# Delivering America's Energy Future

## Electric Power Industry Outlook

Mahatma Gandhi once said, "The future depends on what we do in the present."

Each day, the member companies of the Edison Electric Institute (EEI)—the nation's investor-owned electric companies—are hard at work, providing the reliable, affordable, secure, and increasingly clean energy that our customers need and expect.

At the same time, EEI's member companies are transitioning to cleaner energy resources and reducing their carbon emissions; modernizing the energy grid and building smarter energy infrastructure; and delivering innovative energy solutions in a rapidly changing world—all while sustaining financial health in a positive regulatory environment.

These are the fundamental principles, the strategic pillars, that continue to guide us.

Today, we are pleased to deliver our annual briefing on the state of the electric power industry. As we will outline, we are excited and optimistic about the opportunities we have before us. More important, we are confident the transformation we are leading will deliver America's energy future.

We also are proud that our member companies are woven into the fabric of our nation. As an industry, we support more than 7 million jobs across the country—about 1 out of every 20 jobs. We are responsible for $865 billion of our nation's GDP—about 5 percent. And, EEI's members contribute more than $400 million each year to charitable causes, not to mention the many hours of volunteer work done by company employees in their local communities.

With the support of our membership, we entered 2019 in a strong position, ready to build on the momentum we have established. We know that our job of developing common industry positions and advocating for them broadly is as vital as ever.

We are committed to putting our customers first, to maintaining reliability, and to keeping electricity prices low for all customers, especially low-income customers. We are advocating for policies that focus on outcomes, support progress, and accelerate innovation. And, we are working with the Administration and with policymakers on both sides of the aisle in Congress, and in the states, to find common ground and to advance policies that benefit our customers.

We can, and we must, work together to achieve meaningful progress with our nation's energy priorities. We have a tremendous and unparalleled opportunity in front of us to accelerate the reinvention of our business, to grow and to thrive amidst all the change.

# The Clean Energy Transformation

It truly is incredible just how dramatically our nation's energy mix has changed over the past decade. Today, more than one-third of our electricity comes from carbon-free sources (including nuclear energy and hydropower and other renewables), and another one-third comes from natural gas. And, since 2005, the percentage of renewable sources in the energy mix has quadrupled—more than half of new electricity generation capacity each year is wind and solar.

By 2024, our industry plans to retire more than 100 gigawatts of coal-based electricity generation. As electric companies continue to transition their generating fleets, their emissions are dropping significantly. At the end of 2017, the electric power sector's carbon dioxide ($CO_2$) emissions were 28 percent below a 2005 baseline, the lowest level since 1988 and lower than the transportation sector since 2016.

This impressive trend is expected to continue, as many EEI member companies have announced significant voluntary commitments to further reduce $CO_2$ by 2030 and 2050, many of which aim to reduce emissions by 80 percent below 2005 levels by 2050.

To ensure that the clean energy transformation reaches its full potential, EEI is advocating for public policies that increase research and development funding and support for the range of technologies needed to achieve clean energy goals, including energy efficiency, energy storage, renewables, existing and next-generation nuclear, other carbon-free technologies, and carbon capture utilization and storage.

We are calling on policymakers to help electrify the transportation sector—recognizing that transportation emissions now are the largest source of emissions in the United States—by modernizing federal transportation programs to encourage investments in electric transportation and charging infrastructure. Transportation electrification provides an opportunity to leverage the significant reductions in power sector emissions to achieve reductions in transportation sector emissions.

We also are urging policymakers to support ongoing investments in the energy grid, which are necessary to increase cost-effective electrification and to integrate advanced clean energy technologies reliably and affordably. And, we are promoting the development of more robust battery technologies for both electric vehicles and energy storage. An estimated 280 megawatts (MW) of advanced energy storage were installed in 2017, up 400 percent from 2014, and it is projected that another 338 MW of battery storage capacity were installed in 2018. Energy storage facilitates the integration of renewable energy resources into the energy grid.

