Positioning AEP for the Future

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American Electric Power
Agenda

• Overview of AEP
• Trends Impacting Our Industry
• Strategic Focus Areas
  – Business
  – Sustainability
• Generation Transformation & The Grid of the Future
• Innovation & The Future of Work
• Conclusion / Q&A
Overview of AEP

- Regulated & Competitive Customers: 5.8 million
- Territory: 200,000 sq. miles
- Transmission: 40,000 miles
- Distribution: 219,000 miles
- Total Generating Capacity: 32 GW (owned & PPA)
- Total Renewable Portfolio: 5,269 MW
- RTOs Served: PJM, SPP, ERCOT

Data from AEP 2019 Corporate Accountability Report
# Trends Impacting Our Industry

## Global Mega-Trends
- Declining technology costs
- Integration of SMART elements/omni-directional flow of energy, information
- Digitization and data analytics
- Changing consumer preferences
- Changing demographics
- Environmental sustainability
- Security and cyber

## Industry Specific Trends
### Customers/Demand
- Decreasing electricity usage
- Electrification opportunities
- Customers value resiliency differently
- Continuing concerns regarding CO₂ and other emissions
- Customer headroom challenges

### Competitors
- Non-traditional players without regulatory restrictions

### Policy
- Conflicting state regulations
- Lowest cost doesn’t necessarily drive policy

### Technology
- Decreasing storage and distributed generation costs
- Increasing storage and distributed generation options
- EV growth

### Markets
- Low cost natural gas
- Marginal cost of electricity approaching cost of renewables
- Challenges recovery capacity value
AEP's 2023 Strategy & Execution

**Strategic Focus Areas**

**EXECUTE STRATEGY**

- Improve customer experience
- Invest in transmission and distribution networks
- Invest in regulated and contracted renewables
- Mitigate fossil and nuclear generation risk and optimize operations
- Relentless O&M optimization/future of work

**INITIATIVE THEMES**

| Invest in infrastructure & renewables |
| Pilot technologies & business models  |
| Mitigate generation exposure          |
| Manage customer bills                |
| Grow load                            |
| Improve operations                   |

We are focused on executing our strategy while improving the customer experience.
Strategy-Driven Sustainability Goals

- **Energy & Environment**
  - Carbon Reduction Goals
  - Grid Modernization
  - Technology & Innovation

- **Social Responsibility**
  - Supplier Diversity
  - Safety & Health
  - Customer Focus
  - Diversity & Inclusion

- **Economic Impact**
  - Economic Development
Transforming Our Generating Fleet

TRANSFORMING OUR GENERATION FLEET – AEP’S GENERATING RESOURCE PORTFOLIO

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.
### AEP's Expected Yearend 2019 Renewable Portfolio, in MW

<table>
<thead>
<tr>
<th>Hydro, Wind, Solar &amp; Pumped Storage</th>
<th>Owned MW</th>
<th>PPA MW</th>
<th>Total MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEP Ohio</td>
<td>209</td>
<td></td>
<td>209</td>
</tr>
<tr>
<td>Appalachian Power Company</td>
<td>785</td>
<td>575</td>
<td>1,360</td>
</tr>
<tr>
<td>Indiana Michigan Power Company</td>
<td>36</td>
<td>450</td>
<td>486</td>
</tr>
<tr>
<td>Public Service Company of Oklahoma</td>
<td>1,137</td>
<td></td>
<td>1,137</td>
</tr>
<tr>
<td>Southwestern Electric Power Company</td>
<td>469</td>
<td></td>
<td>469</td>
</tr>
<tr>
<td>Competitive Wind, Solar &amp; Hydro</td>
<td>1,433</td>
<td>175</td>
<td>1,608</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,254</strong></td>
<td><strong>3,015</strong></td>
<td><strong>5,269</strong></td>
</tr>
</tbody>
</table>

**APPROXIMATELY 11,900 MW**

**OF RENEWABLE GENERATION INTERCONNECTION ACROSS THE U.S. VIA AEP'S TRANSMISSION SYSTEM TODAY**
Reducing Our Carbon Footprint

TOTAL AEP SYSTEM — ANNUAL CO₂ EMISSIONS in million metric tons

Direct CO₂ emissions from AEP’s ownership share of generation as reported under Title IV of the 1990 Clean Air Act.

CO₂ 2000-2018 Actual 59%

AEP’S CO₂ EMISSION REDUCTION GOALS

60% by 2030
80% by 2050 (both from a 2000 baseline)
The Grid of the Future

Changing Role of Centralized Generation:
- Optimization (flexibility, longevity, asset health)
- Innovation (analytics, technology, operations)
- “Glide Path” (extracting value over remaining life)

Clean, Efficient, Sustainable & Flexible Energy
At or near-meter solutions
Customer/Community Solutions
Innovation and the Future of Work

• Technology Innovation
  – Renewables
  – Microgrids
  – Energy Storage

• Future of Work
  – Building New Skills
  – Digital Transformation
  – Leveraging our Data
    • Analytics
    • Governance
Digital Transformation

To keep pace with rapid technology growth and industry change we created **CHARGE**

- **CHARGE** will *expand* our depth and ability to capitalize on new digital products and solutions for our employees and customers.

