Eastern Region States
ELECTRIC INFRASTRUCTURE
NERC Sub-Regions

- NY
- Central
- VACAR
- SE
- FRCC
- NE
Installed Capacity and Generation

Current Installed Capacity: 550,571 MW

- Natural Gas: 40%
- Coal: 30%
- Nuclear: 14%
- Oil: 6%
- Other: 2%
- VERs: 2%

2012 Generation: 1,968,705 GWh

- Natural Gas: 31%
- Coal: 35%
- Nuclear: 28%
- Water: 3%
- Other: 2%
- VERs: 1%

Source: Data derived from Ventyx, Velocity Suite, February 2015.
Installed Capacity by Sub-Regions

- **NE 37,026 MW**
  - Natural Gas: 46%
  - Coal: 6%
  - Water: 10%
  - Nuclear: 12%
  - Oil: 18%
  - VERs: 3%
  - Other: 5%

- **NY 44,405 MW**
  - Natural Gas: 51%
  - Coal: 4%
  - Water: 14%
  - Nuclear: 14%
  - Oil: 12%
  - VERs: 4%
  - Other: 1%

- **PJM 185,549 MW**
  - Natural Gas: 30%
  - Coal: 39%
  - Water: 3%
  - Nuclear: 18%
  - Oil: 5%
  - VERs: 4%
  - Other: 1%

- **Central 58,332 MW**
  - Natural Gas: 29%
  - Coal: 45%
  - Water: 12%
  - Nuclear: 13%
  - Oil: 4%
  - VERs: 1%
  - Other: 1%

- **VACAR 287,674 GWh**
  - Natural Gas: 36%
  - Coal: 27%
  - Water: 9%
  - Nuclear: 20%
  - Oil: 4%
  - VERs: 1%
  - Other: 3%

- **SE 77,163 MW**
  - Natural Gas: 45%
  - Coal: 35%
  - Water: 8%
  - Nuclear: 8%
  - Oil: 2%
  - VERs: 2%
  - Other: 2%

- **FRCC 65,696 MW**
  - Natural Gas: 64%
  - Coal: 16%
  - Oil: 12%
  - Nuclear: 6%
  - Other: 2%
  - VERs: 1%
  - Other: 3%

Source: Data derived from Ventyx, Velocity Suite, February 2015.
Electricity Generation by Sub-Regions

Source: Data derived from Ventyx, Velocity Suite, February 2015.
Projected 30,160 MW Capacity Additions by 2025

- Another 85,854 MW are in early development stage.

Power plants in advanced development and under construction

Source: Data derived from Ventyx, Velocity Suite, February 2015.
Peak Demand

Source: The North American Electric Reliability Corporation’s 2014 Electric Supply and Demand Database.
Net inter-regional deliverability 2012 (in GWh)

Source: Data derived from Ventyx, Velocity Suite, February 2015.

Imports 135,611 GWh
Exports 120,437 GWh
Net Imports 15,174 GWh
Existing Transmission

<table>
<thead>
<tr>
<th>Voltage (kV)</th>
<th>Line Length (Miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>32,772</td>
</tr>
<tr>
<td>345</td>
<td>16,376</td>
</tr>
<tr>
<td>500</td>
<td>11,046</td>
</tr>
<tr>
<td>765</td>
<td>2,361</td>
</tr>
<tr>
<td>DC</td>
<td>348</td>
</tr>
<tr>
<td>Total</td>
<td>62,903</td>
</tr>
</tbody>
</table>

Source: Data Derived from 2014 NERC Electric Supply and Demand Database; Ventyx, Velocity Suite, February 2015 and Staff Database.
### Projected Transmission through 2030

<table>
<thead>
<tr>
<th>Voltage (kV)</th>
<th>Line Length (Miles)</th>
<th>Investment Cost (Millions $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>1,871</td>
<td>3,412</td>
</tr>
<tr>
<td>345</td>
<td>1,931</td>
<td>8,712</td>
</tr>
<tr>
<td>500</td>
<td>1,458</td>
<td>8,129</td>
</tr>
<tr>
<td>765</td>
<td>1</td>
<td>65</td>
</tr>
<tr>
<td>DC</td>
<td>2,534</td>
<td>16,800</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>7,795</strong></td>
<td><strong>37,118</strong></td>
</tr>
</tbody>
</table>

Sources: Data Derived from 2014 NERC Electric Supply and Demand Database; Ventyx, Velocity Suite, February 2015 and Staff Database.
Electricity Prices 2014 ($/MWh)

All prices are average on-peak day-ahead market prices.

