Gas and Power Market
Price Forecasting

Robin Preston
January 30, 2018
Natural Gas Price Forecasting Methodology

- Xcel creates forecasts semi-annually in Feb/Aug
- Henry Hub forecast “4-Source Blend” is an average of three consultants’ long term forecasts and the current NYMEX strip
- Currently consultants forecasts are...
  - IHS-CERA
  - PIRA
  - Wood Mackenzie
Recent Henry Hub 4-Source Blend Forecast (August 15th, 2017)
Natural Gas Delivered Price

- **Basis differential** is the difference in the gas price at a given Hub compared to a benchmark location (i.e. Henry Hub)
  - Current data sources for basis: IHS-CERA, PIRA & Wood Mackenzie

- **Methodology:**
  - Determine appropriate hub
    - Existing units: Use the hub from where gas is traditionally procured
    - New units: Determine most likely general location of unit and associated hub
  - Add appropriate transportation, storage and fuel surcharges to achieve a delivered price.
Electricity Market Prices

- Calculate the average of IHS-CERA, PIRA, and Wood Mackenzie implied heat rate forecasts to derive the “heat rate” (per MWh) for a given location.

- Multiply the “heat rate” by the “4-Source Blend” natural gas price to get the $/MWh price for a given location.
Recent SPP Electricity Forecast – Off Peak
(Aug. 15th, 2017)
Emerging Environment Impacts for SPS NMIRP

Dean Metcalf
Manager, Environmental Services and Media Compliance
January 30, 2018
Major Regulations Affecting SPS

Cross-State Air Pollution Rule (CSAPR)

- EPA adopted in 2011 (Xcel made comments and sued EPA)
- Two Main Issues – Texas’ Inclusion and EPA Disapproval of Texas State Plan
- DC Circuit Court Stayed CSAPR - December 30, 2011
- Litigation went from DC Circuit Court to Supreme Court and back
- CSAPR largely upheld, but Texas emission budgets were found to over-control and were remanded to EPA
- CSAPR program took effect January 1, 2015
- EPA made summer NOx budget tighter, and removed Texas from CSAPR limits for annual NOx and SO2 in 2016-17
- Changes in SPS since 2011 (Added Wind and Transmission)
- Compliance Strategy – Dispatch and Allowance Purchase
Major Regulations Affecting SPS (Cont.)

EGU MACT – MATS Rule Regulates

- Mercury (Hg)
- Particulate Matter (PM) – surrogate for toxic non-mercury metals
- HCl – surrogate for all toxic acid gases
- Compliance Strategy - ACI and PM Averaging Plan for H1, H2, H3.
- 2015 Compliance (Tolk and Harrington)
Major Regulations Affecting SPS (Cont.)

Regional Haze

- BART – Harrington 1 and 2 Eligible
- Reasonable Progress – Can apply to all units
- 2009 Texas submitted RH SIP
- 2014 EPA proposed RH FIP:
  - CSAPR meets BART for Texas
  - Reasonable Progress: proposed scrubbers for Tolk Units
- 2016 EPA adopted final rule:
  - Did not finalize BART due to CSAPR remand
  - Required scrubbers for Tolk Units
Major Regulations Affecting SPS (Cont.)

• SPS appealed rule impacting Tolk to 5th Circuit Court
• In 2016, 5th Circuit Court stayed rule
• In 2017, EPA requested a remand
• Remand granted by 5th Circuit Court, which left stay in effect and is holding litigation until EPA completes reconsideration
• EPA plans to address this now that it has completed its BART rule as described below
Major Regulations Affecting SPS (Cont.)

– January 2017 - EPA proposed Texas BART rule that included dry scrubbing for Harrington 1 and 2
– Xcel submits comments in May 2017
– September 2017 EPA adopted a rule for a Texas only trading program based on CSAPR SO2 budgets. Limits apply to all SPS coal units as a BART Alternative
– EPA also adopts rule removing Texas from CSAPR
– Environmental advocates have appealed both rules
Major Regulations Affecting SPS (Cont.)

- Litigation continues
- SPS has intervened in support of EPA’s rules
- Next regional haze plan for all states is due in 2021
Major Regulations Affecting SPS (Cont.)

National Ambient Air Quality Standards
- NAAQS for SO2, Ozone, PM, NO2
- Areas near SPS plants have been designated attainment for ozone, PM and NO2
- SO2 designations complete:
  - Area near Tolk Station meets standard
  - Area near Harrington Station being monitored and area will be designated in 2020
- If designated nonattainment, Texas plan would be due in 2022
- Potential for increased controls at Harrington
- Attainment would be required by 2025
Major Regulations Affecting SPS (Cont.)

Coal Combustion Residuals (CCR) Rules
- Regulation of coal ash as nonhazardous
- Increased landfill construction & monitoring requirements once our ash becomes non-saleable
- Potential to affect ash sales – 100% beneficial use
Major Regulations Affecting SPS (Cont.)

Clean Power Plan – GHG 111(d)
- 2015 final rules for GHG regulation from existing sources
- Stayed by Supreme Court in 2016
- EPA has proposed to repeal the CPP
- Comments due in April 2018
- Unknown whether EPA would adopt a replacement rule, or what form that might take
Major Regulations Affecting SPS (Cont.)

Threatened and Endangered Species
- Sand Dune Lizard
- Lesser Prairie Chicken

Avian Protection
- APP
Major Rules Not Affecting SPS (at this time)

- CCR – Coal Combustion Residual rule or Ash Rule
- 316(b) – Water Intake Structure Rule
- WOTUS – Waters of the United States
Recent Issues Affecting SPS

• Gaines Co Plant Permitting
• Wind, Wind, Wind
• City of Amarillo and N/H Wastewater Permit
Questions and Discussion
IRP Information

- Web Page:

  Note: After navigating to the webpage, in the upper left-hand corner of the page, make sure that “New Mexico” is selected. Click on Public Advisory Meeting then click on the link for the second meeting.

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Topics For Future Meetings

- Aging Generation Fleet
- Coal Supply
- Demand-side Management and Energy Efficiency
- Storage
Next Meeting

• Date:
  ➢ Tuesday, March 27, 2018

• Time:
  ➢ 10:00am to 12:00pm (Mountain Time)

• Location:
  ➢ Webinar meeting