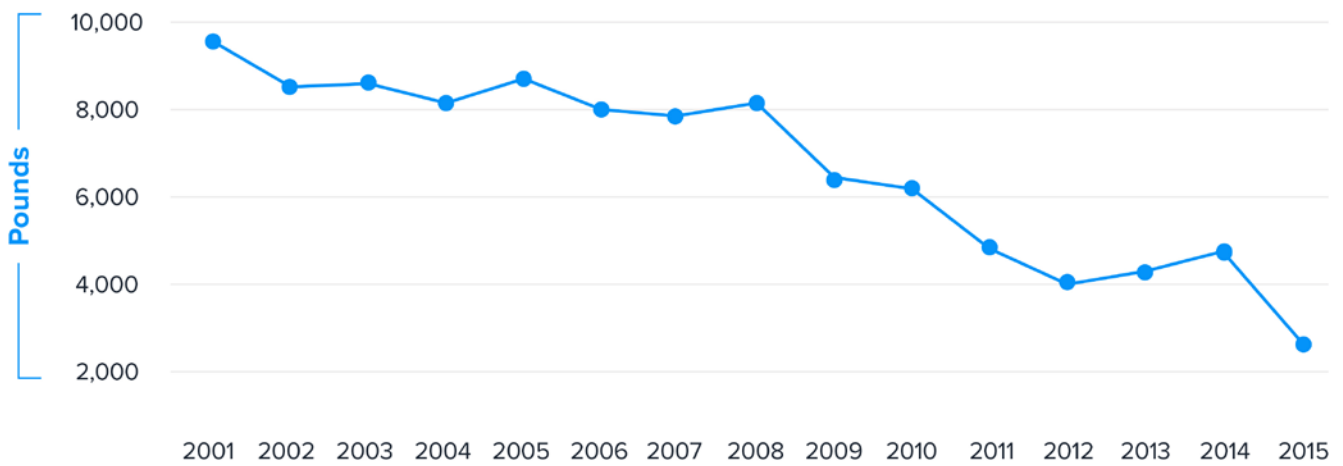
Our emissions will likely continue to decline further in the future with the installation of additional emission control systems on coal units, the retirement of additional coal units and the increased use of other resources, including natural gas and renewables. Between 2000 and 2016, AEP will have invested an estimated \$8.5 billion in environmental controls for our plants, resulting in positive environmental impacts.

Read more about [AEP's CO₂ emissions](#).

TOTAL AEP SYSTEM NO_x & SO₂ EMISSIONS



TOTAL AEP SYSTEM MERCURY EMISSIONS



Carbon & Climate

In 2015, a number of global policy developments brought climate change and the role of carbon to the forefront of public discourse. From the Clean Power Plan to the United Nations-sponsored global climate talks and subsequent multi-nation agreement in Paris, the issue of carbon and climate intensified political and civil society scrutiny of carbon-intensive industries. Among them – the electric power sector.

We have had many discussions with investors, environmental groups and other stakeholders about this issue and AEP’s plan to reduce carbon emissions. The EPA has the authority to regulate carbon. Regardless of the outcome of legal challenges to the Clean Power Plan, there will be carbon regulations in the future.

We have proactively addressed carbon emissions through voluntary actions as a member of the former Chicago Climate Exchange, and through our resource planning and investment processes. AEP is already less carbon-intensive than a decade ago. As we retire additional coal units and increase our use of renewables and other clean energy resources, our carbon footprint will continue to shrink. Our integrated resource plans reflect this diversification and incorporate a price for carbon, starting in 2022, as a proxy for future carbon regulations.

With respect to mandated climate action, we strongly believe that any carbon policy or regulation must be rational in terms of timing, scope and reduction targets. Additionally, any climate action framework should be built on a rational approach and take into account the regional differences in the role of carbon within our economy to ensure that there is not undue economic harm.

