Utility Segment Update

OCTOBER 19, 2017, STB RETAC MEETING

Overview

- Three year comparison (2015 – 2017) of Utility Industry Survey Results
- Summary of Observations from Survey
- National coal inventory data

Utility Industry Survey

Special Thanks to:

National Coal Transportation Association

For conducting the Utility Segment survey and compiling the data

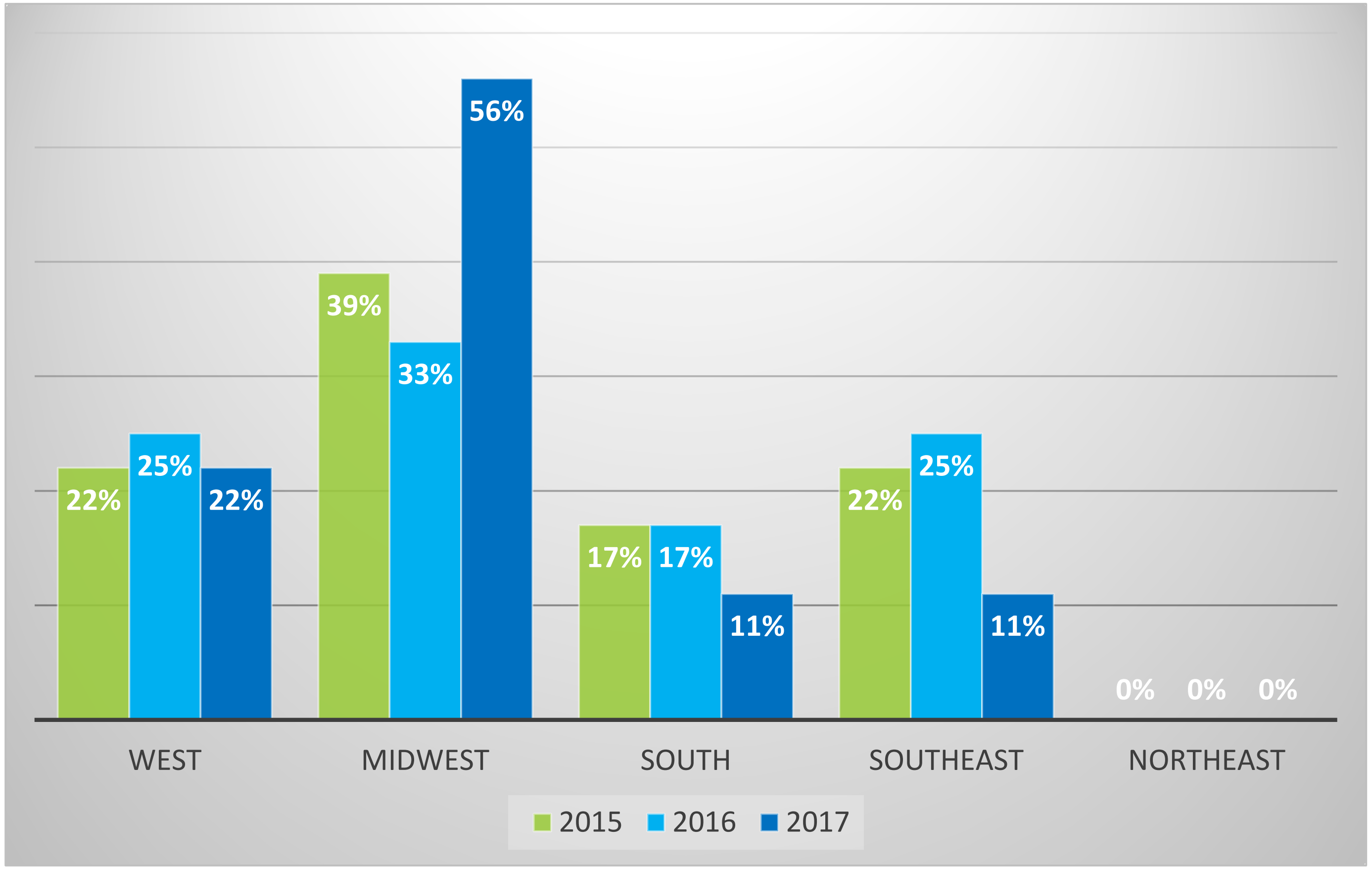
Energy Ventures Analysis, Inc.

For permission to use data from August report

Survey Participants

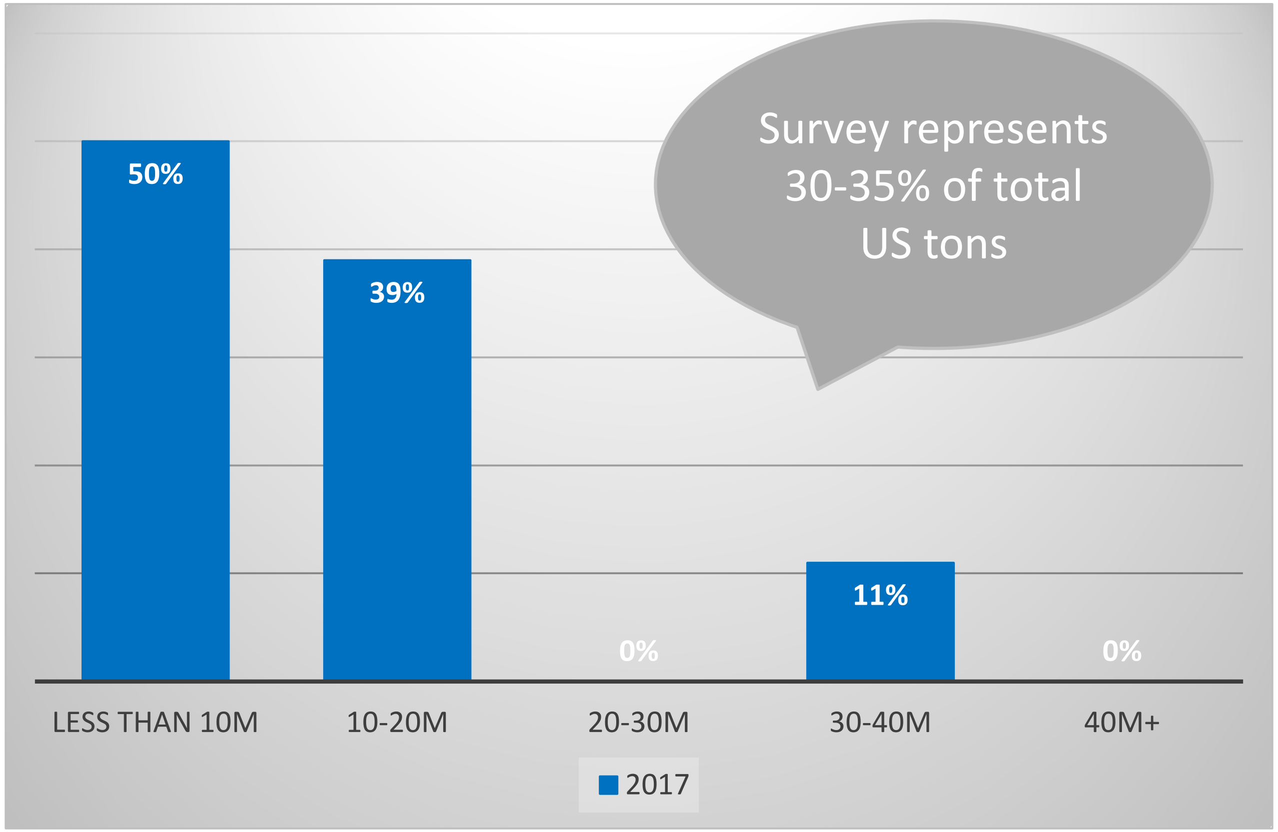
Region the Majority of Your Coal-fired Generation Located

1. West
2. Midwest
3. South
4. Southeast
5. Northeast



How Many Tons/Year Does Your Utility Burn?