Today, our customers increasingly are informed about energy, and it matters to them where it comes from and how they use it. Saving money, using less energy, and protecting the environment are all important to them, and to us. With the right policies in place, EEI's member companies can further reduce their emissions, help dramatically reduce the most significant emissions from other industries, and deliver the clean energy future that Americans want and expect.

# The Benefits of Electric Transportation

One area that touches all three of our strategic pillars and clearly demonstrates how the energy transformation has extraordinary potential for our customers and our businesses is electric transportation.

As an industry, we are passionate about electric transportation, and especially electric vehicles. Last year was a watershed year for EVs. In late October, we reached a milestone—more than 1 million EVs on America's roads—that we celebrated with automakers, infrastructure providers, environmental organizations, and policymakers. Today, the momentum from manufacturers around the world truly continues to surge.

Electric transportation is a huge win for our industry: it grows load; attracts new customers; reduces carbon emissions and improves air quality; and helps reinforce the energy grid.

A new report from EEI and the Institute for Electric Innovation projects that we will reach 2 million EVs by early 2021, and more than 18 million by 2030. About 9.6 million charge ports will be required to support them—a significant investment in EV charging infrastructure.

EEI's member companies are taking the lead, investing more than $1 billion over the next five years to deploy charging infrastructure and to create customer programs and projects to accelerate electric transportation.

From a policy perspective, we will continue to promote transportation electrification to benefit the environment and to enhance customer options. We will support investments in electric transportation and the necessary charging infrastructure. And, we will continue to support the EV tax credit for new vehicle purchases.

Last year, EEI worked with auto manufacturers to file comments on the Administration's proposed repeal of the corporate average fuel economy (CAFE) standards and the greenhouse gas vehicle standards that highlight the importance of EVs in addressing a range of air quality issues and electric companies' role in deploying charging infrastructure. EEI is urging the Administration to finalize these standards to include compliance flexibilities focused on EV deployment.

We also believe the Administration should work with California to find a solution that would allow the state to address its significant local environmental concerns, while respecting the Clean Air Act's balance of state and federal authority.

# Meeting Customers' Expectations

As an industry, our customers are at the heart of everything we do. We know that our customers have high standards along with changing needs and expectations. And, we believe it is more important than ever that we focus on enhancing the customer experience and providing the energy solutions that customers want.

Today, EEI's member companies continue to change the way they provide products and services to customers and to individualize those products and services—for large commercial and industrial customers, as well as residential customers.

Last year, under the guidance of EEI Chairman Lynn Good, we launched a new customer-focused initiative designed to improve the customer experience. Through this initiative, EEI is working with our member companies to identify successful and innovative approaches to enhance customer operations and customer engagement for residential customers in regulated markets.

Among the emerging energy solutions we have identified to date: Companies today are investing in energy management mobile apps to give customers instant access to their energy use data, more control over their energy use, and opportunities to save money on their energy bills. They are creating online energy marketplaces to deliver a branded and curated e-commerce experience to meet customers' expectations of service and convenience. They are using technology and data to deepen relationships with customers and to help them better engage with their energy use. And, they are making bill payment easier by enabling new payment channel options and reducing fees.

For our large customers, we are working to develop an electric industry carbon reporting template to simplify the customers' process of accessing data for their sustainability reporting. We also are working with large customers to provide sustainable and integrated energy solutions that meet their needs.

In addition, EEI is working with large customers on fleet electrification opportunities, including planning and coordination for charging infrastructure to remove barriers and to help create a seamless transition to fleet electrification. And, we continue to work with our member companies on how best to engage with local communities on their smart community goals.

We know that it is critical that we continue to deliver more tailored energy solutions that meet the unique needs of our diverse customers.

## The Political Backdrop

The 116th Congress that convened on January 3 is a group of lawmakers unlike any in the past. This is the most ethnically and gender diverse Congress in history and includes a record number of women, as well as our nation's first Native American Congresswomen.

Newcomers now hold seats left open by a wave of retirements and an unusually large number of incumbents who lost in last November's midterm elections. The U.S. House of Representatives has 100 first-time members, while the U.S. Senate has 11.