Clean Power Plan

The U.S. EPA finalized the Clean Power Plan (CPP) in October 2015, using an existing section of the Clean Air Act. The CPP would require states to develop state-level compliance plans. AEP began discussions with our states, urging them to develop state implementation plans, rather than be forced to comply with a federal implementation plan that would not account for each state's unique energy and economic needs.

The final rule raised legal concerns and was subsequently challenged in the D.C. Circuit Court by a number of stakeholders, including the Utility Air Regulatory Group, of which AEP is a member.

In February 2016, the rule was subject to a stay order from the U.S. Supreme Court to allow for the appropriate legal review of the rule. We continue to advocate that any plan to reduce greenhouse gas emissions be accompanied by a thorough assessment of the impact on grid reliability, allow adequate time for implementation, respect the authority of states and other federal agencies, and preserve a balanced, diverse mix of energy resources for electricity generation.

The Supreme Court stay order doesn't change AEP's focus on generating and delivering electricity in ways that meet the needs and expectations of our customers. That includes diversifying our resource mix and investing in renewable generation and other innovations that increase efficiency and reduce emissions.

While the courts conduct a legal review of the CPP, AEP will continue its long-term commitment to serving our customers in cost effective and environmentally responsible ways.

AEP's carbon dioxide emissions (CO₂) have been reduced 39 percent from 2000 levels, and we will continue to reduce carbon dioxide emissions as we transition to more natural gas and renewable resources in the future. Our current resource plans have been developed to insure we are

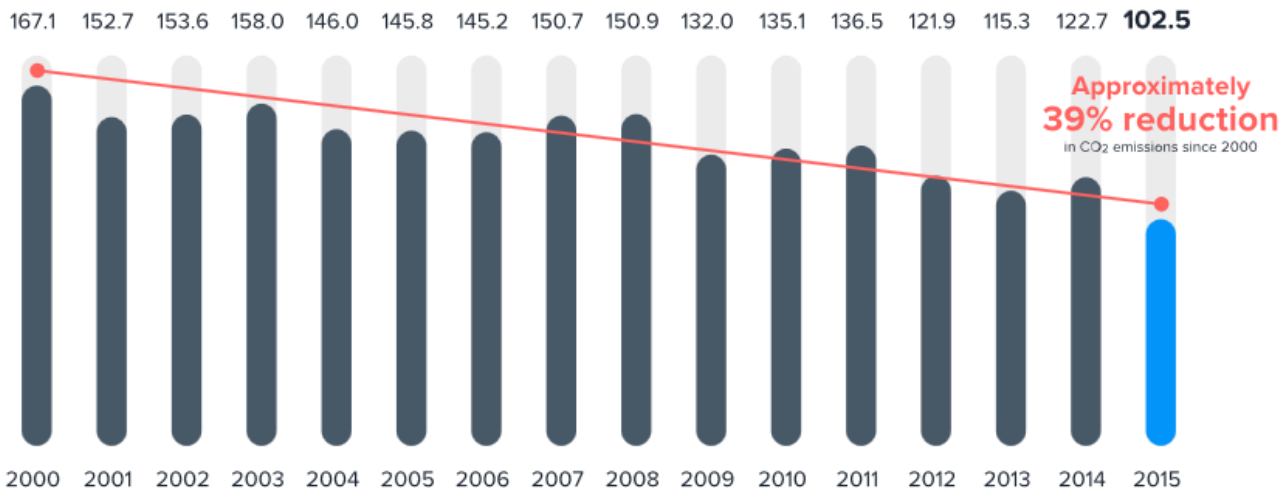


factoring in future carbon regulations, but they are not CPP compliance plans, because we cannot develop such plans until after the states take action in response to the final rule.

AEP's CO₂ emissions significantly decreased between 2014 and 2015, largely due to low natural gas prices, slowing load growth and coal unit retirements. AEP's CO₂ emissions were approximately 123 million metric tons in 2014; they were approximately 102 million metric tons in 2015. This represents a 16.5 percent decrease compared with 2014 and an approximate 39 percent reduction compared with our 2000 CO₂ emissions of about 167 million metric tons.

