OE ENERGY
MARKET SNAPSHOT
East Version – March 2016 Data

Office of Enforcement
Federal Energy Regulatory Commission
April 2016
Natural Gas and Fuels Markets

East
<table>
<thead>
<tr>
<th>Year</th>
<th>Average Day Ahead Prices ($/MMBtu)</th>
<th>Algonquin Citygates</th>
<th>Transco Zone 6 NY</th>
<th>Transco Zone 6 Non-NY</th>
<th>Columbia Appalachia</th>
<th>Henry Hub</th>
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Notes: Updated Apr-2016

Source: Derived from ICE data
Northeast Natural Gas Market: Day-Ahead Prices

Northeast Day-Ahead Prices

Source: Derived from ICE data

Updated Apr-2016
Northeast Monthly Average Basis Value To Henry Hub

Notes:

Source: Derived from ICE data

Updated Apr-2016
Northeast Natural Gas Market: Yearly Hub Prices

Northeast Day-Ahead Basis

Source: Derived from ICE data

Updated Apr-2016
Daily Northeast Natural Gas Demand All Sectors

Source: Derived from Bentek Energy data

Note: Northeast is defined as Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, Ohio and Kentucky

Updated: Oct 2015
Northeast Natural Gas Consumption for Power Generation

Source: Derived from Bentek Energy data

Note: Northeast is defined as Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, Ohio and Kentucky

Updated: Oct 2015
### Southeast Day-Ahead Prices
Averaged Annually/Seasonally

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<th>Year</th>
<th>Average Day Ahead Prices ($/MMBtu)</th>
<th>FGT Z3</th>
<th>Tetco-M1</th>
<th>Transco St 65</th>
<th>Transco Zone 5</th>
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<td><strong>Summer</strong></td>
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**Notes:**
- Source: Derived from ICE data
- Updated Apr-2016
Southeast Day-Ahead Prices

Source: Derived from ICE data

Updated Apr-2016
Southeast Day-Ahead Basis

- Tetco-M1 Basis
- FGT Z3 Basis
- Transco St 65 Basis
- Transco Zone 5 Basis

Source: Derived from ICE data

Updated: Apr-2016
Southeast Monthly Average Basis Value To Henry Hub

Day-Ahead Prices Averaged Monthly ($/MMBtu)

FGT Z3 Basis
Transco St 65 Basis
Tetco-M1 Basis
Transco Zone 5 Basis

Notes:
Source: Derived from ICE data
Updated Apr-2016
Southeast Natural Gas Market: Daily Demand

Daily Southeast Natural Gas Demand All Sectors

Source: Derived from Bentek Energy data

Note: Southeast is defined as North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, and Tennessee.

Updated: Oct 2015
Southeast Natural Gas Consumption for Power Generation

Source: Derived from Bentek Energy data

Note: Southeast is defined as North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, and Tennessee.

Updated: Oct 2015
Electricity Markets

East
Northeast Electricity Market: PJM Real Time Prices

PJM Real Time Prices—Two Year History

- Last 30 days PJM Western Hub Daily Avg Real Time Price was $30.42.
- Last 30 days PJM Eastern Hub Daily Avg Real Time Price was $28.69.
- Last 30 days PJM Dayton Hub Daily Avg Real Time Price was $28.24.
- Last 30 days PJM Dominion Hub Daily Avg Real Time Price was $30.64.

Source: Genscape via Bloomberg

Updated: Oct 2015
Prior Year

Last 30 days average on peak load was 110 GW.

Last 30 days average off peak load was 97 GW.

Source: Genscape via Bloomberg

Updated: Oct 2015
Current open interest for next month is 3280 contracts.

Yesterday’s forward curve range was $31 to $55.

One week ago the forward curve range was $31 to $55.

One month ago the forward curve range was $32 to $62.

Six months ago the forward curve range was $36 to $68.

Source: NYMEX Clearport via Bloomberg

Updated: Oct 2015
Northeast Electricity Market: PJM On-Peak Spark & Dark Spreads

PJM On-Peak Spark & Dark Spreads – One Year History

Assumptions:
Electricity Price = PJM Western Hub Peak DA
NG Price Point = TETCO M3 spot
NG Heat Rate = 7000 mmBtu/kWh
Coal Type = Central Appalachian
Coal Heat Content = 12000 Btu/lb
Coal Heat Rate = 10000 mmBtu/kWh

Last 30 Days Avg On-Peak Spark Spread was $26.76 per MWh.
Last 30 Days Avg On-Peak Dark Spread was $18.02 per MWh.

Sources (all via Bloomberg): Electricity Price: Genscape; Coal Price: NYMEX

Updated: Oct 2015
NYISO Real Time Prices—Two Year History

- Prior Year
- Last 30 days Long Island Daily Avg Real Time Price was $35.96.
- Last 30 days NYC Daily Avg Real Time Price was $27.09.

Source: Genscape via Bloomberg

Updated: Oct 2015
Last 30 days average on peak load was 21 GW.
Last 30 days average off peak load was 17 GW.

Source: Genscape via Bloomberg

Updated: Oct 2015
NYISO Hudson Valley Zone Peak DA Futures

Current open interest for next month is 900 contracts.

Yesterday’s forward curve range was $32 to $86.

