



An **AEP** Company

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# The Utility Business Model of the Future

Chris Beam

President and Chief Operating Officer

*BOUNDLESS ENERGY<sup>SM</sup>*



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# Who We Are

## 2018 AEP COMPANY OVERVIEW



Number of Employees

**17,582**



Regulated & Competitive  
Customers

**5.8 million**



Service Territory

**200,000 square miles**



Total Assets

**\$68.8 billion**



Charitable Giving

**\$25.5 million**



Transmission

**40,000 miles**



Distribution

**220,000 miles**



Total Generating  
Capacity (owned & PPA)

**32,000 MW**



Total Renewable  
Portfolio\*

**5,272 MW**

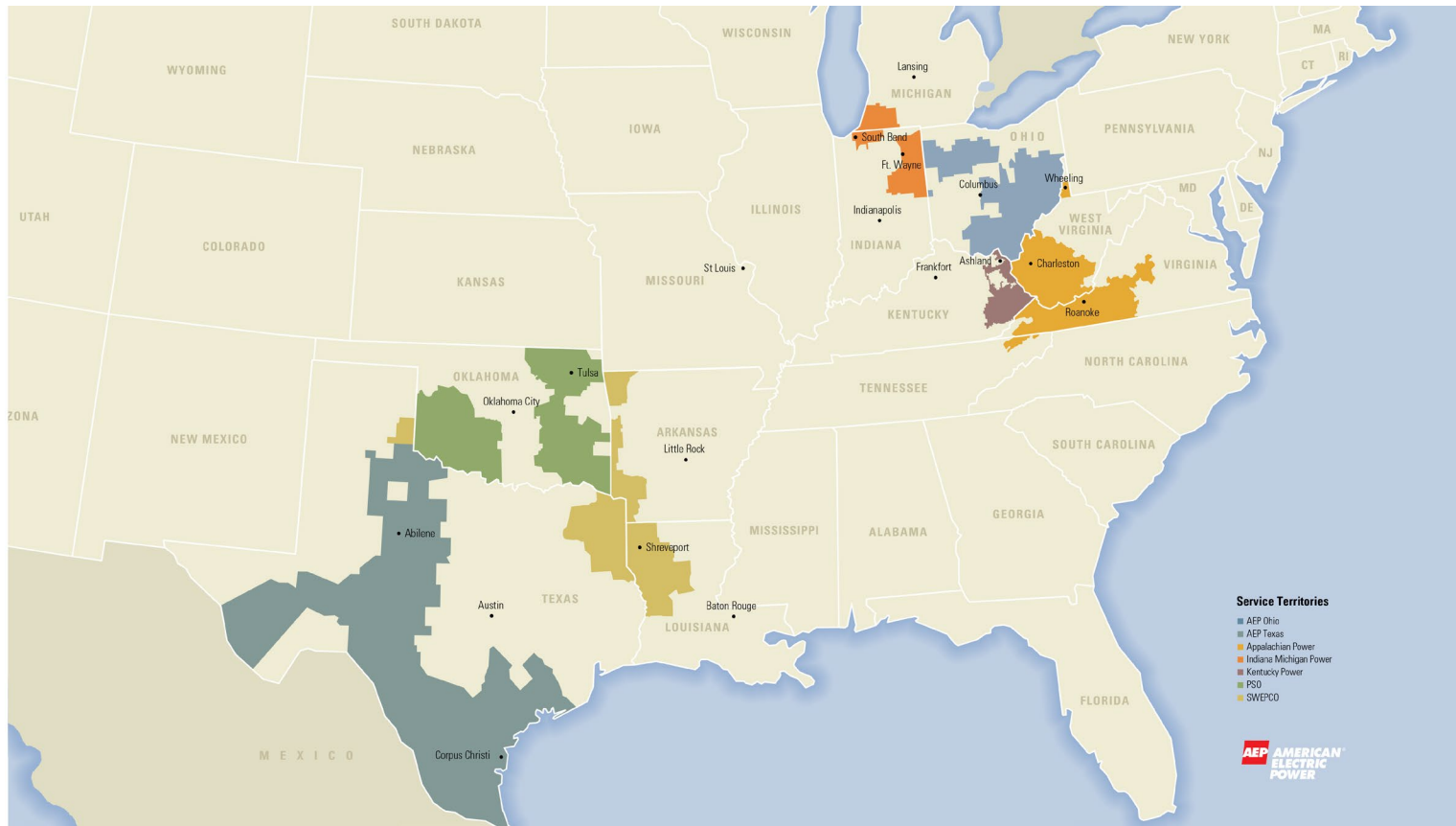
\* Includes expected capacity as of year-end 2019.