TOTAL AEP SYSTEM – ANNUAL CO₂ EMISSIONS

in million metric tons



Our resource plans do include more renewables and natural gas-fueled generation based on the current prices for those sources of generation in the market place, irrespective of the CPP. The extension of the federal investment tax credits for renewables, and our expectation that price declines for renewable technologies will continue, makes economic sense for our customers and lowers our carbon profile to include these resources.

AEP also reports annually to the [Carbon Disclosure Project](#). This information is shared with investor groups, shareholders, government agencies, and other public organizations. These responses provide a valuable insight into how the company addresses and manages what many consider to be important business risks.

[Learn more about resource planning](#)

Environmental Regulations

The increasing scope and stringency of environmental regulations pose technical, operational and financial challenges for our industry. These challenges, including uncertainties with timing, scope and

magnitude of future environmental regulations, are influencing decisions to upgrade or retire coal-fueled generating units. It also affects the planning process for new generation projects across our industry.

AEP’s active participation in development of new regulations helps to ensure that new requirements are achievable, based on sound science, consistent with statutory authority, balanced with other rule-makings, weigh the cost of compliance for customers, and can be implemented in a rational time frame. Compliance is important to us, but we also have a responsibility to our investors who make the required capital investment, and to our customers, who will ultimately pay for the implementation of compliance strategies, while expecting reliable electric service.

Coal Ash

The issue of coal ash disposal and handling came to the forefront nearly a decade ago and has since been subjected to a new federal rule covering the disposal and storage of coal combustion residuals (CCR).

In 2015, the U.S. Environmental Protection Agency (EPA) finalized a new CCR rule regulating the disposal and beneficial re-use of coal combustion residuals generated at coal-fueled electric generating units, including fly ash, bottom ash, flue gas desulfurization (FGD) byproduct and gypsum. CCR is now regulated as a non-hazardous solid waste and is subject to new minimum federal solid waste management standards, which went into effect in October 2015.

Since the rule became final, AEP put several programs in place to ensure compliance and established a new leadership role to oversee these efforts. AEP’s inspection and maintenance program for fly ash ponds and other impoundments remains vigorous and is continuously monitored.

Currently, AEP operates 24 CCR ponds that are impacted under this rule. We have an additional 14 ponds exempt from this rule because they are located at power plants we retired in 2015, before the new federal rule went into effect. These ponds will still be regulated and ultimately closed, but under existing state programs. Significant costs will be incurred to upgrade or close and replace the existing facilities including a \$95 million increase in asset retirement obligations in the second quarter of 2015 primarily due to this rule.

CCRs have long been used in concrete, wallboard and a wide variety of construction materials. While this benefits other industries, it also provides a source of financial and environmental benefits to AEP. In February 2014, the EPA completed a risk evaluation of the beneficial uses of coal fly ash in concrete

2015 AEP TOTAL SYSTEM COAL COMBUSTION PRODUCTS (CCP) UTILIZATION SUMMARY

| | |
|--|--------------|
| Total CCR Produced (tons) | 9,142,456 |
| CCP Donated (tons) | 91,150 |
| CCP Used Internally (tons) | 1,936,861 |
| CCP Sold (tons) | 1,066,760 |
| CCP Utilized (tons) | 3,078,621 |
| Total CCP Avoided Cost | \$16,971,363 |
| Total CCP Revenues | \$7,726,861 |
| Total Worth | \$24,698,224 |
| Percent Total Utilization Based on Total Production | 34% |

Includes fly ash, bottom ash, boiler slag, FGD material and gypsum.

and FGD gypsum in wallboard and concluded with support for these beneficial uses. Currently, approximately 40 percent of the coal ash and other residual products from AEP's generating facilities are used in the production of concrete and wallboard, as structural fill or soil additives, as abrasives or road treatment materials and for other beneficial uses. By diverting the coal ash to beneficial uses, we are minimizing our environmental impacts by reducing the need for waste disposal sites.