1. Less than 10M
2. 10-20M
3. 20-30M
4. 30-40M
5. 40M+

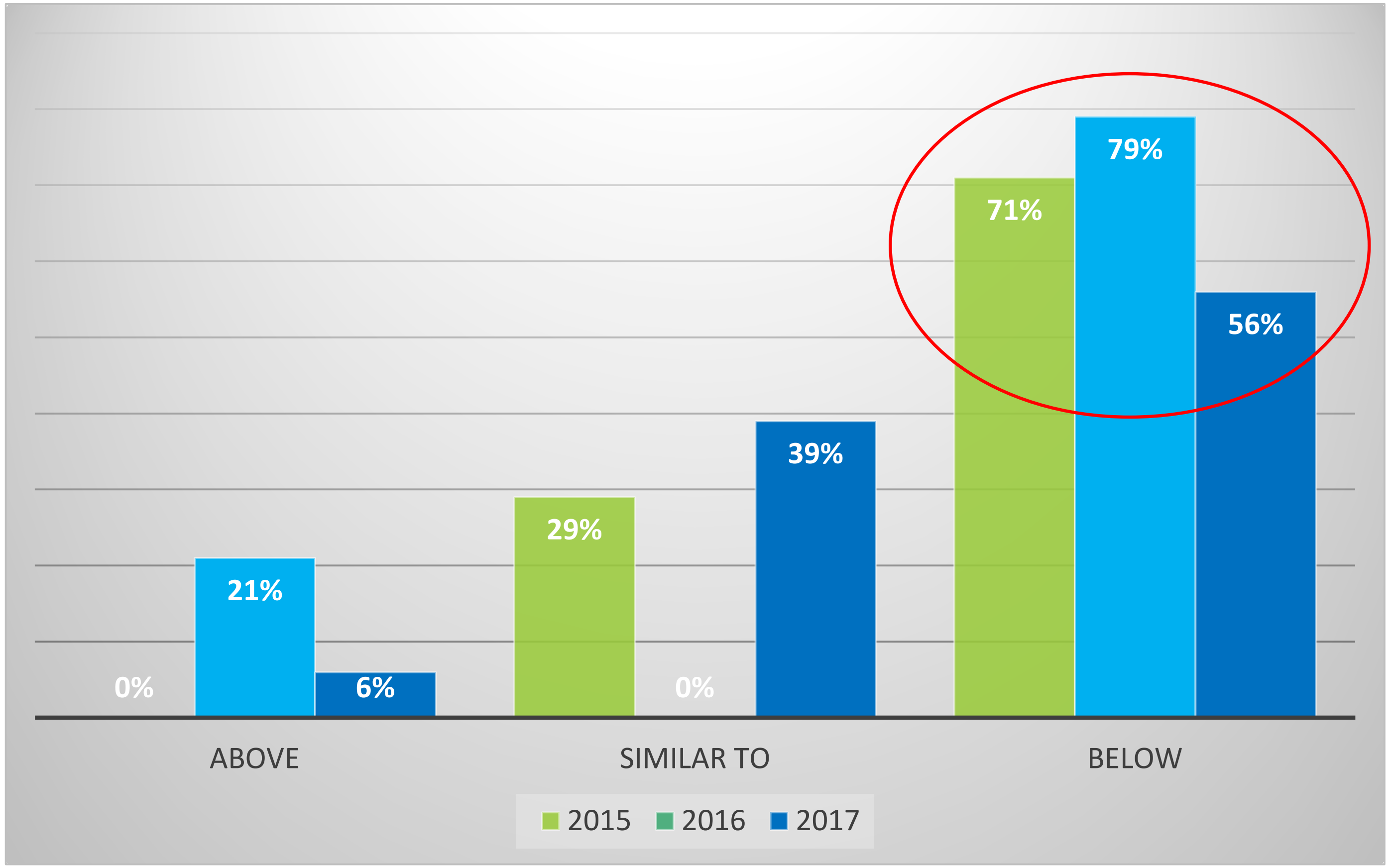


Year-to-Date Results

3 YEAR COMPARISON

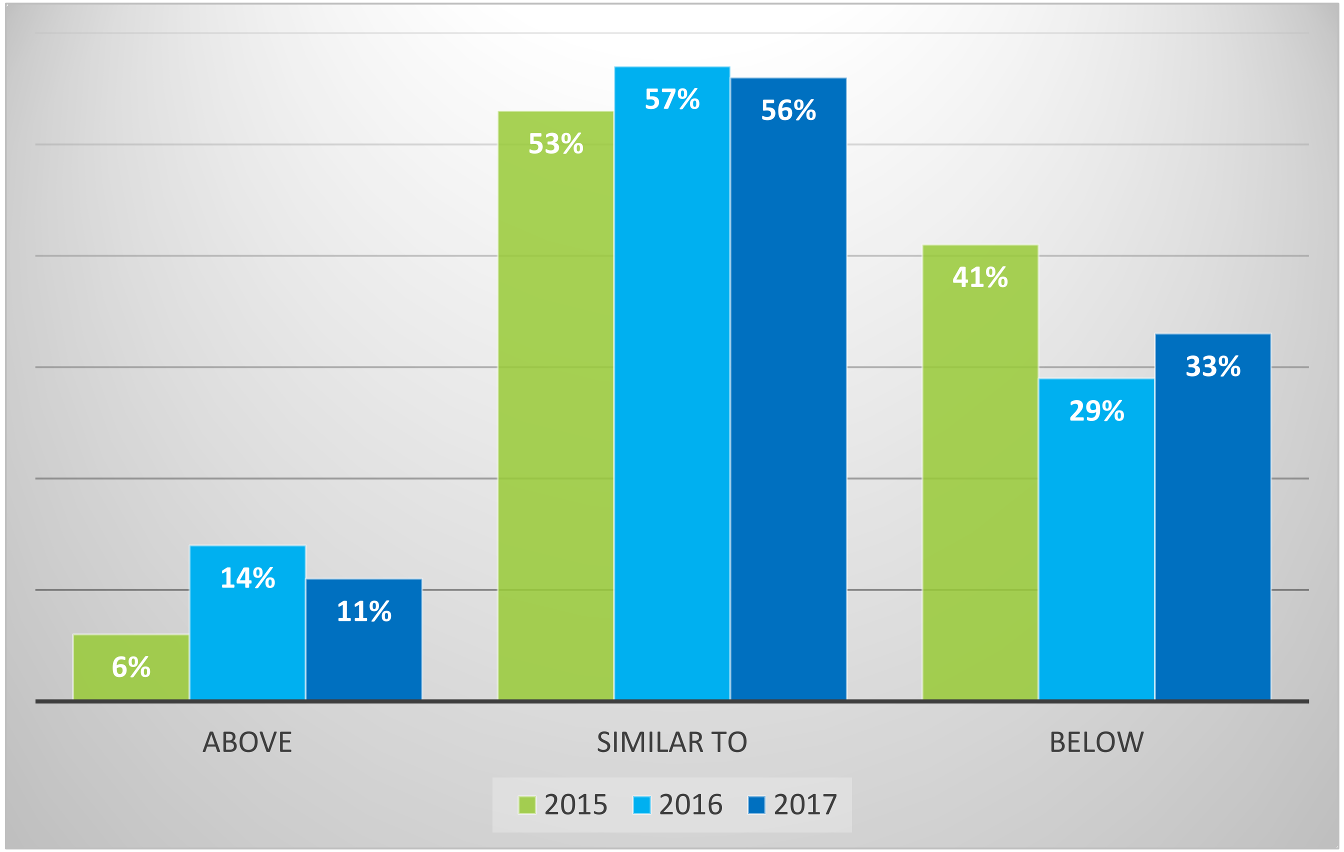
YTD Actual Coal-fired Generation is…

1. Above Forecast
2. Similar to Forecast
3. Below Forecast



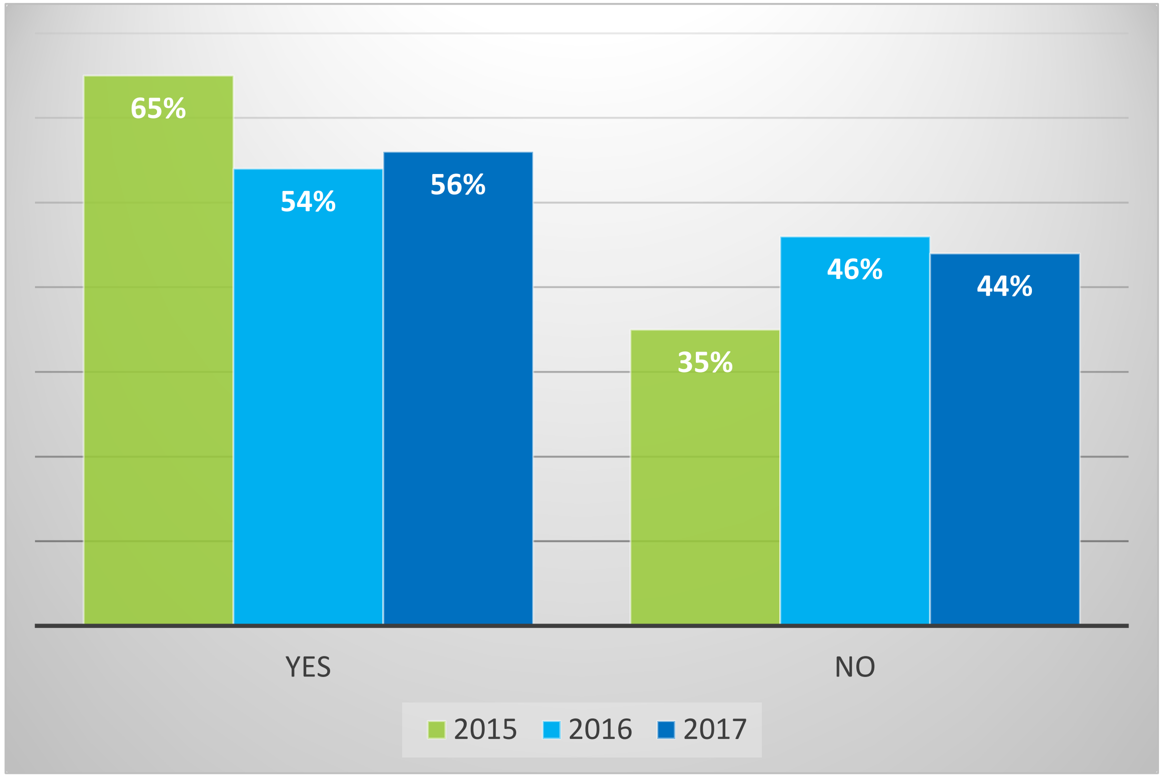
YTD Actual Rail Deliveries are…

1. Above forecast
2. Similar to forecast
3. Below forecast



Are You Currently Storing Railsets?

