Electric Utility Perspective:
Gas-Electric Harmonization Policy

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NCSL Natural Gas Policy Institute
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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: 31,000 MW
(owned & PPA)

Total Renewable Portfolio: 4,310 MW

RTOs Served: PJM, SPP, ERCOT

Data from AEP 2018 Corporate Accountability Report
Transforming Our Generation Fleet

As of 08/01/2019. Future includes IRP forecasted additions and retirements through 2030. Energy Efficiency / Demand Response represents avoided capacity rather than physical assets.
Commercial Operations

UTILITY COMMERCIAL OPERATIONS
Fuel procurement, generation dispatch, energy trading, financial analysis, meteorology, load forecasting

REGIONAL TRANSMISSION ORGANIZATIONS AND INDEPENDENT SYSTEM OPERATORS
Market operations, grid control and monitoring, optimization of units and financial performance
Key Challenges

1. The **gas nomination timeline** creates problems between the timing of gas purchases and the electricity markets.

2. The **variability of the generation mix** in certain regions is a driver for the amount of natural gas needed.

3. If **natural gas prices** remain low, the share of gas generation in the electricity market will continue to grow.

4. New gas plants require new pipelines. Building out this infrastructure creates **cost recovery** challenges.
### Gas Nomination Timeline

<table>
<thead>
<tr>
<th>Time</th>
<th>Nomination Deadline</th>
<th>Schedule Issued</th>
<th>Start of Gas Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timely</td>
<td>1:00 PM</td>
<td>5:00 P.M.</td>
<td>9:00 A.M. Next Day</td>
</tr>
<tr>
<td>Evening</td>
<td>6:00 P.M.</td>
<td>9:00 P.M.</td>
<td>9:00 A.M. Next Day</td>
</tr>
<tr>
<td>Intra-Day 1</td>
<td>10:00 A.M.</td>
<td>1:00 P.M.</td>
<td>2:00 P.M. Current Day</td>
</tr>
<tr>
<td>Intra-Day 2</td>
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<td>5:30 P.M.</td>
<td>6:00 P.M. Current Day</td>
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<tr>
<td>Intra-Day 3</td>
<td>7:00 P.M.</td>
<td>10:00 P.M.</td>
<td>10:00 P.M. Current Day</td>
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</tbody>
</table>

**CHALLENGE:**

RTOs can call for generation at any time.

**AEP owns 17 regulated natural gas power plants across multiple RTOs.**
Variability Creates Complexity

Higher penetration of renewables in certain regions results in more day-to-day variability in the fuel mix.

Southwest Power Pool Mid-Term Wind Forecast

SPP’s all-time peak load amount is 50,662 MW.
Natural gas production continues to increase, but so does demand.

Price remains low, driving demand for gas in electricity markets.
If AEP were to secure 100% Firm Transportation for its gas generating fleet, the cost to our customers would exceed $100 million for reservation fees alone.

Expensive new pipelines needed to serve new gas plants.

Gas transporters need firm contracts to build, i.e. 100% plant capacity, 24x7.

Peaker plants run at limited capacity.

Cost Recovery Challenge
Key Takeaways

1. Create **additional gas nomination cycles**, preferably hourly.

2. Consider **cost recovery solutions** to the gas pipeline infrastructure challenge.

3. Plan policy around a **complex energy grid** with less coal, low-cost natural gas, and expanding renewables.

4. **Natural gas generation** is an integral part of AEP’s portfolio.