In 2015, AEP generated approximately 9.1 million tons of CCRs and was able to beneficially use more than 3 million tons, or 34 percent of the total. Beneficial use of CCRs (considered to be products if they are beneficially used), avoided approximately \$17 million in disposal costs in 2015 and generated more than \$7.7 million in revenues.

For a complete regulations update, please see [AEP's Form 10K](#) under Environmental Issues.

New Source Review

In 2007, AEP signed a court-approved settlement of New Source Review (NSR) litigation. In 2013, a modification to the decree was approved by the U.S. District Court for the Southern District of Ohio, Eastern Division. The modification lowered a system-wide SO₂ emission cap for AEP plants that becomes increasingly stringent through 2029. The modification also gives us more flexibility in how we meet these requirements.

NSR Consent Decree Annual Report Archive (PDF)

- [2015 NSR Annual Report](#)
- [2014 NSR Annual Report](#)
- [2013 NSR Annual Report](#)
- [2012 NSR Annual Report](#)
- [2011 NSR Annual Report](#)
- [2010 NSR Annual Report](#)
- [2009 NSR Annual Report](#)
- [2008 NSR Annual Report](#)

Managing Water

Water is a critical input in the production of electricity. It is used in power plant boilers as well as for cooling, cleaning and in some cases, to transport fly ash and bottom ash. Water is also the source of hydroelectric power and provides transportation for our captive barge fleet to operate on several rivers.

Water quality, availability, use and management are increasingly important sustainability issues for society and our company. We are taking steps to reduce our water consumption, improve water quality and address water availability issues as we comply with current regulations and prepare for new ones. Plant retirements during 2015 have significantly reduced AEP's water footprint with a net water use reduction of 1,316 million gallons/day (MGD)], which represents a reduction of 18 percent when

compared to 2014 water withdrawal. We are also participating in industry research to find new ways to treat waste-water and reduce the use and consumption of water by power plants.

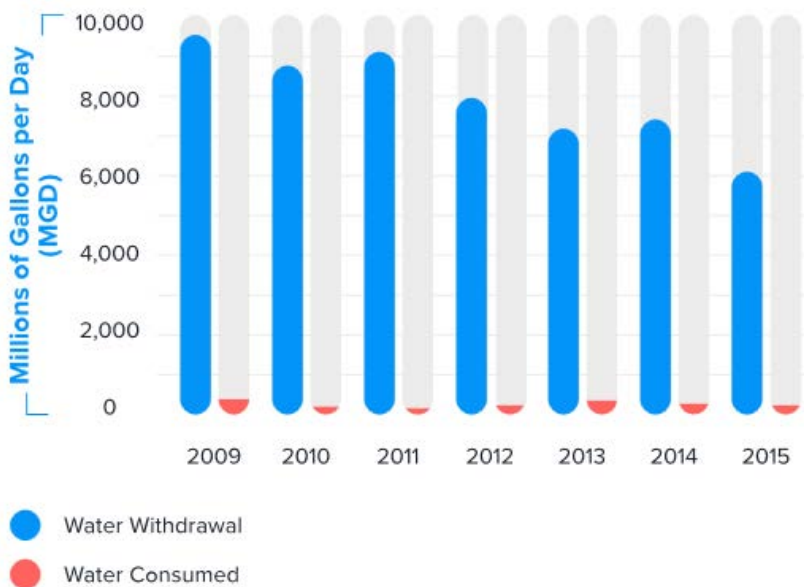
AEP places a high value on reporting our usage and management of water throughout our system. One way we do this is through voluntary reporting efforts. We participate annually in the [Carbon Disclosure Project Water Survey](#). The 2015 questionnaire was issued on behalf of 617 investors representing \$63 trillion in assets who seek business-critical information about water consumption and water use strategy and planning. In addition, AEP provides extensive water data in our [Global Reporting Initiative \(GRI\)](#) report.