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# Where We Are



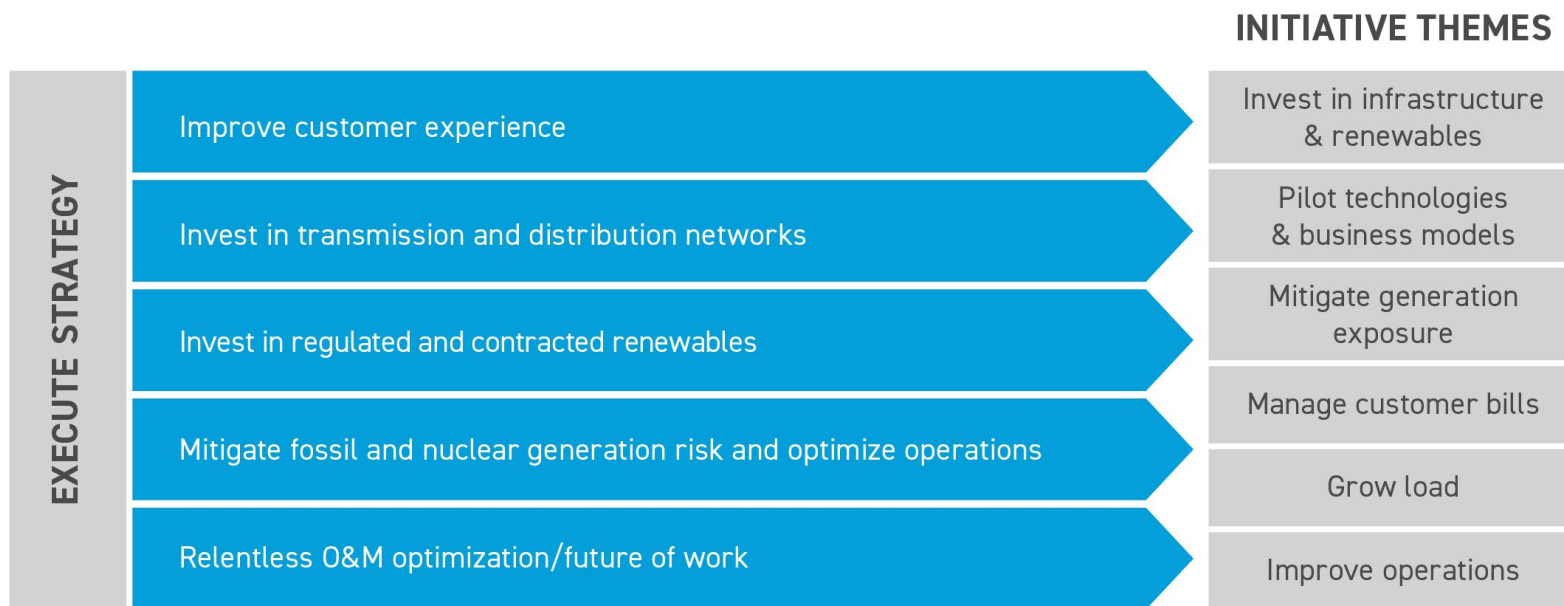
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# Changing Landscape

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- Regulatory frameworks
- Environmental concerns
- Grid modernization
- Employee resources
- Customer needs/demands
- Cost containment

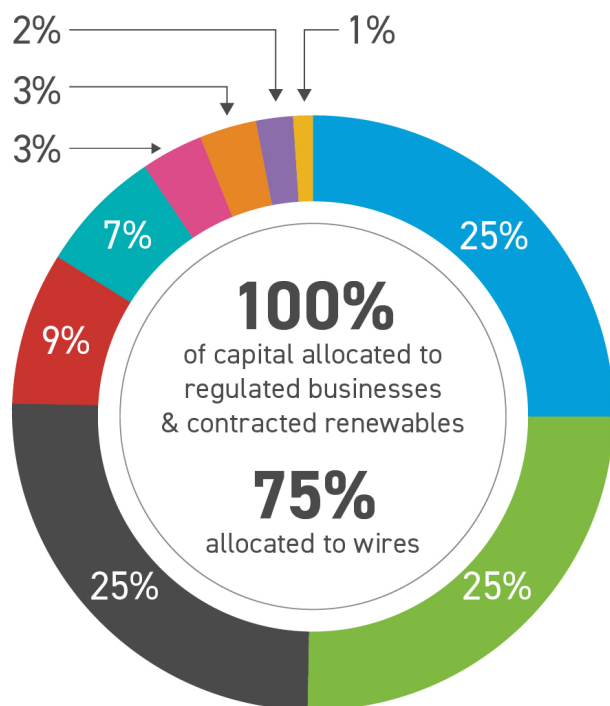
# 2023 Strategy & Execution



**WE ARE FOCUSED ON EXECUTING OUR STRATEGY WHILE IMPROVING  
THE CUSTOMER EXPERIENCE.**

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# 2019-2023 Capital Forecast