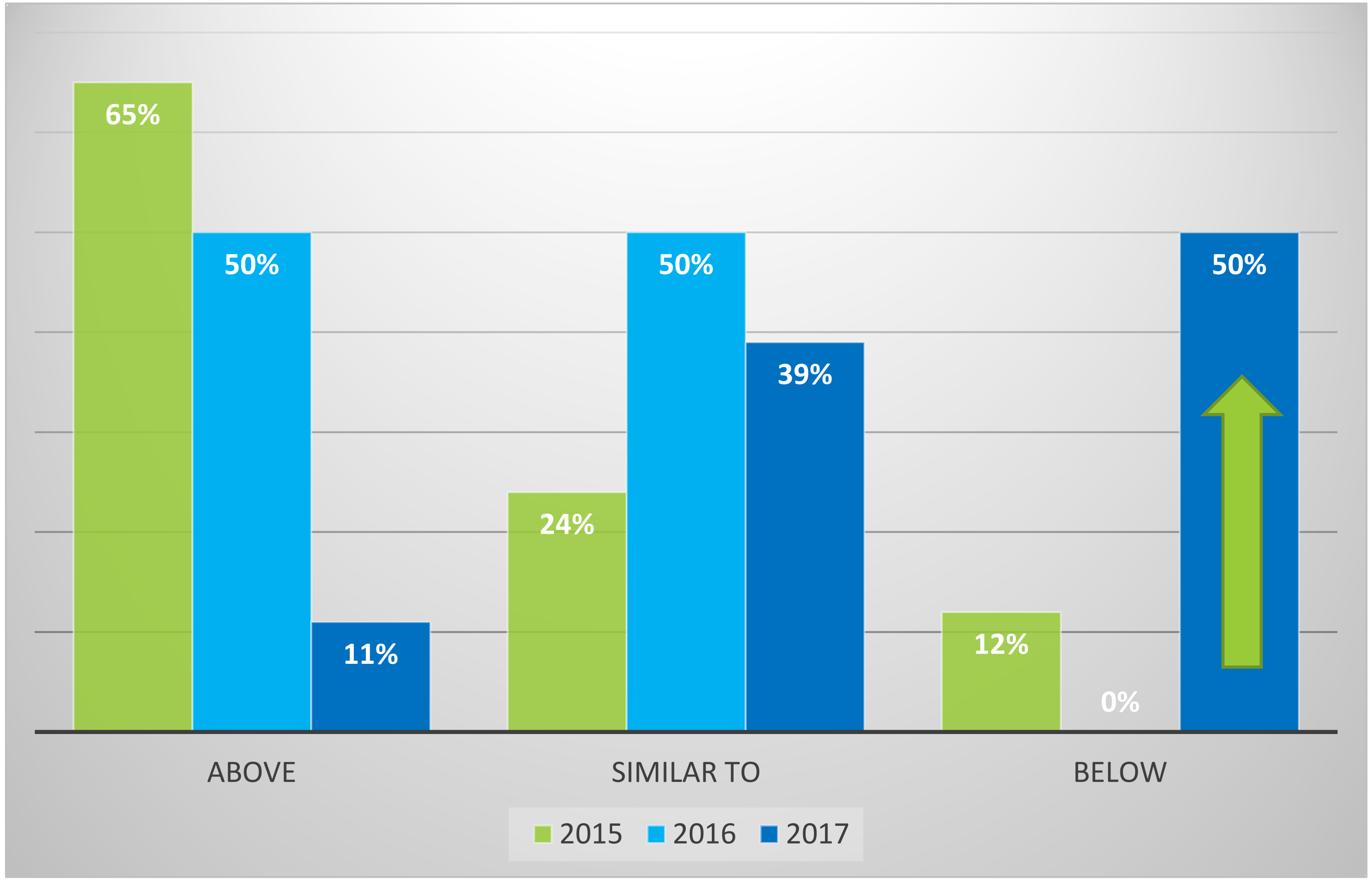
1. Yes
2. No



Year-over-Year Results

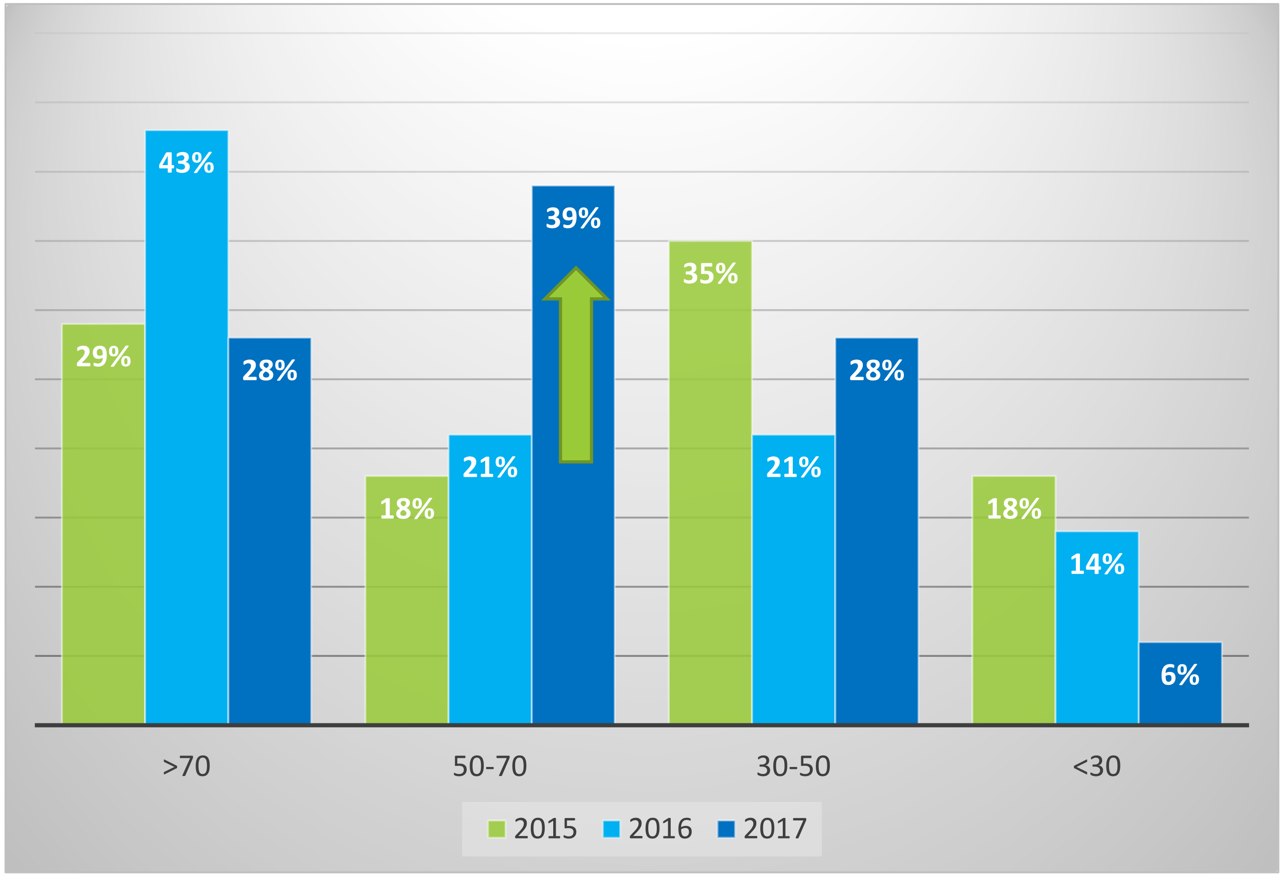
YY Current Coal Inventory is…

1. Above previous year