Water Quality Improvements

Under the authority of the Clean Water Act, the EPA establishes wastewater discharge limits for new and existing steam electric power plants (coal, oil, gas and nuclear). On Nov. 3, 2015, the agency published revised steam electric power generating effluent guidelines in the Federal Register and set stricter performance standards that must be achieved at AEP coal-fired steam electric generating facilities. The new requirements can be accessed at [EPA link](#).

The new guidelines will require that AEP install technologies to eliminate the discharge of fly ash and bottom ash transport waters and to

AEP'S WATER WITHDRAWAL & CONSUMPTION



limit the discharge of pollutants from wet scrubber wastewater treatment systems. Upgrades and the installation of additional wastewater treatment systems will be required at most of AEP's active coal-fueled facilities.

The new limits will be implemented through each facility's NPDES wastewater discharge permit, which is typically renewed on a five-year basis. AEP is in the process of evaluating many new technologies that can efficiently treat waste-waters and reduce the release of pollutants.

Water Research Center

AEP is one of 14 companies that have joined the Electric Power Research Institute and the [Southern Research Institute](#) to establish a first-of-a-kind research facility that addresses power plants' water usage

and treatment. The [Water Research Center](#) at Georgia Power Company's Plant Bowen focuses on finding new ways to manage and treat wastewater and to reduce and conserve water used in the production of electricity.

Ohio River Basin Water Quality Trading Project

AEP began working with the [Electric Power Research Institute](#) (EPRI) and other partners on a market-based approach to improve Ohio River water quality. We were one of the first utilities in the nation to take part in the world's largest interstate [water quality trading plan](#). Representatives from Ohio, Indiana and Kentucky pledged their support to the plan in 2012, and the first trades took place in March 2014, culminating a five-year effort. By the end of 2015, AEP's purchase of stewardship credits reduced nutrient loading to the river by 5,000 pounds.

Due to new effluent limits for nutrients, such as nitrate-nitrite, AEP has no plans to use the trading program for compliance purposes; however, this important program can still provide a benefit, especially from an environmental sustainability perspective. For example, AEP has provided farmers with a gypsum-like material to line their cattle holding areas. If this is done and the farmers manage their manure, under the trading program, AEP can receive credit for keeping nutrients out of the local streams.

Through leases, AEP can require farmers to manage their fertilizer use, generating additional nutrient credits, and also reduce the emission of greenhouse gases, such as nitrous oxide, which are closely related to fertilizer use. Through other management practices, not only are there nutrient reduction benefits, but ancillary benefits, such as carbon sequestration, habitat enhancement, soil runoff control and the creation of pollinator habitat.

The program is good for farmers, the environment and the participating companies. In 2015, the program was awarded the [U.S. Alliance – United States Water Prize](#). AEP has a large presence on the river and it is important to protect this valuable natural resource.

Waste and Chemical Management

We manage many types of waste that result from the process of generating electricity, operating office buildings, and repairing and replacing equipment. We continue to reduce and divert waste from landfills through beneficial reuse or recycling.

The amount of polychlorinated biphenyl (PCB)-containing equipment used across the company continues to decline. PCBs, which are known to have adverse health effects, have not been used in new electrical equipment in the U.S. for more than 36 years but are present in some of our older transformers and other pieces of electric equipment. We removed and recycled approximately 2,885 pieces of electrical equipment in 2015; approximately 5.7 percent of these items were found to contain PCBs greater than 500 parts per million (ppm).

The EPA is developing a proposed draft rule that would potentially require the phase out of certain PCB-containing equipment (potentially including equipment containing 50 ppm PCB or greater). AEP operates hundreds of thousands of pieces of electrical equipment that could be affected by the draft rule. Current regulations require that if you do not know the PCB content of certain types of equipment, you must assume that they contain 50 ppm of PCBs or greater. Due to the types, locations and quantities of the potentially affected equipment throughout the AEP system, the expense of identifying, sampling and potentially replacing all of this equipment, if required, would be significant.