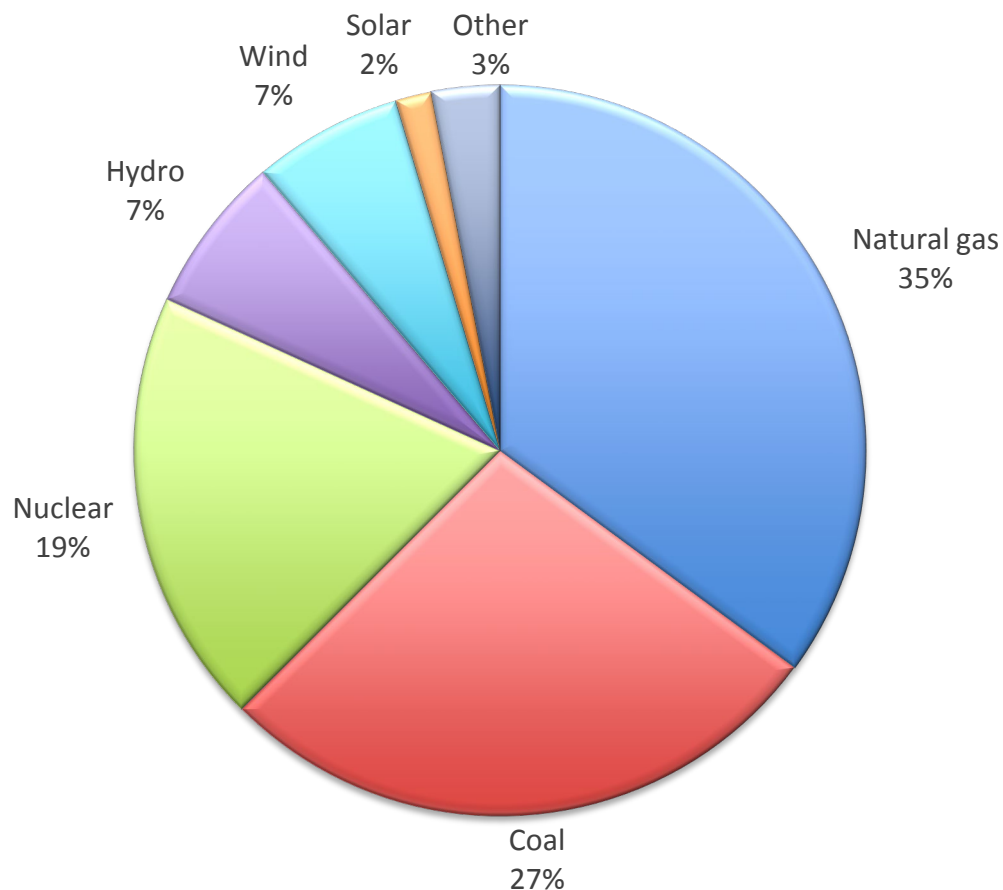
<span style="color: blue;">■</span> AEP Transmission Holdco	<b>\$8.3B</b>
<span style="color: green;">■</span> Transmission	<b>\$8.3B</b>
<span style="color: black;">■</span> Distribution	<b>\$8.3B</b>
<span style="color: red;">■</span> Corporate	<b>\$2.8B</b>
<span style="color: teal;">■</span> Contracted Renewables	<b>\$2.2B</b>
<span style="color: magenta;">■</span> Regulated Environmental Generation	<b>\$1.1B</b>
<span style="color: orange;">■</span> Regulated Fossil/Hydro Generation	<b>\$1.0B</b>
<span style="color: purple;">■</span> Nuclear Generation	<b>\$0.5B</b>
<span style="color: yellow;">■</span> Regulated Renewables	<b>\$0.5B</b>