Source: Derived from Platts and ISO data.
Electricity Futures ($/MWh)

Source: Data derived from NYMEX
GAS INFRASTRUCTURE
Natural Gas Infrastructure

Source: Data derived from Ventyx, Velocity Suite, February 2015; ICF International January 2015 Data Base; and Fossil Energy 3rd Quarter Report 2014
Eastern Natural Gas Consumption

Actual vs. Projected

Source: ICF International January 2015 Database and Compass Report
Eastern Natural Gas Production by Type

Source: ICF International January 2015 Data Base and Compass Report

Actual
Projected

Tcf
0.0 2.0 4.0 6.0 8.0 10.0 12.0 14.0 16.0

Conventional  Shale  Coalbed Methane  Tight Sands  Offshore

Source: ICF International January 2015 Data Base and Compass Report
U.S Natural Gas Production by Type

Actual

Projected

Source: ICF International January 2015 Data Base and Compass Report

Conventional  Shale  Coalbed Methane  Tight Sands  Offshore

Source: ICF International January 2015 Data Base and Compass Report
Actual and Projected Net Canadian & U.S. Imports/Exports

Source: ICF International January 2015 Database and Compass Report; and EIA Natural Gas Annuals and Spreadsheets
Net Interregional Deliverability 2013 (in Bcf/d)

Import Capacity 47.5 Bcf/d
Export Capacity 7.8 Bcf/d

Source: ICF International January 2015 Data Base and Compass Report, and EIA Import/Export Spreadsheet.
Net Interregional Deliverability 2020 (in Bcf/d)

Import Capacity: 49.8 Bcf/d
Export Capacity: 20.8 Bcf/d

Net Interregional Deliverability 2030 (in Bcf/d)

Import Capacity 50.5 Bcf/d
Export Capacity 20.8 Bcf/d

## Gas Facts (In Tcf)

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2020</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>United States</td>
<td>East</td>
<td>United States</td>
</tr>
<tr>
<td>Total Gas Consumption</td>
<td>26.4</td>
<td>9.9</td>
<td>27.6</td>
</tr>
<tr>
<td>Total Gas Production</td>
<td>24.3</td>
<td>5.4</td>
<td>30.4</td>
</tr>
<tr>
<td>Total Working Storage Capacity</td>
<td>4.4</td>
<td>1.4</td>
<td>4.7</td>
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<tr>
<td>Total LNG Imports</td>
<td>0.1</td>
<td>0.085</td>
<td>0.19</td>
</tr>
<tr>
<td>Total LNG Exports</td>
<td>0.0</td>
<td>0.0</td>
<td>2.38</td>
</tr>
<tr>
<td>Total Net Imports &amp; Exports from Canada</td>
<td>1.9</td>
<td>0.2</td>
<td>1.4</td>
</tr>
<tr>
<td>Total Net Exports to Mexico</td>
<td>0.7</td>
<td>0.0</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Source: ICF International Q4 2013 and Q1 2015 Data Bases and Compass Reports, and EIA Spreadsheets for 2013 data on LNG imports, and Canadian & Mexican import/exports
Natural Gas Prices 2014 ($/MMBtu)

Source: Derived from ICE data

- Algonquin: $7.95
- TZ6 NY: $6.22
- TZ6 – Non NY: $6.39
- TZ5: $6.32
- FGT Z3: $4.34
- Columbia TCO: $4.30