We had slightly more than 1,400 transmission and distribution equipment oil spills in 2015, similar to the number of spills in 2014. Two of the spills contained greater than 500 ppm PCBs in both 2014 and 2015. Most spills are caused by storms and vehicle accidents that damage the equipment.

During 2015, the waste we recycled included approximately 646,000 gallons of oil, 767,000 pounds of paper and mixed office waste, 60 million pounds of scrap metal, 31,000 light bulbs, 142,000 pounds of batteries and more than 196,000 pounds of electronic equipment, such as computers and phones, preventing disposal in landfills. These numbers are not all-inclusive but are considered good estimates of waste management across AEP and indicate progress in reducing waste.

AEP TOTAL SYSTEM WASTE STREAM

| Measurement | 2013 | 2014 | 2015 |
|--|------------------------|----------------------|------------|
| Hazardous Waste Generated (lbs) | 1,243,754 ¹ | 140,881 ² | 194,918 |
| Hazardous Waste Disposed (lbs) | 1,234,978 | 132,149 | 91,589 |
| Hazardous Waste Recycled (lbs) | 8,776 | 8,732 | 7,479 |
| Mixed Office Waste Recycled (lbs) ³ | 11,029,559 | 1,461,180 | 767,321 |
| Metal Recycled (lbs) | 48,405,496 | 34,645,343 | 59,806,355 |
| Light Bulbs Recycled (lbs) | 147,286 | 180,086 | 31,279 |
| Batteries/Lead Recycled (lbs) | 233,015 | 216,333 | 142,189 |
| Electronic Equipment Recycled (lbs) | 433,129 | 284,632 | 196,403 |
| Oil Recycled (gallons) | 1,584,230 | 1,429,432 | 645,577 |
| Beneficially Reused CCP (tons) | 3,148,192 | 3,669,478 | 3,078,621 |
| Parts Washer Solvent Recycled (gallons) | 42,372 | 33,950 | 34,365 |
| Oily Water Cleaned & Recycled (gallons) | 755,332 | 570,316 | 147,995 |
| Antifreeze Recycled (gallons) | 3,183 | 7,242 | 17,272 |
| Total Wood Waste Removed (tons) ⁴ | N/A | 3,034 | 3,931 |
| Total Wood Waste Recycled (tons) ⁴ | N/A | 867 | 1,248 |

¹ Includes 1,076,859 pounds of boiler cleaning waste from Wilkes Plant and Flint Creek Plant

² Includes 74,700 pounds of boiler cleaning waste from Welsh Plant

³ Mixed office waste (paper, cardboard, aluminum, plastic, etc.)

⁴ Represents total wood removed and recycled by National Salvage Service Corporation in select locations of Indiana, Kentucky, Ohio, Texas and West Virginia

Nuclear Waste Management

The Department of Energy oversees permanent disposal of spent nuclear fuel and historically has charged fees to plant owners for this disposal. However, the government has stopped developing the Yucca Mountain storage facility in Nevada, leaving generators with no place for permanent disposal.

Indiana Michigan Power owns and operates the two-unit Donald C. Cook Nuclear Plant in Michigan, which generates more than 2,000 MW of electricity. Like the rest of the nuclear industry, we face a significant future financial commitment to dispose of spent nuclear fuel. We need a national solution for the long-term disposal of spent nuclear fuel, which should be part of a national energy plan.

The uncertainty associated with long-term storage has placed the burden of interim storage on each nuclear facility. AEP is addressing this issue on the assumption that a workable offsite solution will not exist before the operating licenses for both Cook units expire two decades from now.