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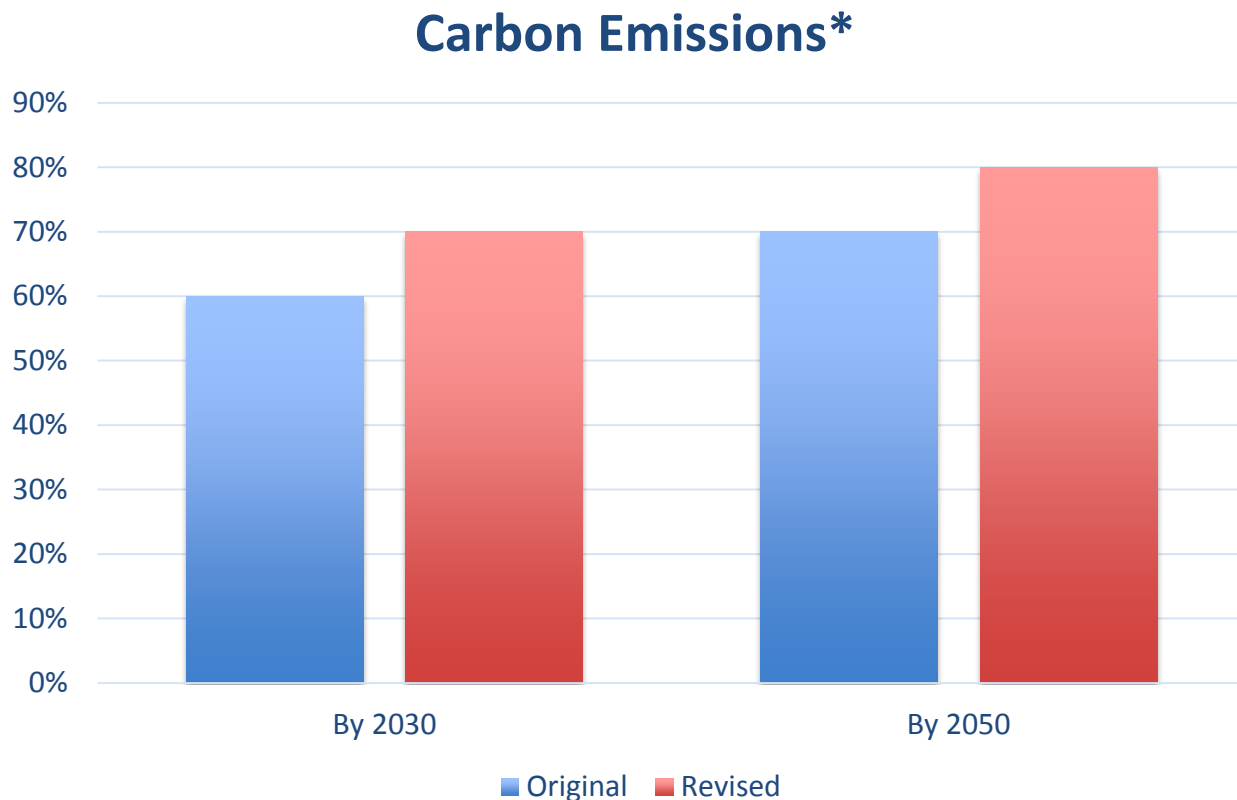
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# US Electric Generation Fuel Mix



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# AEP Accelerates Its Own Emissions Targets



\* Reductions from 2000 levels

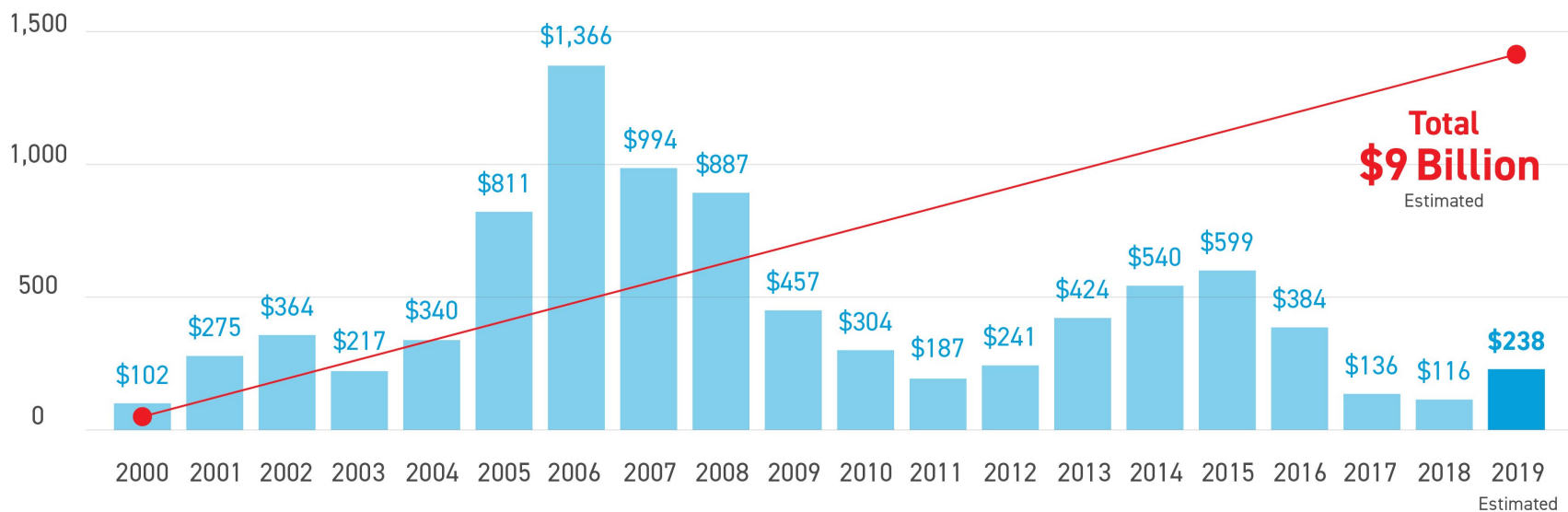
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# Environmental Control Investments\*