2. Similar to previous year
3. Below previous year



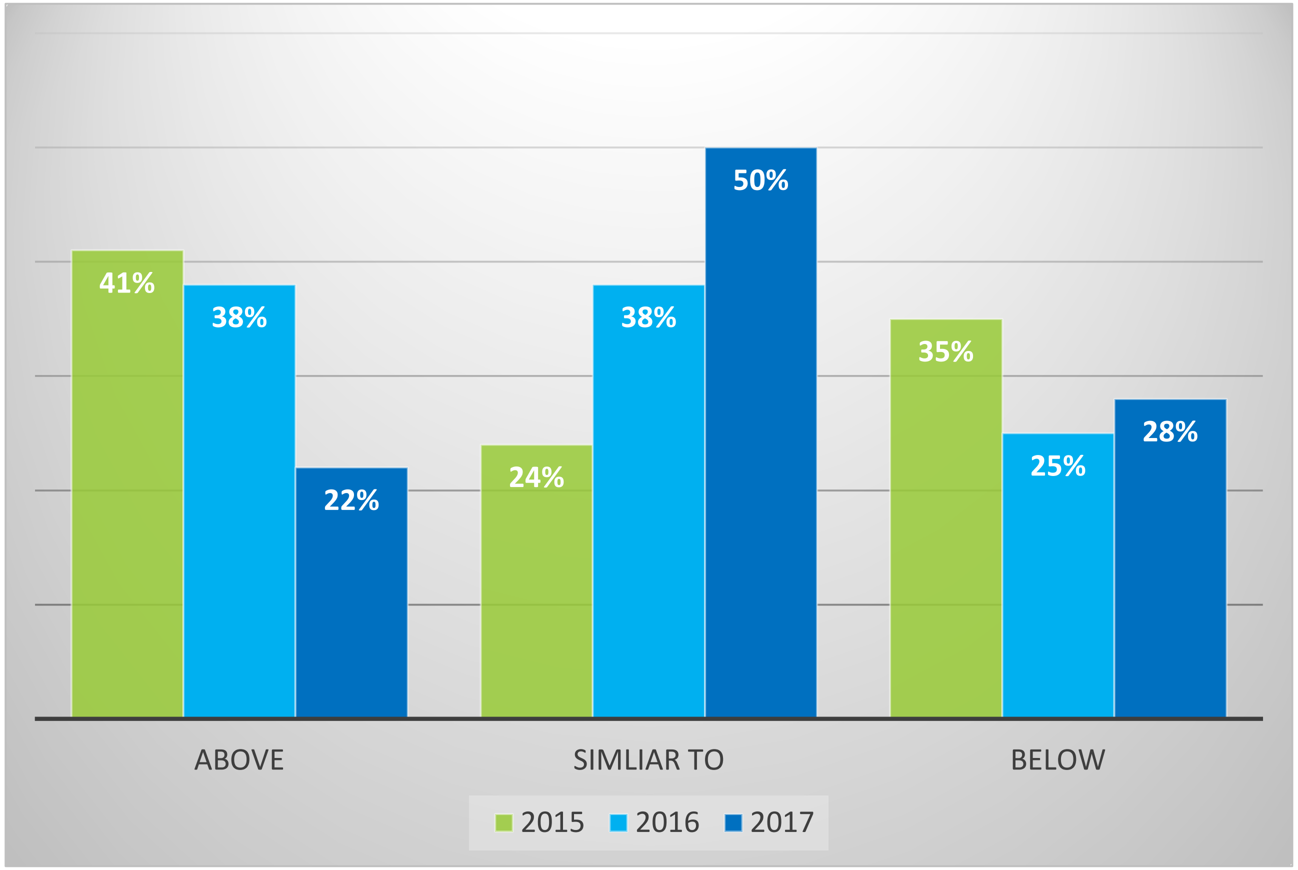
Current Coal Inventory (average days of burn on hand for generators that run all year)