In 2012, the Cook Plant began a program of loading spent nuclear fuel into dry casks (32 spent nuclear fuel assemblies contained within each dry cask). Without removal of the used-fuel assemblies, the spent fuel pool would have reached capacity in 2014, forcing shutdown of one or both Cook units.



In 2015, the Cook Plant loaded 16 additional dry casks, making it one of the largest dry cask-loading campaigns conducted for an operating nuclear power plant in the U.S. Since the program began, there has been a total of 28 dry casks loaded into storage. The third dry cask loading is expected to occur in 2018. The current cask storage facility is designed to store 94 casks for a total of 3,008 spent nuclear fuel assemblies. This would support the operation of both units through the current operating license dates of 2035 for Unit 1 and 2038 for Unit 2. The pad could be expanded to facilitate removal of all fuel assemblies from the plant's spent fuel pool and full decommissioning of both units.

Nuclear plant operators are required to maintain a plant decommissioning trust fund to safely decommission and decontaminate the plant upon closure. At the end of 2015, the trust fund balance for the Cook Plant was approximately \$1.8 billion.

Natural Resources

It is challenging to practice environmental stewardship while providing electricity at affordable rates. AEP is meeting this challenge in several ways. For example, efforts are under way to implement vegetation management practices on our transmission rights-of-way to encourage wildlife, while at the same time, meeting all North American Electric Reliability Corporation requirements.

Concerns about endangered or threatened species continue to grow nationally. As we seek to build new infrastructure, such as transmission facilities or renewable generation across our service territory, we are mindful of potential environmental and ecological impacts we might have. In several cases we are developing long-term habitat conservation plans to protect endangered or threatened species while reducing time constraints for meeting project deadlines. Working with organizations such as the U.S. Fish & Wildlife Service helps us understand the issues, support habitat preservation and take appropriate voluntary actions to mitigate our impacts.

The Indiana bat and Northern Long-Eared bat are two species AEP is mindful of protecting. The Indiana bat has been federally listed as endangered since 1967 and the Northern Long-Eared bat was federally listed as threatened in 2015. The Indiana bat is resident in nine of the 11 states in which AEP operates. Likewise, the Northern Long-Eared bat is found in 10 of the 11 states in which AEP operates. In some areas, tree cutting during certain times of the year must take into consideration potential effects on the habitat of both species. Since these bats roost and raise their young in trees with certain characteristics, all trees with these potential characteristics must be evaluated prior to clearing.

AEP provides information about how we manage these and other issues through our participation in business and environmental disclosure surveys, such as the [Global Reporting Initiative](#).

Conservation and Stewardship

We continue to seek opportunities to integrate conservation measures into our management approach to rights-of-way (ROW) for new and rebuilt transmission lines. This involves addressing key ecological concerns while maintaining reliable transmission service. Working with the Wildlife Habitat Council (WHC), we developed a range of conservation options for ROW land management. The toolkit gives AEP options to incorporate environmentally beneficial conservation practices into our ROW management efforts that are economical and protect reliability as we rebuild old lines and build new ones.

AEP has a long history of partnering with the WHC on a variety of projects, primarily involving our power plants. Southwestern Electric Power Company's Flint Creek Power Plant received a 2015 Pollinator Advocate Award from the WHC. Pollinators include bees, birds, bats and other insects and animals that spread pollen so plant fertilization can occur. Flint Creek also was recognized for recertification under WHC's Corporate Lands for Learning program. Flint Creek has held certification under the program since 2004 and under WHC's Wildlife at Work program since 2002. The two programs are being combined into WHC's new Conservation Certification, and Flint Creek will be certified from 2016 through 2018. AEP's Real Estate Asset Management group also works with the WHC to enhance our ReCreation Lands – approximately 60,000 acres in southeast Ohio of reclaimed mine land.