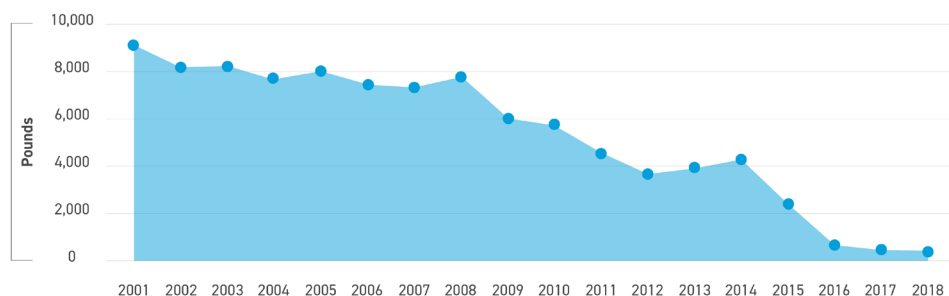


\* In millions

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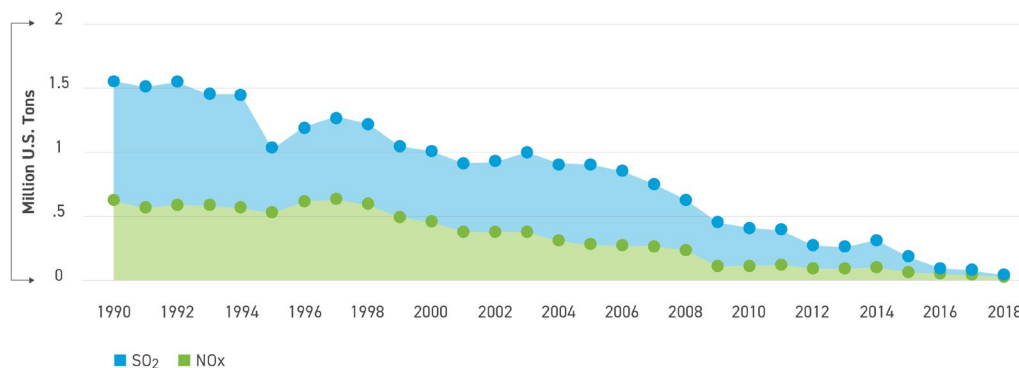
# Non-carbon GHG Reductions

## TOTAL AEP SYSTEM MERCURY AIR EMISSIONS



AEP equity share of mercury air emissions from Toxic Release Inventory reporting. 2018 was estimated with MATS program emission monitors.

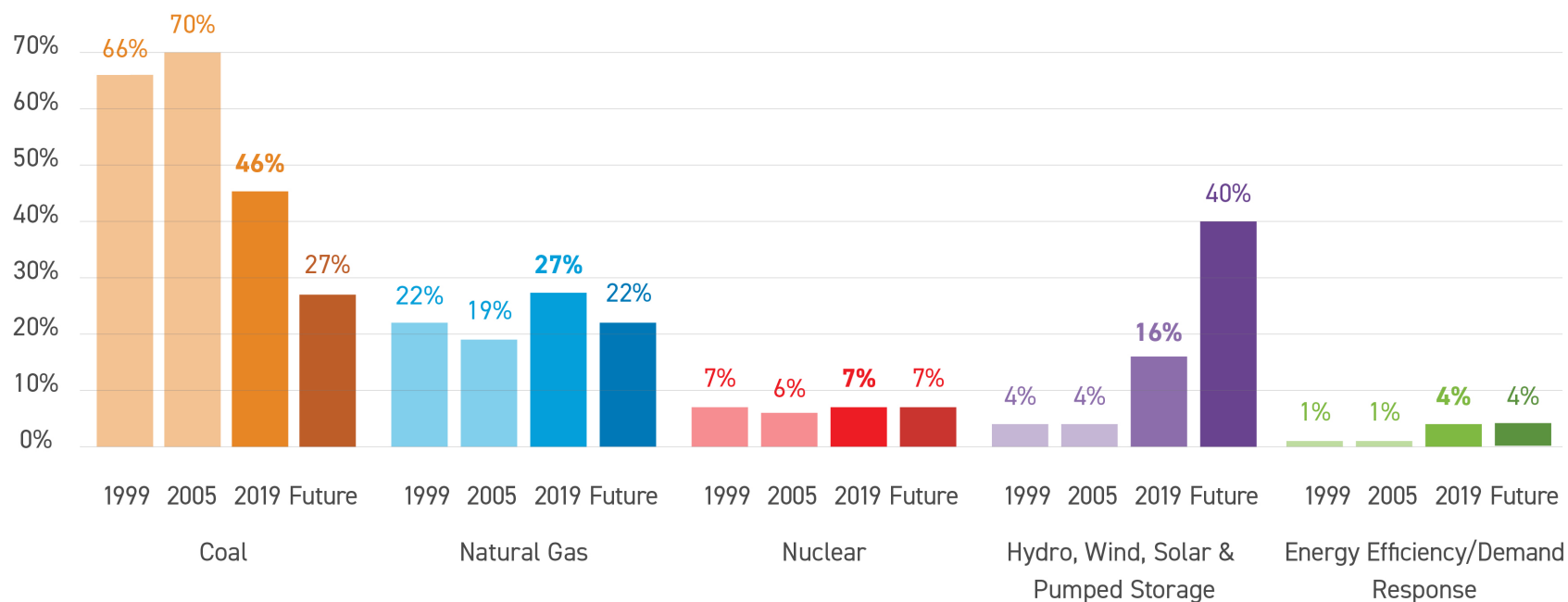
## TOTAL AEP SYSTEM NOx & SO<sub>2</sub> EMISSIONS