1. >70
2. 50 – 70
3. 30 – 50
4. <30



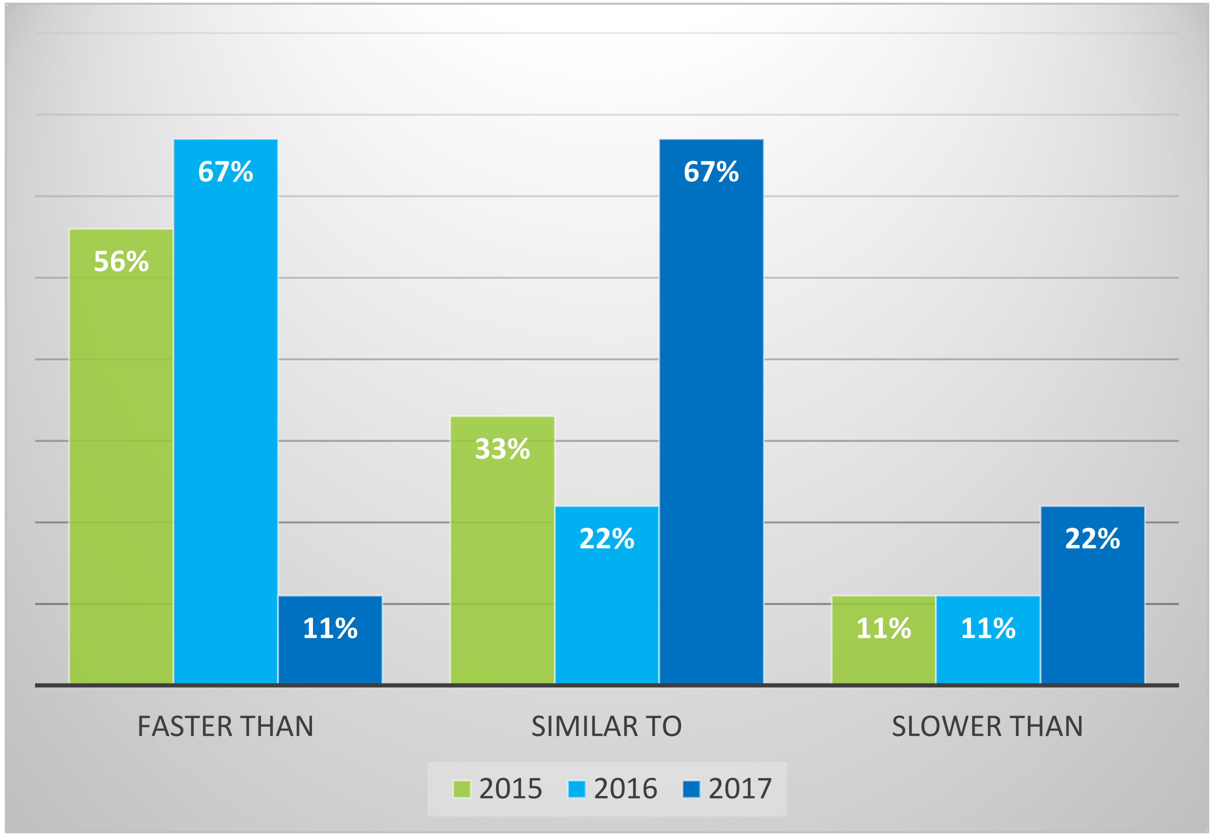
YY Actual Rail Deliveries are…

1. Above previous year
2. Similar to previous year
3. Below previous year



Rail Cycle Times are…

1. Faster than previous year
2. Similar to previous year
3. Slower than previous year



Survey Observations

- Generation from coal
  - Higher in ‘17 than previous two years
- Rail Deliveries
  - Consistent and fluid for Western shippers
- Coal Inventory
  - Starting to decline compared to previous two years

Overall: Utilities seem to focus on reducing inventory while keeping their rail deliveries consistent

Coal Inventory Data

- National coal stocks are 142 Million tons
  - 11% below compared to 2016
  - Northeast generators have 26% less YoY
- National coal burn YTD at 460 Million tons
  - 1.2% higher compared to 2016
  - PRB coal burn was 7% higher YoY
  - Higher natural gas prices
  - Nuclear unit outages were longer than normal (MISO)