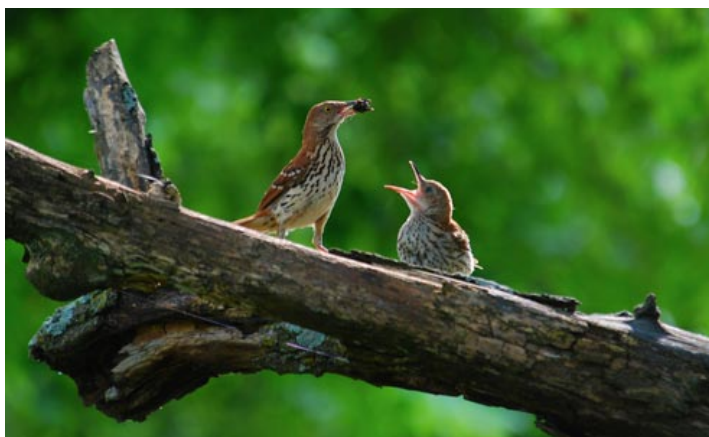


Photo of brown thrashers at AEP's Southwestern Electric Power Co.'s Flint Creek Power Plant. Flint Creek received a 2015 Pollinator Advocate Award from the Wildlife Habitat Council for its environmental education and stewardship program.

Avian Protection

For more than three decades, the utility industry, conservation groups, wildlife resource agencies and others have worked together to understand why birds collide with or are electrocuted by power lines. This is a growing concern as construction of transmission facilities and renewable energy facilities accelerates across the United States.

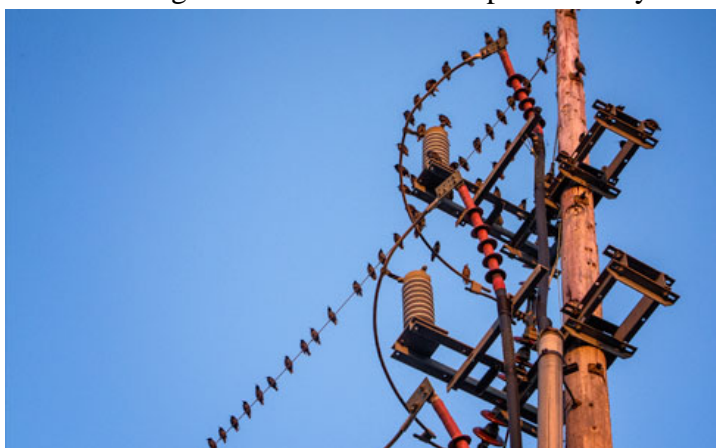
To reduce avian mortality, utilities have adopted voluntary company-specific Avian Protection Plans (APP) to mitigate the risks associated with bird interactions with electric facilities. AEP's APP was completed in 2013 and we initiated the process of implementation. The plan's purpose is to reduce the incidences of bird electrocutions and collisions with AEP's equipment, and to reduce the frequency of bird-caused outages.

AEP's Avian Protection Plan

AEP manages bird/power line interactions through a system-wide program across our 11-state service territory, where a wide variety of bird species can be found. Currently, AEP's primary challenge is on larger species that are more likely to be electrocuted in substations and on poles, or collide with towers and lines.

The APP has several key components:

- **Employee training and compliance** – We educate our employees and provide training on compliance with all federal and state laws. Our goal is to be proactive in preventing bird collisions and electrocutions.
- **Construction design standards and mortality reduction measures** – We have a process to incorporate bird safety into the design of new lines and facilities.
- **Nest management and avian enhancement options** – We apply bird-safety tactics such as installing a dedicated de-energized pole for bird nesting or bird diverters to keep them away from wires.
- **Avian reporting systems and risk assessment methodologies** – We are updating our tracking system to improve our monitoring and reporting capabilities to allow us to be more proactive.
- **Public education** – We promote the need for migratory bird and habitat conservation and work cooperatively with federal and state agencies and non-profit organizations.



Through our system-wide Avian Protection Plan, AEP manages bird/power line interactions across our 11-state service territory, where a wide variety of bird species can be found.