One week ago the forward curve range was $32 to $87.

One month ago the forward curve range was $33 to $90.

Six months ago the forward curve range was $37 to $101.

Source: NYMEX Clearport via Bloomberg

Updated: Oct 2015
NYISO NYC On-Peak Spark & Dark Spreads – One Year History

- Last 30 Days Avg On-Peak Spark Spread was $18.85 per MWh.
- Last 30 Days Avg On-Peak Dark Spread was $16.27 per MWh.

NYISO NYC On-Peak Spark minus Dark Spread

NG more profitable. (Last 30 day avg $1.29 per MWh.) Coal more profitable.

Assumptions:
Electricity Price = NYC Zone J On-Peak DA
NG Price Point = Transco Z6 spot
NG Heat Rate = 7000 mmBtu/kWh
Coal Type = Central Appalachian
Coal Heat Content = 12000 Btu/lb
Coal Heat Rate = 10000 mmBtu/kWh

Sources (all via Bloomberg): Electricity Price: Genscape; Coal Price: NYMEX

Updated: Oct 2015
NYISO Capital Zone On-Peak Spark & Dark Spreads – One Year History

Last 30 Days Avg On-Peak Spark Spread was $10.82 per MWh.
Last 30 Days Avg On-Peak Dark Spread was $11.28 per MWh.

NYISO Capital Zone On-Peak Spark minus Dark Spread

NG more profitable. Coal more profitable. (Last 30 day avg $0.23 per MWh.)

Assumptions:
Electricity Price = Capital Zone F On-Peak RT
NG Price Point = Iroquois Zone 2
NG Heat Rate = 7000 mmBtu/kWh
Coal Type = Central Appalachian
Coal Heat Content = 12000 Btu/lb
Coal Heat Rate = 10000 mmBtu/kWh

Sources (all via Bloomberg): Electricity Price: Genscape; Coal Price: NYMEX

Updated: Oct 2015
Northeast Electricity Market: ISO-NE Real Time Prices

ISO-NE Real Time Prices—Two Year History

- Last 30 days NE Mass/Boston Daily Avg Real Time Price was $31.63.
- Last 30 days Connecticut Zone Daily Avg Real Time Price was $31.05.
- Last 30 days Internal Hub Daily Avg Real Time Price was $31.17.
- Last 30 days Maine Zone Avg Real Time Price was $30.75.

Source: Genscape via Bloomberg

Updated: Oct 2015
ISO-NE System Daily Average Load — Two Year History

- Prior Year
- Last 30 days average on peak load was 17 GW.
- Last 30 days average off peak load was 11 GW.

Source: Genscape via Bloomberg

Updated: Oct 2015
Current open interest for next month is 2340 contracts.

Yesterday’s forward curve range was $32 to $94.

One week ago the forward curve range was $31 to $94.

One month ago the forward curve range was $31 to $95.

Six months ago the forward curve range was $36 to $120.

Source: NYMEX Clearport via Bloomberg

Updated: Oct 2015
ISO-NE On-Peak Spark & Dark Spreads – One Year History

ISO-NE On-Peak Spark minus Dark Spreads

Assumptions:
- Electricity Price = Internal Hub On-Peak DA
- NG Price Point = Algonquin Boston City Gate Spot
- NG Heat Rate = 7000 mmBtu/kWh
- Coal Type = Central Appalachian
- Coal Heat Content = 12000 Btu/lb
- Coal Heat Rate = 10000 mmBtu/kWh

Sources (all via Bloomberg): Electricity Price: Genscape; Coal Price: NYMEX

Updated: Oct 2015
New England Generation Mix

- Gas Generation in Jul '15 was 5345 GWh (52%).
- Nuclear Generation in Jul '15 was 3344 GWh (32%).
- Coal Generation in Jul '15 was 173 GWh (2%).
- Hydro Generation in Jul '15 was 609 GWh (6%).
- Othr Renew Generation in Jul '15 was 819 GWh (8%).
- Oil Generation in Jul '15 was 40 GWh (0%).
- Total Generation in Jul '15 was 10330 GWh.

States: CT, ME, MA, NH, RI, VT

Source: EIA via Bloomberg

Updated: Oct 2015
Mid Atlantic Generation Mix

States: NJ, NY, PA

- Gas Generation in Jul '15 was 13904 GWh (37%).
- Coal Generation in Jul '15 was 6528 GWh (17%).
- Nuclear Generation in Jul '15 was 13834 GWh (37%).
- Hydro Generation in Jul '15 was 2338 GWh (6%).
- Othr Renew Generation in Jul '15 was 956 GWh (3%).
- Oil Generation in Jul '15 was 59 GWh (0%).
- Total Generation in Jul '15 was 37619 GWh.

Source: EIA via Bloomberg

Updated: Oct 2015
Gas Generation in Jul '15 was 13904 GWh (37%).
Coal Generation in Jul '15 was 6528 GWh (17%).
Nuclear Generation in Jul '15 was 13834 GWh (37%).
Hydro Generation in Jul '15 was 2338 GWh (6%).
Othr Renew Generation in Jul '15 was 956 GWh (3%).
Oil Generation in Jul '15 was 59 GWh (0%).
Total Generation in Jul '15 was 37619 GWh.

Source: EIA via Bloomberg