Direct annual emissions of SO<sub>2</sub> and NOx from AEP's ownership share of generation as reported under Title IV of the 1990 Clean Air Act.

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# Transforming Our Generating Fleet

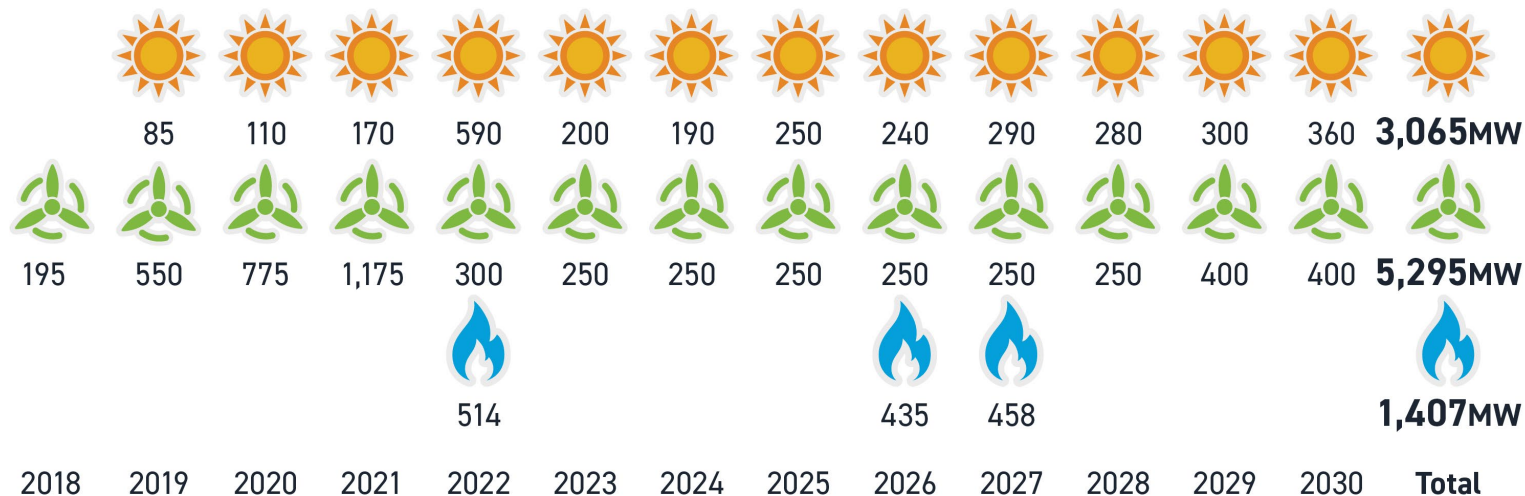


2019 includes expected capacity as of year-end 2019. Future includes IRP forecasted additions and retirements through 2030. Energy Efficiency/Demand Response represents avoided capacity rather than physical assets.

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# Planned Generation Additions

## Regulated and AEP Ohio Purchase Power Agreement



Wind and solar represent nameplate MW capacity.

Source: Current Internal Integrated Resource Plans as of April 2018.

Actual additions depend on market conditions, regulatory approval, customer demand and other external factors.

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# Renewable Portfolio and 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 2027 phased in beginning in 2009.

### MICHIGAN (mandatory)

1% annual reduction of previous year  
retail sales in 2012 to through 2021.

### 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.

Note: Indiana EE goals are determined through the  
Integrated 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 15% by 2021.

### 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.

### Virginia\* (voluntary)

Phase-in starting at 4% in 2010  
increasing to 15% by 2025.

### Texas (mandatory)

Goal of 5,880 MW by 2015;  
10,000 MW by 2025.

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

\* Virginia: Senate Bill 966, which will take effect on July 1, 2018, requires APCo to make and/or seek approval for investments in certain renewable projects and energy efficiency programs.