NCTA survey results consistent with national data

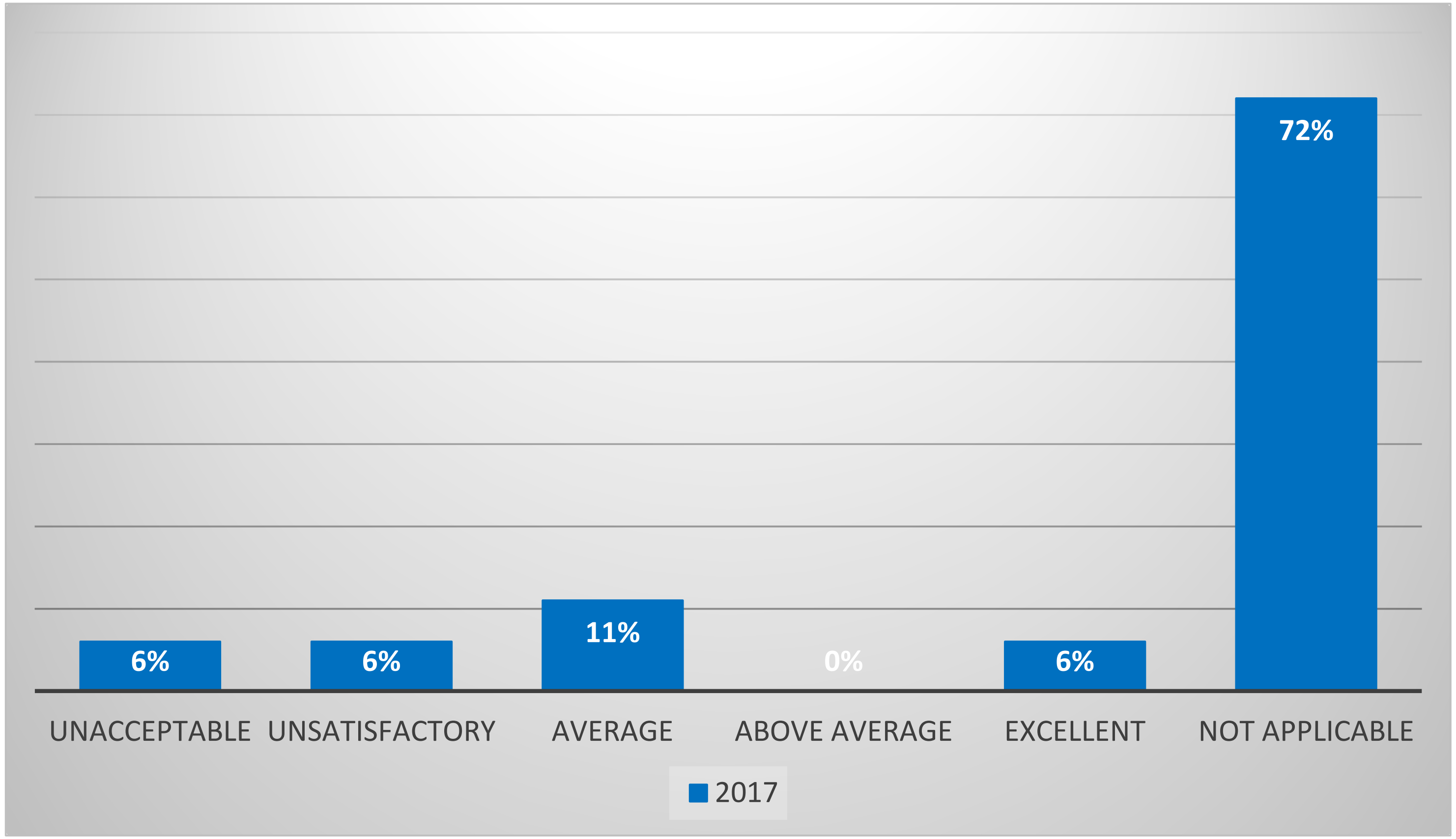
Discussion, Questions, and Comments

ADDITIONAL DATA

Rail Service Experience

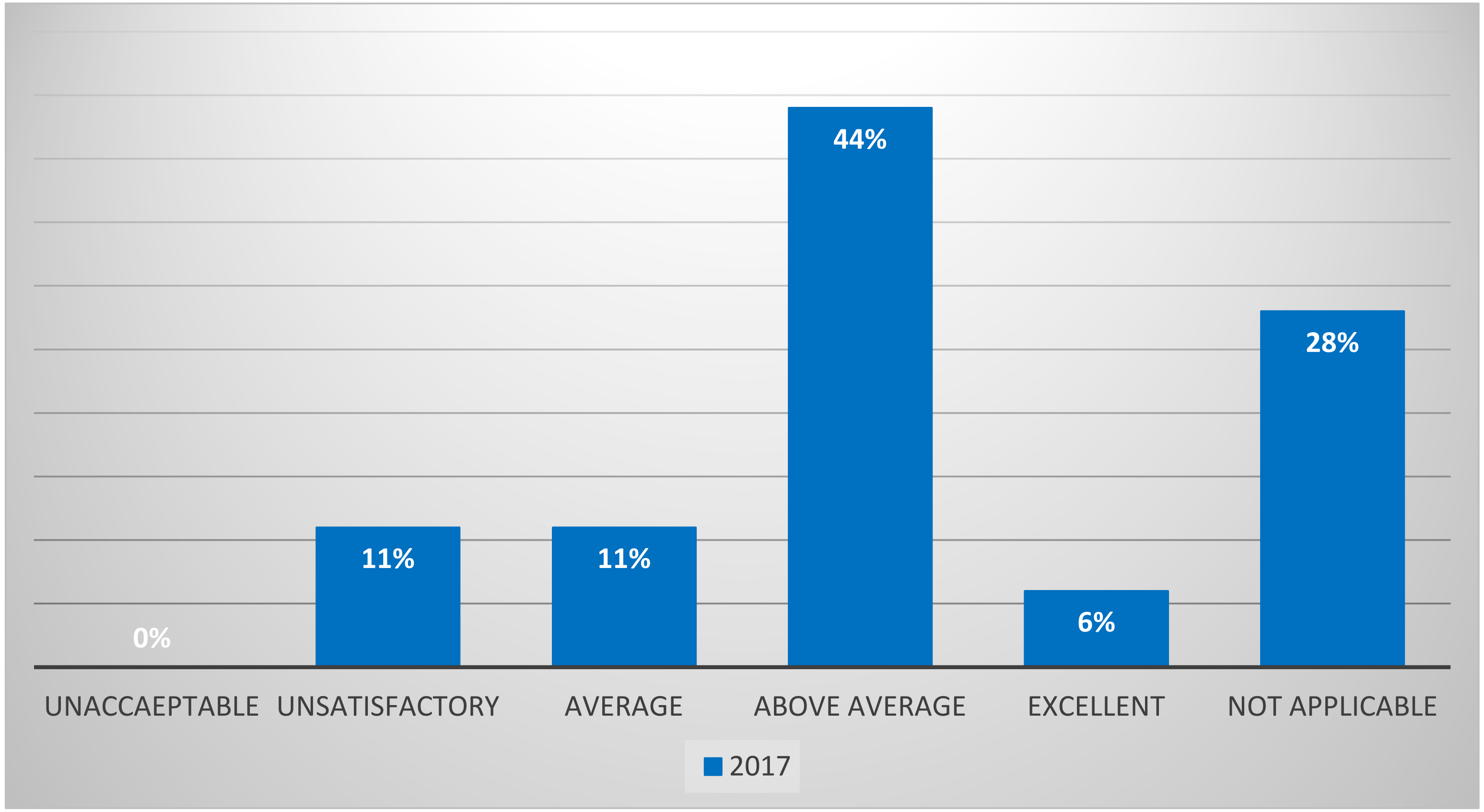
Rate Your Recent Service Experience on the Norfolk Southern Railroad