For the first time in more than a decade, the economy was not the top issue for voters in November. Exit polling revealed that voters were most concerned about health care, but it was ranked first by a plurality and not a majority. Economic concerns ranked second, while energy issues did not rank among voters' top concerns.

Energy *is* part of the broader discussion now. Climate change and other environmental issues quickly have emerged as priorities for the House Democratic freshmen. The newly formed Select Committee on the Climate Crisis, chaired by Representative Kathy Castor, will have a broad mission scope regarding climate change. While the select committee will not have authority to subpoena or write legislation, it will be required to provide policy recommendations to the House by March 31, 2020.

While we expect to see much discussion in the House around efforts to mitigate and adapt to the effects of climate change, passage of climate pricing legislation is unlikely with Republicans in control of both the Senate and the White House. The two parties could make progress on other climate-related policies, however.

Looking at other issues, there is broad congressional agreement on the need for an infrastructure package, but not on what one should contain or how to pay for it. Legislation related to energy grid security also may attract bipartisan support.

EEI always has taken a bipartisan approach to issues and has worked across party lines to advance our policy priorities. And, we will do the same with the new Congress.

Of course, working with federal lawmakers is only part of the equation. Much of the policy debate and direct oversight of our industry happens in the states.

At the state level, numerous governorships and state houses flipped in 2018, having an important impact on environmental and energy policy discussions and legislation, especially regarding renewable portfolio standards and carbon emissions.

One of the biggest stories on Election Day was ballot initiatives. We had two enormous ones in our industry: in Nevada on Question 3, a retail choice initiative, and in Arizona on Proposition 127, an aggressive renewable portfolio standard. Both initiatives would have raised customer electricity prices significantly, and voters overwhelmingly defeated them. As we look ahead to the 2020 elections, the outcomes of numerous ballot initiatives will be critical for energy policy in many states.

# The Regulatory Landscape

Turning to the regulatory arena, we expect some important decisions will be handed down this year.

At the federal level, the Environmental Protection Agency likely will finalize its repeal of the Clean Power Plan and issue its replacement rule, the Affordable Clean Energy rule. EEI submitted comments advocating that any final rule should consider the ongoing clean energy transition by providing states and sources with significant flexibility when determining compliance measures.

Also on the environmental policy front, EEI has long advocated for a replacement of the problematic 2015 Waters of the United States rule. Last year, EPA and the Army Corps of Engineers proposed a replacement, an important step in providing EEI's member companies with greater regulatory certainty and clarity, while avoiding substantial new operating requirements and increased customer costs.

Regulatory certainty regarding the continued operation, closure, and clean-up of coal ash basins also is needed. EEI is supporting EPA's efforts to revisit the coal ash rule by establishing realistic timeframes for the closure of ash basins.

EEI supported retention of the Mercury and Air Toxics Standards rule, which the industry implemented and which has led to significant mercury reductions. It appears that EPA will continue with its reconsideration of this rule. This in no way lessens our commitment to a healthy environment and to transition to an even-cleaner generation fleet.

At the Federal Energy Regulatory Commission (FERC), it has been a challenging period, marked with significant commissioner turnover and the tragic death earlier this year of Commissioner Kevin McIntyre. Despite this, the Commission has managed to make slow but meaningful progress on a few key policy issues, such as return on equity and pancaked complaints. FERC needs a full complement of commissioners to enable progress on the wider range of issues that have been identified by Chairman Neil Chatterjee.

EEI and our member companies have a number of priorities at FERC, with holistic reform of the Public Utility Regulatory Policies Act (PURPA) at the top of the list. PURPA is 40 years old. It is an outdated statute that leads to billions of dollars in excess costs for customers. EEI will continue to advocate that the Commission implement regulations to recognize the greater competition in today's electricity markets and to better protect customers.

Also at FERC, EEI is focused on the value that transmission will play in bringing about the connected and clean energy future. Issues such as returns on equity, transmission incentives, and Order 1000 are likely to be on the Commission's docket, and EEI will advocate for policies that recognize the important role that transmission will play, including in any discussion on resilience.

