Natural Gas
Securing Florida’s Energy Needs Today And In The Future

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Advances in drilling technologies have completely revolutionized the outlook for natural gas in the United States.

The new supplies of natural gas that we have been able to obtain in the last few years mean that we are now able to meet the growing demand for natural gas through the next several generations.

Shale basins that supply Florida
- Barnett
- Haynesville
- Fayetteville
- Marcellus
- Eagle Ford
US Natural Gas Supply by Fuel Type
Lower 48 States

By 2016 Shale gas will account for nearly 50% of total production.

Shale production is projected to climb to two-thirds of total production by 2030.

Source EIA 2014 Annual Energy Outlook
Historical Natural Gas Pricing

- US Shale production has provided stability to the Henry Hub forward curve.

- Source NYMEX HH Futures
US Energy Consumption by Fuel Type

- The US annual energy consumption is nearly 100,000 BCF
- The US ranks 2nd in the world regarding total energy consumption with China being the largest energy consumer with a forecasted consumption of 125,000 BCF in 2014
- Approximately 27% of the US fuel consumption is natural gas

Source EIA 2014 Annual Energy Outlook
Natural Gas Consumption used for Power Generation is approximately 35% of the US Total Natural Gas Fuel Consumption.

Natural Gas Power Generation Consumes approximately 8.5% of the entire US Energy Consumption.

Source: EIA 2014 Annual Energy Outlook

US Natural Gas Consumption by Sector
The State of Florida ranks second only to Texas regarding NG consumption for power generation. Florida consumes approximately 13% of all US Natural Gas consumed for Power Generation or 4% of all the Natural Gas Consumed in the US.

Source EIA 2014 Annual Energy Outlook
Florida has been one of the fastest growing gas markets in the U.S., consumption has more than doubled since 2000. Between 2010 and 2013 demand has averaged over 3.2 Bcf per day.
Growth has been driven primarily by increased use within the electric generation segment which represent more than 88% of total gas use.

- Source EIA 2014 Annual Energy Outlook
Natural gas Combine Cycle and Simple Cycle power plants account for approximately half of the installed capacity in Florida.

Energy from these assets accounts for 60% of the State’s total energy needs.

FRCC – 2013 Load and Resource Plan
Natural Gas Market Hubs

- Florida Gas Transmission
- Gulfstream
- Sabal Trail Transmission
- Florida Southeast Connection
- Transco
- SNG

Market Hubs
1. Huston Ship Channel
2. Carthage
3. Perryville
4. Henry Hub
5. Transco 85
6. Florida Z3
7. Florida – Citygate
## Florida Pipeline Capacity

### Table: Florida Pipelines

<table>
<thead>
<tr>
<th>Pipeline</th>
<th>Area</th>
<th>2001</th>
<th>2014</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>FGT</td>
<td>Total State</td>
<td>1.65</td>
<td>3.10</td>
<td>3.10</td>
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<tr>
<td>Gulfstream</td>
<td>Central and SE</td>
<td>0.00</td>
<td>1.30</td>
<td>1.30</td>
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<tr>
<td>Gulf South</td>
<td>Pensacola</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
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<tr>
<td>SNG/Cypress</td>
<td>Northeast</td>
<td>0.05</td>
<td>0.37</td>
<td>0.37</td>
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<tr>
<td>Sabal Trail/SE Connector ¹</td>
<td>Central and SE</td>
<td>0.00</td>
<td>0.00</td>
<td>1.00</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1.90</strong></td>
<td><strong>4.97</strong></td>
<td><strong>5.97</strong></td>
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</tbody>
</table>

¹ Referenced as Sabal Trail SE Connector.
Florida’s interstate pipelines have consistently increased capacity to meet market demand.
Demand Growth

- Power Generation
- Industrial
- Transportation
  - Compressed natural gas for fleets
  - LNG for long haul trucking
  - Bulk Transportation Marine fuel and rail

- Room for growth for all segments but must be distributed to load centers.
- Electric peaking demand and fuel switching no longer constrained by pipeline capacity after 2017.
- Significant efficiency gains from new generation additions temper demand growth in the near term.
- Growth from emerging transportation markets will be significant compared to historical growth from R,C & I markets.
FL Natural Gas Power Plant Additions

- Natural gas consumption for power generators is expected to add in excess of 1 BCF per day of demand to the state over the next 10 years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>Plant Location</th>
<th>Summer MW</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1</td>
<td>2013 FPL</td>
<td>Cape Canaveral</td>
<td>1,210</td>
<td>New Combined-Cycle “In Service”</td>
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<td>2</td>
<td>2014 FPL</td>
<td>Riviera</td>
<td>1,212</td>
<td>New Combined-Cycle</td>
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<td>3</td>
<td>2016 FPL</td>
<td>Port Everglades</td>
<td>1,277</td>
<td>New Combined-Cycle</td>
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<td>4</td>
<td>2017 TECO</td>
<td>Polk</td>
<td>459</td>
<td>New Combined-Cycle (converting 4 CT’s to CC)</td>
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<td>5</td>
<td>2018 Progress</td>
<td>Undetermined</td>
<td>1,189</td>
<td>New Combined-Cycle</td>
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<td>6</td>
<td>2019 Seminole</td>
<td>Gilchrist</td>
<td>198</td>
<td>New Combustion Turbine</td>
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<tr>
<td>7</td>
<td>2020 Progress</td>
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<td>1,189</td>
<td>New Combined-Cycle</td>
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<td>8</td>
<td>2020 Seminole</td>
<td>Gilchrist</td>
<td>396</td>
<td>New Combustion Turbines (2)</td>
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<td>9</td>
<td>2020 Seminole</td>
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<td>New Combined-Cycle</td>
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<tr>
<td>10</td>
<td>2020 TECO</td>
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<td>New Combustion Turbine</td>
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<td>2020 Tallahassee</td>
<td>Hopkins</td>
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<td>New Combustion Turbine</td>
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<td>2021 Seminole</td>
<td>Gilchrist</td>
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<td>New Combustion Turbines (4)</td>
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<td>2022 Progress</td>
<td>Undetermined</td>
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<td>New Combustion Turbine</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>8,729</strong></td>
<td><strong>6,920 MW CC, 2,011 MW CT’s</strong></td>
</tr>
</tbody>
</table>

- FRCC 2013 Load and Resource Plan
Recent and Proposed LNG and Industrial Projects

- Natural gas consumption for LNG and Industrial projects is expected to add in excess of 0.2 BCF per day of demand to the state over the next 5 years.

- LNG
- Industrial
  - Pulp/Paper
  - Phosphate
  - Aggregates
  - Gypsum
  - Asphalt
- Major Commercial
Summary

- Shale development has fundamentally transformed the outlook for natural gas resulting in lower commodity costs and creating new opportunities for supply diversity.
- Increases in consumption and future need will be driven primarily by gas fired generation additions, industrial conversions, and emerging transportation fuel markets.
- Emerging transportation markets will bring to Florida new load and new market participants. Access to natural gas at Florida’s ports will be key to future growth.
- Florida’s Gas Industry has a long history of expansion to meet demand growth.
- Florida is well positioned to take advantage of natural gas abundance however continued investment in natural gas infrastructure will be important to support peak demand, growth and reliability.