PJM Gas Electric Senior Task Force Meeting

June 20, 2013

Bob Hayes
Vice President, Physical Trading & Operations
Forward-Looking Statements
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Reconciliation to U.S. GAAP Financial Information
The following presentation includes certain “non-GAAP financial measures” as defined in Regulation G under the Securities Exchange Act of 1934, as amended. Schedules are included herein that reconcile the non-GAAP financial measures included in the following presentation to the most directly comparable financial measures calculated and presented in accordance with U.S. GAAP.
Calpine Overview

Strategically positioned within U.S. power industry value chain

Fuel Supply

Transportation

Power Generation

Transmission & Distribution

Retail

Calpine (NYSE: CPN)
- 2,000+ employees
- 28,000+ MW generation capacity
- 92 operating plants
Calpine: National Portfolio of More Than 27,000 MW

- Geographically diversified portfolio: Scale in three most competitive power markets in America
- Largest operator of combined heat and power (cogeneration) technology in America
- Largest geothermal power producer in America
- Featuring one of smallest environmental footprints in America’s power generation sector

As of 05/02/2013
Calpine has a total PJM footprint of ~5.0 GW

PJM Asset Profile:

Current Generating Assets:

<table>
<thead>
<tr>
<th>Technology</th>
<th>Capacity</th>
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<tr>
<td>Efficient, flexible combined-cycle</td>
<td>2,825 MW</td>
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<tr>
<td>Simple-cycle/other</td>
<td>2,165 MW</td>
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<td>Renewable solar</td>
<td>4 MW</td>
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<td>Total</td>
<td>4,994 MW</td>
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Projects Under Advanced Development:

- Garrison Energy Center
  - 309 MW Natural Gas-fired Combined-Cycle
  - Located in Dover, DE
  - Target COD: Phase 1 - 2015; Phase 2 - TBD

York Energy Center

**Location:** Peach Bottom Township, York County, PA

**Capacity:** 565 MW

**Technology:** Natural gas-fired/oil, combined-cycle

**Configuration:** 3x3x1
Calpine’s PJM Gas Supply Observations

• Except under extreme conditions virtually no gas moves to PJM via long haul (Gulf coast to northeast) transportation
  • Pipeline re-contracting will be something to watch over next 5 years
  • Could provide upward pressure on gas pricing as Marcellus production finds other more premium markets

• Availability of firm delivered gas had greatly increased
  • Marketers aggregating supply & managing LDC assets to provide bundled supply structures with balancing

• Producer driven pipeline expansions continue but pace appears to be slowing down
  • Dry gas plays not as attractive
  • Utica oil production not what was expected
  • Upcoming expansions will do more “de-bottlenecking” than bringing on new production
Calpine’s Gas Procurement Philosophy

• Gas procurement is handled on a plant by plant basis - not a regional decision
  • Firm Transportation
  • Interruptible transportation
  • Firm delivered services
  • Locational discounts

• PJM fueling considerations:
  • Plant load factor
  • Delivered gas liquidity
  • Balancing options

• Prefer a mix of annual, seasonal, monthly and daily gas supply arrangements

• Currently prefer to “up-balance” plants as opposed to “down-balance”
The Firm Transportation Solution

What FT is...

• An effective way to ensure gas delivery when nominated “timely” assuming gas supply is available
  
  • After first (“timely”) nomination cycle all nominations on FT are secondary
  • “No-bump” rule in effect to allow pipelines to attract interruptible shippers

• A potentially expensive gas delivery solution unless there is a high load factor or very few suppliers

• A big part of Calpine’s portfolio

What FT isn’t...

• A guaranteed delivery of gas, especially real time

• Not always useful if your plant is behind a local distribution company
## Potential Gas and Power Deadline Changes

### Current Eastern Time Schedule

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<td><strong>Off-Peak</strong></td>
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<td><strong>Off-Pk</strong></td>
<td><strong>Gas Day 0</strong></td>
<td><strong>Gas Day 1</strong></td>
<td><strong>Gas Day 2 Evening</strong></td>
<td><strong>Gas Day 2 Timely</strong></td>
<td><strong>Gas Day 1 ID 1 nominations due Effective HE 18 Two-thirds of gas day left</strong></td>
<td><strong>Gas Day 1 ID 2 nominations due Effective HE 22 Half of gas day</strong></td>
<td><strong>Gas Day 2 Evening nominations due</strong></td>
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### Proposed Eastern Time Schedule

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### Key Gas Changes:
- Gas Day pushed up 4 hours to include the entire on-peak load
- Initial gas timely nomination cycle is pushed back 2 hours, reducing the pipeline's scheduling time from 21.5 hours to 15.5 hours
- Evening nomination deadline is moved up 1 hour, but the pipeline's scheduling time is reduced from 15 hours to 12 hours
- Intraday 1 nomination deadline is moved up 2 hours for changes effective 5 hours later, reducing the pipeline's scheduling time from 7 hours to 5 hours
- Intraday 2 nomination deadline is moved up 4 hours for changes effective 4 hours later, keeping the pipeline's scheduling time at 4 hours

### Key Power Changes:
- Power Day offers due HE 10, 2 hours earlier
- Power Day awards revealed HE 13, 2 hours earlier

### Results:
- Power awards known 1.5 hours prior to timely nomination deadline as opposed to 2.5 hours after
LDC or no LDC

- Plants behind Local Distribution Companies do not enjoy the same gas flexibility as plants directly connected to interstate pipelines
  - LDC’s can force gas deliveries off certain pipelines based on their systems’ operational condition which may not be the most economical for the plant
  - LDC’s can declare a human needs event, which can further restrict a generators’ ability to bring in gas supply to their system and/or balance the plant
- Some LDC’s offer balancing services but its typically both interruptible and expensive
  - Generators can be a significant percentage of LDC’s overall load
- Pipelines offer firm and interruptible balancing options
  - Operational balancing agreements (interruptible)
  - Balance with line pack (interruptible)
  - Connect to storage caverns (firm)