- **CHARGE** will *enable* us to improve efficiencies and manage costs through broader implementation of digital tools, increasing customer and shareholder value.

- **CHARGE** will *empower* our workforce to bring their innovative ideas to life, fueling AEP’s sustainable growth through innovation.
Conclusion & Takeaways

• Our industry is changing and we **MUST** change with it

• Technology is the focus
  – State-of-the-Art, clean power generation technologies
  – Customer-focused solutions
  – Enhancing the Future of Work for our employees

• A culture of innovation will get us there
Planned Resource Additions

### Solar Additions (MW)

<table>
<thead>
<tr>
<th>Operating Co.</th>
<th>2020-2023</th>
<th>2024-2027</th>
<th>2028-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEP Ohio</td>
<td>Up to 400 *</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>APCo</td>
<td>15</td>
<td>300</td>
<td>450</td>
</tr>
<tr>
<td>I&amp;M</td>
<td>-</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>KPCo</td>
<td>30 *</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>PSO</td>
<td>11</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>SWEPCO</td>
<td>-</td>
<td>450</td>
<td>550</td>
</tr>
<tr>
<td>Totals</td>
<td>Up to 456</td>
<td>1,520</td>
<td>1,790</td>
</tr>
</tbody>
</table>

* Subject to regulatory filings currently underway

### Wind Additions (MW)

<table>
<thead>
<tr>
<th>Operating Co.</th>
<th>2020-2023</th>
<th>2024-2027</th>
<th>2028-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEP Ohio</td>
<td>Up to 500 *</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>APCo</td>
<td>-</td>
<td>300</td>
<td>-</td>
</tr>
<tr>
<td>I&amp;M</td>
<td>-</td>
<td>600</td>
<td>450</td>
</tr>
<tr>
<td>KPCo</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PSO</td>
<td>-</td>
<td>Up to 1,000 *</td>
<td>-</td>
</tr>
<tr>
<td>SWEPCO</td>
<td>Up to 1,200 *</td>
<td>-</td>
<td>600</td>
</tr>
<tr>
<td>Totals</td>
<td>Up to 2,700</td>
<td>1,100</td>
<td>1,250</td>
</tr>
</tbody>
</table>

### Natural Gas Additions (MW)

<table>
<thead>
<tr>
<th>Operating Co.</th>
<th>2020-2023</th>
<th>2024-2027</th>
<th>2028-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>I&amp;M</td>
<td>-</td>
<td>-</td>
<td>1,500</td>
</tr>
<tr>
<td>PSO</td>
<td>410 (1)</td>
<td>373 (1)</td>
<td>-</td>
</tr>
<tr>
<td>Totals</td>
<td>410</td>
<td>373</td>
<td>1,500</td>
</tr>
</tbody>
</table>

(1) To replace expiring PPA

### Total Projected Resource Additions (MW)

<table>
<thead>
<tr>
<th>Resource</th>
<th>2020-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar</td>
<td>Up to 3,766</td>
</tr>
<tr>
<td>Wind</td>
<td>Up to 5,050</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>2,283</td>
</tr>
<tr>
<td>Totals</td>
<td>Up to 11,099</td>
</tr>
</tbody>
</table>

Updated 02/11/2019
## Distributed Energy Resource Attributes

<table>
<thead>
<tr>
<th></th>
<th>Gas Turbine / Recip Engine</th>
<th>Solar PV</th>
<th>Wind</th>
<th>Fuel Cell</th>
<th>Batteries</th>
<th>Virtual Power Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scalability</strong></td>
<td>●</td>
<td>◔</td>
<td>◔</td>
<td>◔</td>
<td>◔</td>
<td>◔</td>
</tr>
<tr>
<td><strong>Flexibility</strong></td>
<td>●</td>
<td>◔</td>
<td>◔</td>
<td>○</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Emissions</strong></td>
<td>◔</td>
<td>●</td>
<td>●</td>
<td>◔</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>◔</td>
<td>●</td>
<td>●</td>
<td>○</td>
<td>◔</td>
<td>○</td>
</tr>
<tr>
<td><strong>Ancillary Service Capability</strong></td>
<td>●</td>
<td>○</td>
<td>◔</td>
<td>◔</td>
<td>◔</td>
<td>◔</td>
</tr>
<tr>
<td><strong>Resilience</strong></td>
<td>●</td>
<td>◔</td>
<td>◔</td>
<td>◔</td>
<td>◔</td>
<td>◔</td>
</tr>
</tbody>
</table>

- **Strength** ● ◔ ◔ ◔ ◔
- **Weakness** ○
How **CHARGE** Fits into the Business

- **SERVING NEW USERS/CUSTOMERS WITH NEW AND DIFFERENTIATED PRODUCTS**
- **SERVING EXISTING USERS/CUSTOMERS THROUGH EXISTING PRODUCTS AND ENHANCEMENTS**

**USER & PRODUCT DEVELOPMENT**

**TRANSFORMATIONAL**

**ADJACENT**

**IT + CHARGE**

**CORE IT**

**DIGITAL PORTFOLIO COMPOSITION**

- **60%**
- **30%**
- **10%**