We believe FERC should continue to address energy price formation issues to ensure that energy prices reflect the cost to operate the system. This will help ensure that resources are compensated for the service they provide to the energy grid.

At the state level, EEI will continue to advocate for industry priorities in regulatory forums and proceedings to ensure the sustained growth of the industry, including an increased focus on the value of the energy grid and the importance of recovery mechanisms based on cost-causation.

In particular, EEI and our member companies will advocate for rate and regulatory reforms that recognize customer customization and segmentation, while ensuring fairness by balancing economic efficiency, equity, revenue adequacy, bill stability, and customer satisfaction.

# Infrastructure Policy

Smarter energy infrastructure is key to giving customers the energy solutions they want. To ensure that we can meet our customers' needs, EEI member companies invest more than $100 billion each year to make the energy grid smarter, stronger, cleaner, more dynamic, and more secure.

Since 2005, EEI member companies have invested more than $445 billion in transmission and distribution infrastructure. These investments help to increase the integration of renewable resources, power the rapid increase of electric vehicles, and facilitate the adoption of a broad array of smart technologies to better serve our communities. However, it takes more than investment alone. Critical policy changes are needed.

EEI continues to work with the Administration on a variety of important energy infrastructure siting and permitting issues that impact both electric transmission lines and natural gas pipelines. These issues include rights-of-way permits, vegetation management, avian protection, and reforms to the Clean Water Act, Endangered Species Act, and National Environmental Policy Act. While the Administration continues to advance these initiatives, the timing for action is uncertain.

At all levels, energy infrastructure siting and permitting processes often are burdensome, restrictive, and duplicative, creating delays that are unnecessarily costly to companies and customers. These processes need to be updated to reflect today's realities.

We also continue to advocate that everyone who uses the energy grid should share equitably in the costs of maintaining it. And, we believe policies should allow electric companies to plan, build, and operate the energy grid as a platform to integrate a diverse set of emerging technologies.

# Storm & Wildfire Response

Last year, Mother Nature tested our industry's resolve with four nor'easters, devastating wildfires, and a pair of major hurricanes, Florence and Michael, among other events.

Using what we have learned from previous storms, EEI implemented comprehensive and aggressive responses to each event.

We leveraged the industry-government partnership forged through the CEO-led Electricity Subsector Coordinating Council (ESCC) to facilitate timely communications and to coordinate resource allocation and response efforts.

Mutual assistance is a hallmark of our industry—our companies have some of the most talented, caring, and dedicated workers anywhere. Prior to the hurricanes and storms, companies activated mutual assistance networks and prepositioned thousands of lineworkers and support personnel into the affected areas, so they could hit the ground running as soon as it was safe. This provided badly needed support for impacted companies, helping to restore power to communities safely and more quickly than in the past.

We also are proud of the pivotal role EEI played last year in organizing and supporting the industry's response in Puerto Rico following Hurricane Maria. The 3,000 men and women who came together from across the industry to restore power to the people of Puerto Rico truly represented our industry at its finest. We will never forget the incredible spirit of the Puerto Rican people, and we know that many of the men and women who worked on the island say the experience has changed them forever.

Last year also marked one of the first times an EEI member company has used mutual assistance in response to a wildfire.

The unprecedented devastation caused by wildfires across the West highlights the continued need for our industry to look collectively for strategies to manage and mitigate the wildfire risk.

To that end, EEI has established a wildfire practice, and we are:

- Working with the Department of the Interior on access issues to perform vegetation management inside and outside our rights-of-way, and to process outstanding rights-of-way renewals;
- Working to address some of the legal and insurance challenges in California and other states; and
- Sharing the experiences and suggested practices of the companies and their employees who deal with wildfire risk and response every day.

It will take collaboration and hard work to find solutions for the multitude of complex issues regarding the prevention of wildfires and the response to the devastation they can cause.

## Energy Grid Security

Our industry's intensive work regarding storm and wildfire preparedness and response is part of our broader commitment to addressing a topic of paramount concern to policymakers and our customers: securing the energy grid. Beyond ensuring the safety of our customers and our workers, protecting the energy grid is our top priority.

