The Fuels Story at Santee Cooper

The Coal Institute – July 2018
The Fuel Story at Santee Cooper

• Santee Cooper Overview

• Fuels Overview

• Fuel Supply
  • Coal
  • Natural Gas

• Going Forward
• First started generating power in February 1942.

• Mission- To be the state’s leading resource for improving the quality of life for the people of South Carolina.

• Public Power Provider and primary source of electricity for approximately 2 million South Carolinians. In addition we provide wholesale water through our Santee Cooper and Lake Marion Regional Water System.
Who are our Customers?

- Residential: 8%
- Commercial: 9%
- Municipal: 1%
- Industrial: 16%
- Wholesale (Central Electric Cooperative): 66%

(1) Percentages based on energy for 2016
(2) Cities of Georgetown and Bamberg
Santee Cooper – Generation Sites

* Represents non-Santee Cooper owned assets
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Coal as part of 2018 Generation

Total Generation Fuel & Purchased Energy Cost: $700M

Santee- Budget Forecast 2018

June- Budget 2018 Update
Total MWh by Fuel Type

Annual Total MWh by Fuel Type

- Purchased
- Gas
- Coal
- Oil
- Hydro including SEPA
- Renewables & Landfill Gas
- Nuclear

Actuals 2002 - March 2018
Forecast (2017 Oct. Upd.)
Burn Cost $/MMBtu

Based on 2016 July Update
System Overview
Fuel Switching Decisions…not just price driven.

Natural Gas
- Pipeline Capacity
- Starts/Min/Max
- Limited Generation
- Seasonality
- Unit Heat Rates
- Environmental Testing

Purchased Power
- Seasonality
- Transmission Constraints
- Interface Limitations

Coal
- Minimum Up / Down time
- Longer Start Times
- Unit Turndowns
- Capacity Reserve Requirements
- Gypsum Sales
- Refined Coal
- Minimum Rail Quantities
- Stockpile Management
- Environmental Testing
- Permit Limits
- Fuel Handling
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### Cross Generating Station

<table>
<thead>
<tr>
<th>3 Coal Fired Steam Units</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 1</td>
<td>580 MWs</td>
</tr>
<tr>
<td>Unit 3</td>
<td>600 MWs</td>
</tr>
<tr>
<td>Unit 4</td>
<td>600 MWs</td>
</tr>
<tr>
<td>Unit 2- Idled 3/2017</td>
<td>570 MWs</td>
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</table>
### 4 Coal Fired Steam Units

<table>
<thead>
<tr>
<th>Unit</th>
<th>MWs</th>
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<tbody>
<tr>
<td>Unit 1</td>
<td>275</td>
</tr>
<tr>
<td>Unit 2</td>
<td>285</td>
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<tr>
<td>Unit 3</td>
<td>285</td>
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<tr>
<td>Unit 4</td>
<td>285</td>
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</tbody>
</table>
Burn History and Projections

Burn 2012 - 2022
Actual and Forecast

Tons of Coal


Winayh  Cross
Coal Stockpile History

System Coal Pile
Actual 2009 - June 2018 Projected May 2018 - 2020

- Decrease in NG Prices
- 2014 Winter Weather
- Mild winter/low Loads (12-2015)
- Decrease in NG Prices
- Long Term HS contract ends
- Cold January
- All stockpiles at Target Levels

Based on 2017 October Update
2018 Coal Burn Tons

Cross Coal Burn- 2018

Tons of Coal

January  February  March  April  May  June  July  August  September  October  November  December

2018

Difference  Forecast  Actual
Central Appalachia:
- Burned at Cross & Winyah
- Average BTU: 12,500
- Average Sulfur: 1.5%
- One contracts through 2018

Illinois Basin:
- Burned at Cross
- Average BTU: 11,800
- Average Sulfur: 2.6%
- One contract through 2019

Northern Appalachia:
- Burned at Cross
- Average BTU: 12,900
- Average Sulfur: 2.2%
- No contracts at this time
Projected Coal Burn

Based on 2018 April Dispatch
Coal Combustion Products

• Agriculture -
  • Farmers use to fertilize peanuts

• Construction Industry
  • Cement Additive - Grind with Cement
  • Clinker to make Cement

• Wallboard Production (Drywall)
  • Requires extremely large quantities of gypsum to support capital investment
  • Santee Cooper gypsum is currently used for drywall
Coal Combustion Products

• Fly Ash Uses:

Pipe

ROADS

Fiberboard

Commercial and Residential

Bagged Concrete Products

Blocks
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Rainey Generating Station

7 Natural Gas Fired Units and 1 Steam Unit (~977MW)

CT 1A and 1B and Steam Unit 460 MWs
(Combined Cycle)
CT 2A 146 MWs
CT 2B 146 MWs
CT 3 75 MWs
CT 4 75 MWs
CT 5 75 MWs
Natural Gas Price Volatility

As of 7/6/2018

<table>
<thead>
<tr>
<th>Contract Year</th>
<th>Price</th>
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<tr>
<td>Bal 18</td>
<td>$2.872</td>
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<tr>
<td>Cal 19</td>
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Updated July 2018

Privileged & Confidential Material
NG Pricing and Coal Breakeven

Note: Current NYMEX forward NG pricing
Transporting Natural Gas – Pipelines in Southeast
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Going Forward...
Questions / Discussion