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# Grid Modernization

Company	Smart Meters	DACR Circuits	VVO Circuits
AEP Ohio	706,027	90	41
AEP Texas	1,077,173	27	0
Public Service Company of Oklahoma	575,574	45	52
Indiana Michigan Power Company	15,366	36	49
Kentucky Power Company	—	24	27
Appalachian Power Company	197,985	46	3
Southwestern Electric Power Company	—	34	0

Smart Grid plans are continuously evolving. Data is approximate/estimated.

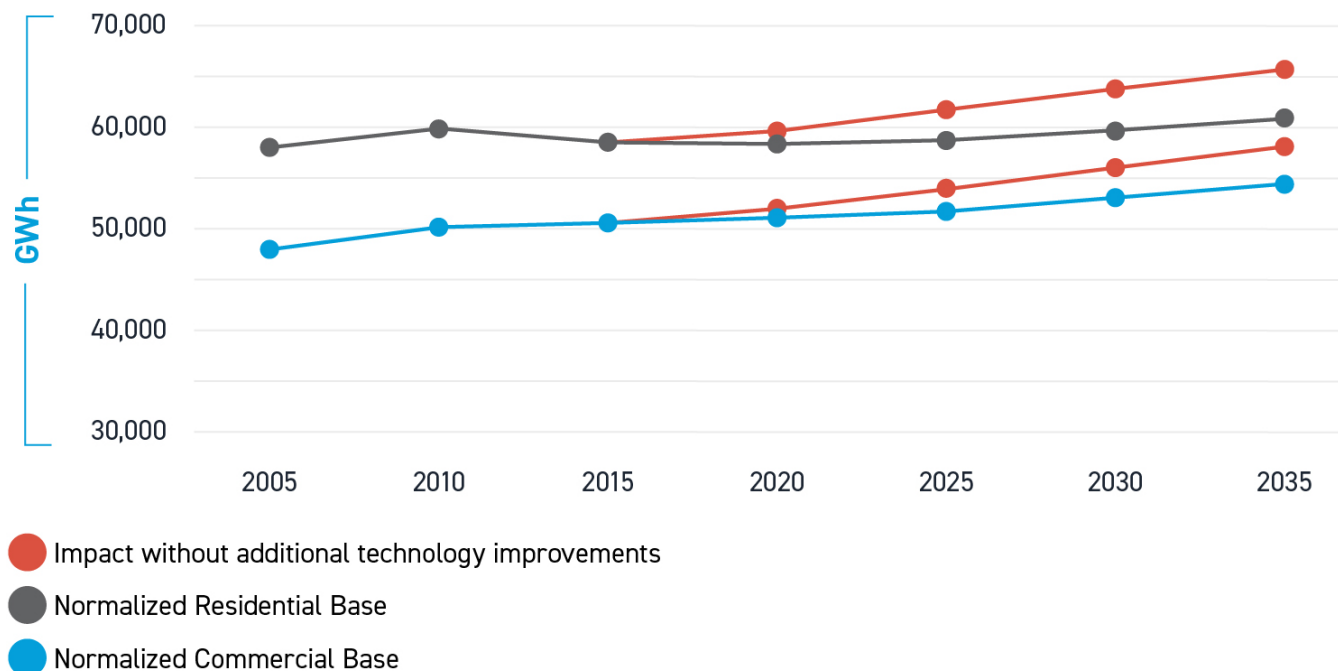
DACR — Distribution Automation Circuit Reconfiguration. VVO — Volt VAR Optimization.

As of March 2019.

AMI/Smart Meter data through January 25, 2019.

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# Energy Efficiency Tech 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.

# Reliability Indices Measure Performance

## ANNUAL AEP SYSTEMWIDE RELIABILITY INDICES

	2016	2017	2018
SAIFI <sup>1</sup>	1.428	1.389	<b>1.531</b>
SAIDI <sup>2</sup>	216.3	215.0	<b>256.6</b>
CAIDI <sup>3</sup>	151.5	154.8	<b>167.7</b>

