Dynegy Overview and the Challenges for Coal

Rob Hardman
Mississippi Valley Coal Trade and Transportation Conference
New Orleans
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Topics for Discussion

I. Dynegy Overview

II. Trends in US coal consumption

III. Challenges for Coal
<table>
<thead>
<tr>
<th>Year</th>
<th>MW</th>
<th>Events</th>
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</thead>
<tbody>
<tr>
<td>2011</td>
<td>10,000</td>
<td>- July – Current executive management team installed</td>
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<td></td>
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<td>- November – Filed for Chapter 11</td>
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<tr>
<td>2012</td>
<td>10,000</td>
<td>- October – Exited Chapter 11</td>
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<td>- October – Current Dynegy Board of Directors seated</td>
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<td>2013</td>
<td>13,000</td>
<td>- December – Purchase of 3,000 MW of MISO generation and associated retail business from Ameren</td>
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<td>2015</td>
<td>26,000</td>
<td>- April – Duke &amp; ECP acquisition of 13,000 MW of PJM and ISO-NE generation</td>
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<td>2017</td>
<td>31,410</td>
<td>- February – ENGIE acquisition of 9,000 MW of mostly gas-fueled PJM, ISO-NE, and ERCOT generation</td>
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Dynegy Today

Company Footprint

Contributions from gas-fired generating plants will increase with the recent addition of the ENGIE portfolio.

Combined Company Capacity Distribution

Capacity by Asset Type

- CCGT: 37%
- CT: 18%
- Coal: 15%

Capacity by Region

- PJM: 43%
- ISO-NE: 13%
- ERCOT: 18%
- MISO: 8%
- NYISO: 15%
- CAISO: 3%

31,410 MW of generating capacity operating in 12 states
The Right Assets in the Right Markets

Coal Portfolio - 9 GW

58% PJM  
35% MISO  
7% ERCOT

- 1,400 MW of MISO generation exported to PJM
- Unprofitable units retired or mothballed
- Declining fuel costs

Gas Portfolio - 22 GW

45% PJM / 19% ERCOT  
18% ISO-NE / 12% CAISO  
6% NYISO

- Largest merchant CCGT fleet in PJM and ISO-NE
- Adding capacity via low-cost uprates
- CCGT fleet running as baseload
- Advantaged access to low-cost gas

Dynegy Coal Burn

The coal portfolio benefits from rising natgas prices

Dynegy Natural Gas Burn

The gas portfolio excels in today’s low gas price environment
Trends in US Coal Consumption
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- US Coal Consumption – 900 million tons or greater for 21 straight years (1990 – 2011)
**Trends in US Coal Consumption**

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  - 50 million tons/year since 2008
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- What happens in 2017 and beyond?
Three Challenges for Coal

1. Natural gas is here to stay

**Natural Gas Prices (Past and Future)**

- Dominion South Point
- Henry Hub

**Ohio Generation Cost in 2016**

- Nuclear
- Combined Cycle
- Illinois Basin
- NAPP
- PRB

- **Gen Cost, $/MW-hr**
  - 0
  - 5
  - 10
  - 15
  - 20
  - 25
  - 30
  - 35

**Market Price = AEP Dayton, Around the Clock Price**
Three Challenges for Coal

1. Natural gas is here to stay

**Natural Gas Plant**
- 7,000 HR x $3.00/MMBtu delivered gas + $2.00 VOM
- Fuel procured real time, as needed, in a transparent, liquid market
- Low Operating Costs
- High Operational Flexibility
- Can bring plant off-line when uneconomic for a short period of time
- Cold start-up measured in hours

**Coal Plant**
- 10,000 HR x $2.00/MMBtu delivered coal + $5.00 VOM dispatches at $25/MWh
- Fuel procured under long-term contracts with limited liquidity and transparency
- High Operating Costs
- Low Operational Flexibility
- Long-term contracts, non-standard specs
- Hedging, illiquid, limited transparency
- Inflexible transportation alternatives
- Store coal inventory on site
- 1,000 MW plant - staff of ~150
- High environmental VO&M
- Substantial byproduct disposal
- Plant runs at minimum load when uneconomic for short periods
- Cold start-up measured in days

Coal supply chain requires innovation (pricing, logistics, technology, etc.) to be competitive with natural gas.
Three Challenges for Coal

2. Inventory and Traffic Management

Can the industry successfully and profitably repeat spring 2016 performance?
Three Challenges for Coal

3. Market Dynamics are Shifting

Renewables, natural gas, and uneconomic nuclear displace coal generation
Three Challenges for Coal

3. Market Dynamics are Shifting

4. Subsidies for Economic Generation

5. Higher Prices for Consumers

1. Uneconomic Generation

2. Subsidies to Uneconomic Generation

subsidy death spiral

Nuclear Subsidies
Illinois - $2 billion
New York – 10 billion

Energy Revenues for IL/IN Plants ($/MWh)
Its Not Over…
Challenges Facing Coal are Likely to Continue

- The coal supply chain evolution must continue
  - match new competitive market realities
  - no longer base load facilities

- Flexibility a must for coal commodity and transportation providers to win business

- Cost matters. When efficiencies are gained they must be passed down to the end user in order to remain competitive.

- Retirement of coal assets will continue:
  - Dispatchable stack favors gas vs. coal
  - Renewable and nuclear generation supported through subsidies pressure coal economics
  - Environmental rules targeting coal

- Regulatory interference undermines effectiveness of economic markets

Coal can remain part of the generation stack for decades to come, but it cannot be business as usual
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