EEI and our member companies constantly are working to improve grid security, reliability, and resiliency, and we will continue to strengthen cyber and physical defenses and to elevate preparedness. Our strong industry-government partnership, coordinated through the ESCC, will continue to be key to accomplishing our shared goal of protecting the energy grid against all threats.

Given the growing interdependence between the electric supply and natural gas transmission networks, we also are collaborating with our colleagues from the natural gas sector to address growing security and resilience issues.

Adding a high-tech element to our industry's culture of mutual assistance, EEI has worked through the ESCC to establish an industry-wide cyber mutual assistance program, which now includes more than 150 electric and natural gas companies. Collectively, we are focused on developing a strong culture of security across the energy sector.

As critical infrastructure providers, we understand we are a high-value target for adversaries. This is why we continue to improve our defenses, but also have focused on response and recovery—just as we do with storms—to ensure any impacts to our systems are limited and that we can help protect our nation's security and the safety of our customers.

It is important to recognize that during this time when division and disagreement often take center stage, all segments of the energy sector have found common cause to work together on the critical issues of security and storm response. This unity across the business models, with our natural gas counterparts, and with government leadership has provided extraordinary benefit to our customers and our communities.

## Tax Reform Implementation

Last year at this time, EEI and our member companies were celebrating congressional passage of pro-growth tax reform legislation, which was a major industry accomplishment that benefits our customers and our companies. To date, EEI member companies have announced almost $7 billion in tax reform benefits directed back to customers.

Throughout last year, EEI worked with the Department of Treasury and the IRS, calling for the correct technical implementation of the industry's priorities, particularly the appropriate allocation of interest on holding company debt. Regulations proposed in late November favorably address many of our issues. Most important, Treasury adopted the position that the industry exception to the interest limitation would be applied to the consolidated group and strongly supported EEI's position regarding allocation of interest on the basis that funds are fungible within a group.

This year, we will continue to advocate for any necessary technical fixes and for the correct regulatory implementation to ensure the appropriate treatment of interest for holding company debt.

# ESG/Sustainability

More than ever, we know that investors are looking for accountability from electric companies regarding their practices concerning the environment, social responsibility, and corporate governance, and the industry is responding.

Last year, EEI launched a first-of-its-kind, industry-wide ESG/sustainability reporting template that was developed specifically for investors, with direct input from our industry's major institutional investors. The template helps member companies provide investors, Wall Street analysts, and other key stakeholders with more consistent and uniform ESG/sustainability data and information delivered in a timely way.

As ESG-related issues further influence shareholder actions, this comprehensive reporting tool supports transparency and helps member companies receive credit for the incredible work they are doing.

We expanded the template in November to include members of the American Gas Association (AGA), and we will continue to refine and advance the template going forward.

We also are very proud of what our industry is doing to ensure that companies reflect the wonderful diversity of the communities that we serve. Today, a diverse and inclusive workplace is a social and business imperative. Last year, EEI developed a Diversity & Inclusion (D&I) Commitment that was endorsed by our Board of Directors in June.

Not only is D&I taking hold in the industry's general workforce, but in C-suites and board rooms as well. Regulated electric companies have more than three times the percentage of women CEOs compared to S&P 500 companies.

# Natural Gas Sustainability Initiative

As noted earlier, as electric companies continue to transition their generation mix to cleaner resources, the share of electricity generated from lower-emitting natural gas continues to increase. In fact, the electric sector is now the largest customer for natural gas.

Building off the success of the ESG template, EEI now is working with AGA and midstream and upstream natural gas associations on a new initiative focused on natural gas sustainability. The Natural Gas Sustainability Initiative's (NGSI's) priority is to demonstrate that the entire natural gas supply chain is becoming more sustainable from an ESG perspective. The goal is to show our investors, customers, regulators, and other key stakeholders that we are committed to using natural gas that is sourced from environmentally sound and sustainable processes.

A working draft of the NGSI conceptual framework encompasses the entire supply chain and focuses on the development of two key elements—consistent measurement of methane emissions along the natural gas supply chain and the transparent disclosure of these emissions. In addition, reporting will include acknowledgment of those companies that are meeting or exceeding sustainability goals.