1. Unacceptable
2. Unsatisfactory
3. Average
4. Above Average
5. Excellent
6. Not Applicable



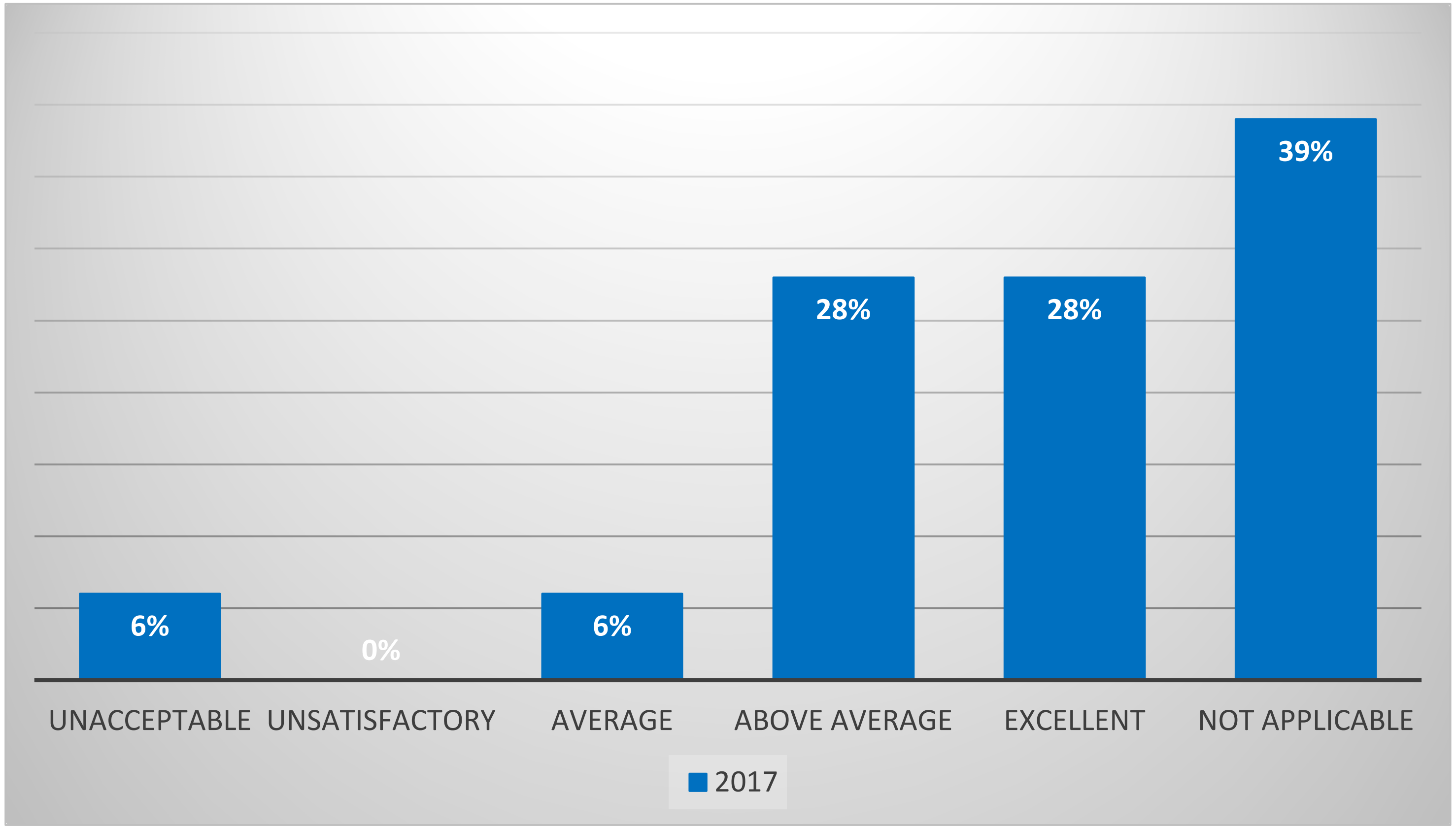
Rate Your Recent Service Experience on the BNSF Railroad

1. Unacceptable
2. Unsatisfactory
3. Average
4. Above Average
5. Excellent
6. Not Applicable



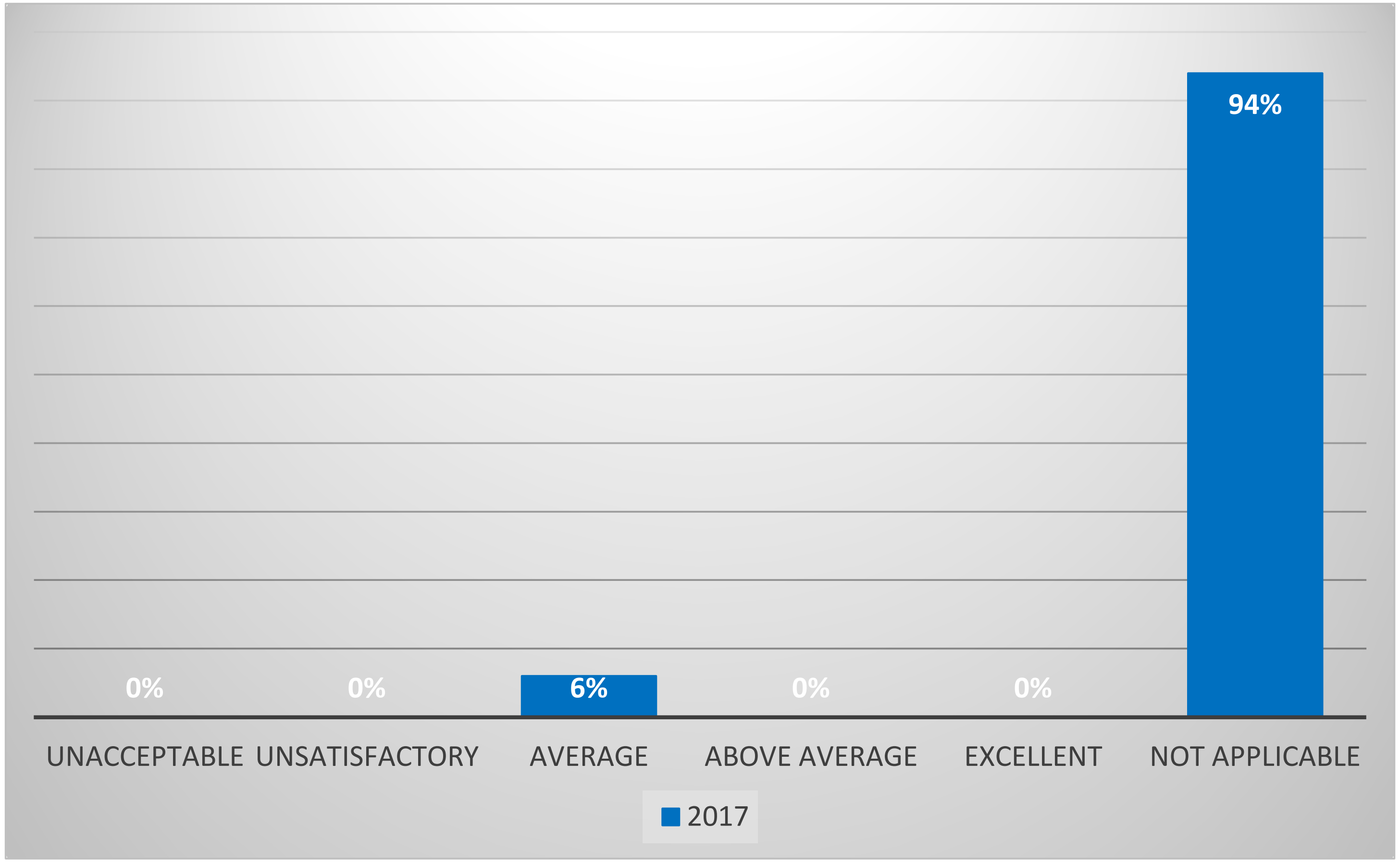
Rate Your Recent Service Experience on the Union Pacific Railroad