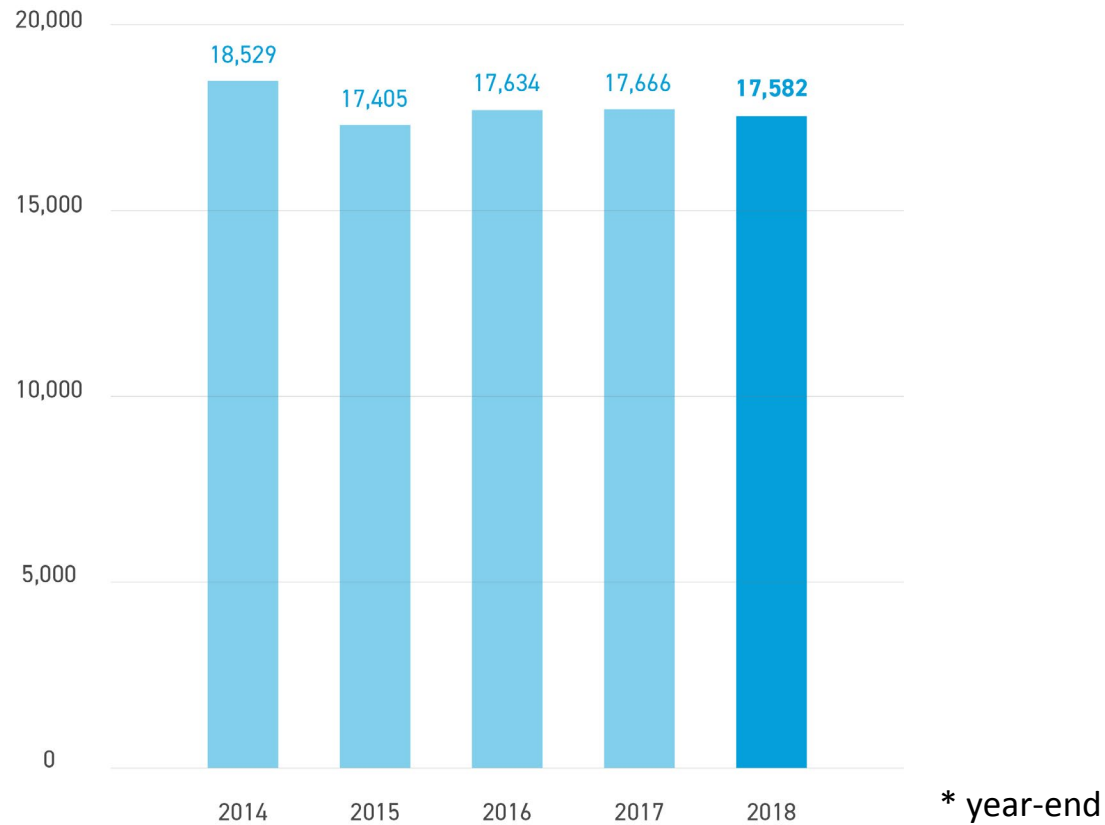
<sup>1</sup> System Average Interruption Frequency Index is the average number of sustained interruptions experienced by customers in a year.

<sup>2</sup> System Average Interruption Duration Index is the average number of minutes customers are without electric service in a year.

<sup>3</sup> Customer Average Interruption Duration Index represents the average time required to restore service after a sustained interruption occurs.

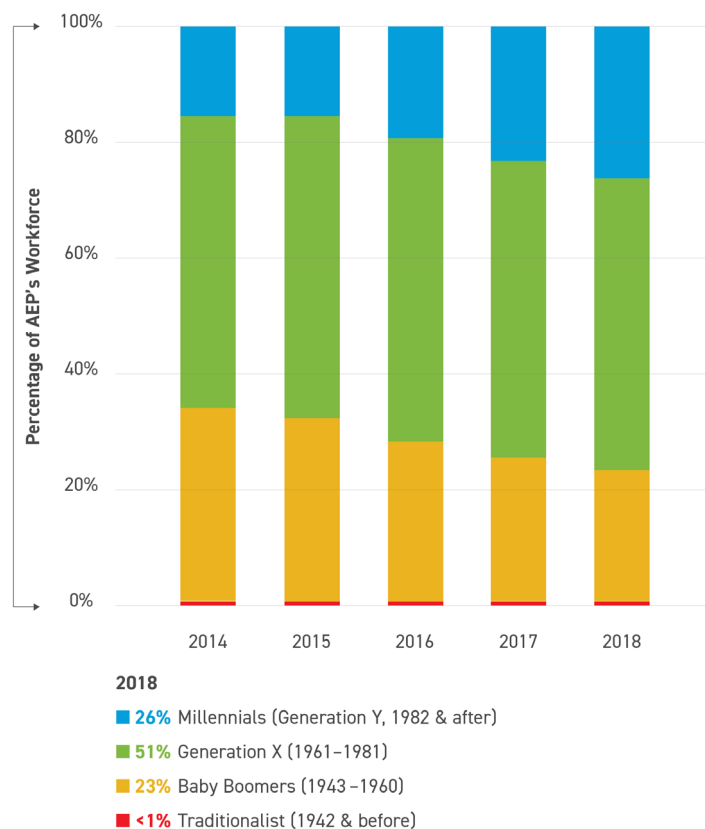


# AEP Employees\*



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# Workforce Demographics



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# Corporate Sustainability Goals

## ENERGY & ENVIRONMENT

Energy Transition

Environment

## SOCIAL RESPONSIBILITY

Safety & Health

Diversity & Inclusion

Community Building

## ECONOMIC DEVELOPMENT

Economic Impact

Customer Focus

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