# Industry Financial Highlights

A hot summer across much of the country powered electricity demand higher in 2018. Electric output grew by 4.2 percent in the third quarter and by 3.1 percent for the full year, reaching a record high that marginally surpassed 2007's total output. The gain was largely due to weather, as weather-adjusted output was flat year-to-year. Data from the National Oceanic and Atmospheric Administration show nationwide cooling degree days were 14 percent higher in Q3 2018 than their 10-year average, and 17 percent higher versus the same quarter last year.

Our industry remains the most capital-intensive industry in America. For the seventh consecutive year, we expect another industry record, with total capital expenditures projected at $127.1 billion in 2018. Industry capital expenditures, which have tripled since the cyclical low in 2004, continue to be an important growth engine.

Member company projections indicate that investment in the generation segment decreased in 2018 compared to recent years, but we expect to see an elevated level of investment in the transmission and distribution (T&D) segments. Distribution continually has increased on both an absolute and relative basis over the past five years, while transmission held a relatively constant share of total capital expenditures, but increased on an absolute basis. Together, the T&D segments comprise about half of our industry's total capital expenditures.

Natural gas-related spending continues to increase steadily as many of our companies have expanded natural gas operations, both organically and through acquisitions. The gas-related segment captures spending on pipeline and delivery infrastructure, not natural gas-based electric generation.

The EEI Index gained 1.3 percent in Q4 and returned a positive 3.7 percent in 2018, outperforming the major averages by 10 to 12 percentage points in Q4 and about seven to eight percentage points for the year. The EEI Index has produced a positive total return in 14 of the last 16 years. The industry's fundamental outlook was little changed in 2018, with most companies pursuing investment programs focused on regulated operations and targeting earnings growth rates in the mid-single digits with similar dividend growth.

Our industry extended its long-term trend of widespread dividend increases in 2018. A total of 39 companies increased their dividend last year, compared to 38 in 2017, 40 in 2016, 39 in 2015, 38 in 2014, and 36 in both 2013 and 2012. Companies that raised their dividend in 2018 represented 93 percent of the industry, a new record high that surpassed 2016's 91 percent. The average dividend increase-per-company during 2018 was 6.1 percent, with a range of 1.2 percent to 18.8 percent and a median increase of 5.6 percent.

The industry's dividend payout ratio was 54.4 percent for the 12 months ended September 30, 2018, remaining among the highest of all U.S. business sectors. As of December 31, 2018, 41 of the 42 companies in the EEI Index were paying a common stock dividend. Importantly, the Tax Cuts and Jobs Act, which was signed into law in December 2017, maintains preexisting tax rates for dividends and capital gains. This is crucial to avoid a capital-raising disadvantage for the high-dividend companies in our industry.

The industry continues to strengthen its credit quality, which is currently a BBB+ average (S&P scale). Prior to its latest notch increase in 2014, the industry average had remained unchanged at BBB since the early 2000s. In terms of total credit actions in 2018, downgrades slightly outnumbered upgrades.

From 2013 through 2017, credit actions were predominantly positive in each year as electric companies continued to build upon their regulatory relationships and to focus on their regulated operations.

This long-term improvement in credit is correlated with the gradual transition to a more regulated business model.

It is widely known that electric companies have been pursuing a back-to-basics approach to their businesses since the early 2000s. In fact, between 2003 and 2017, the industry moved from a balance sheet that was 63 percent regulated to one that is 81 percent regulated. This is especially important as our capital investment levels have risen dramatically.

# Conclusion

When visitors and EEI employees step off the elevators and into EEI's offices in Washington, they are greeted with a Thomas Edison quote: "What you are will show in what you do."

EEI's member companies already are making significant strides in carbon reduction, deployment of renewables, transportation electrification, and more. Among large industrial sectors, we are far and away out ahead as we work to deliver—and to lead—America's energy future.

Now, more than ever, we are working to show the way forward by demonstrating how we can come together as an industry to resolve challenges and to serve our customers and our communities. In doing that, we achieve our best.