1. Unacceptable
2. Unsatisfactory
3. Average
4. Above Average
5. Excellent
6. Not Applicable



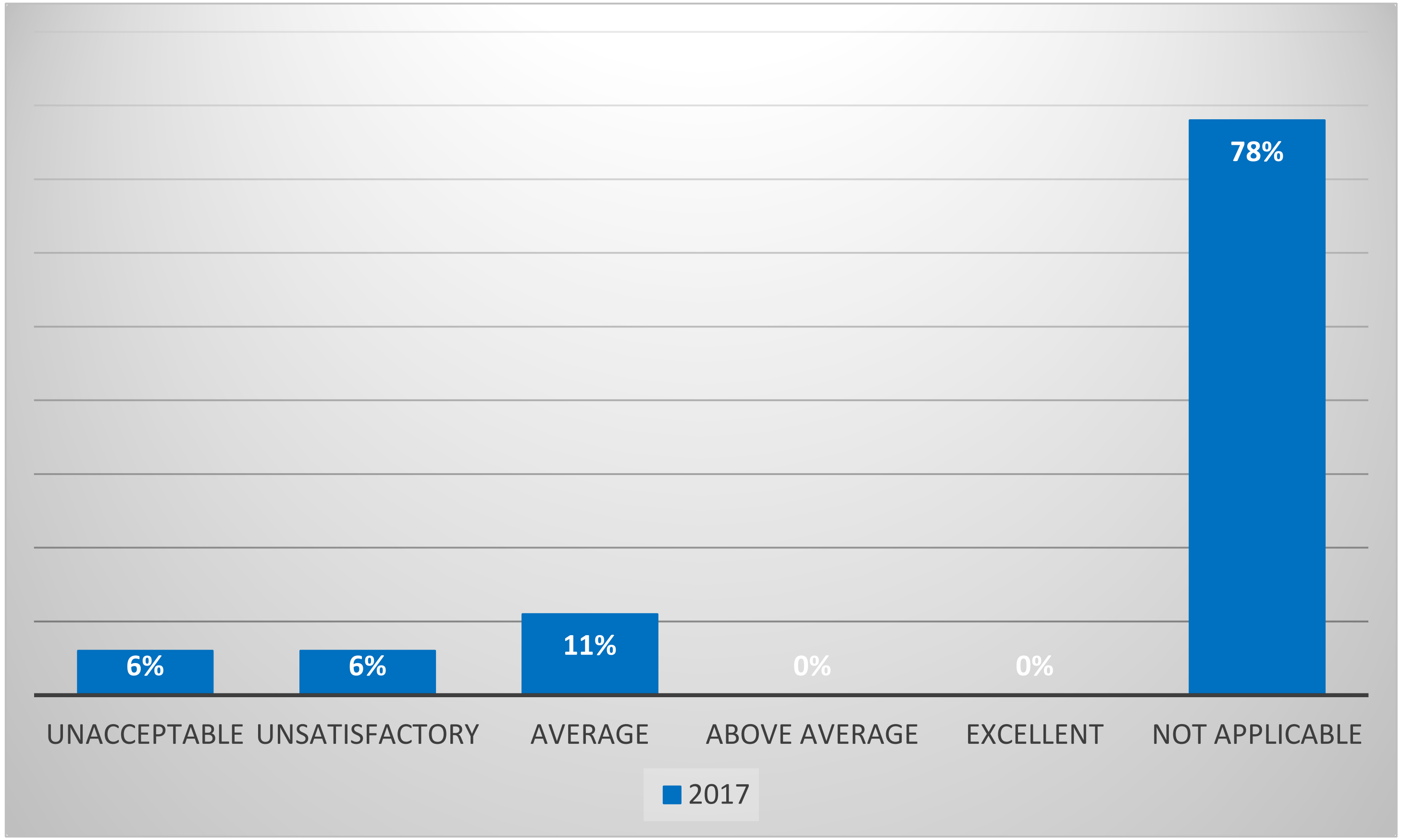
Rate your recent service experience on the KCS Railroad

1. Unacceptable
2. Unsatisfactory
3. Average
4. Above Average
5. Excellent
6. Not Applicable



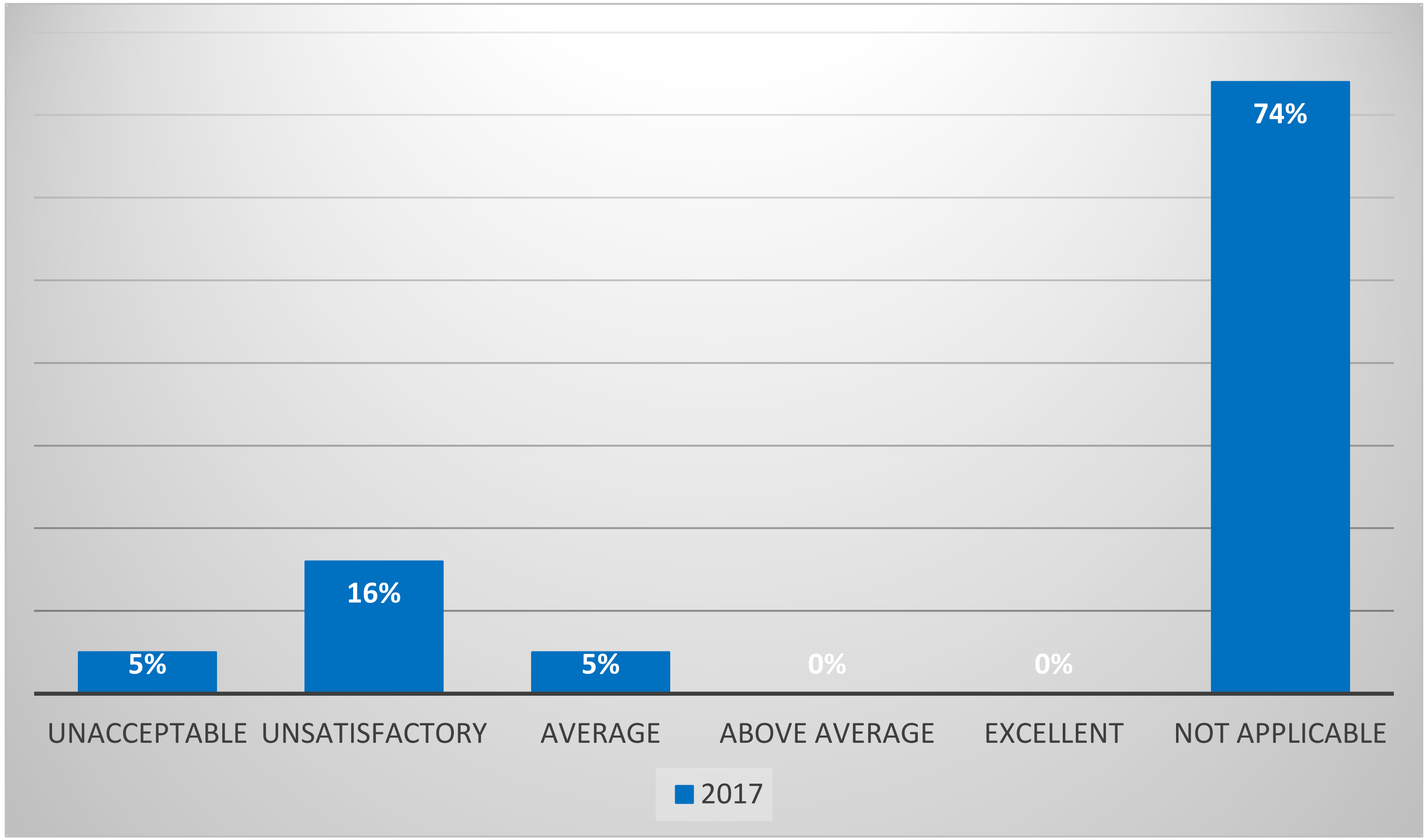
Rate Your Recent Service Experience on the CN Railroad

1. Unacceptable
2. Unsatisfactory
3. Average
4. Above Average
5. Excellent
6. Not Applicable



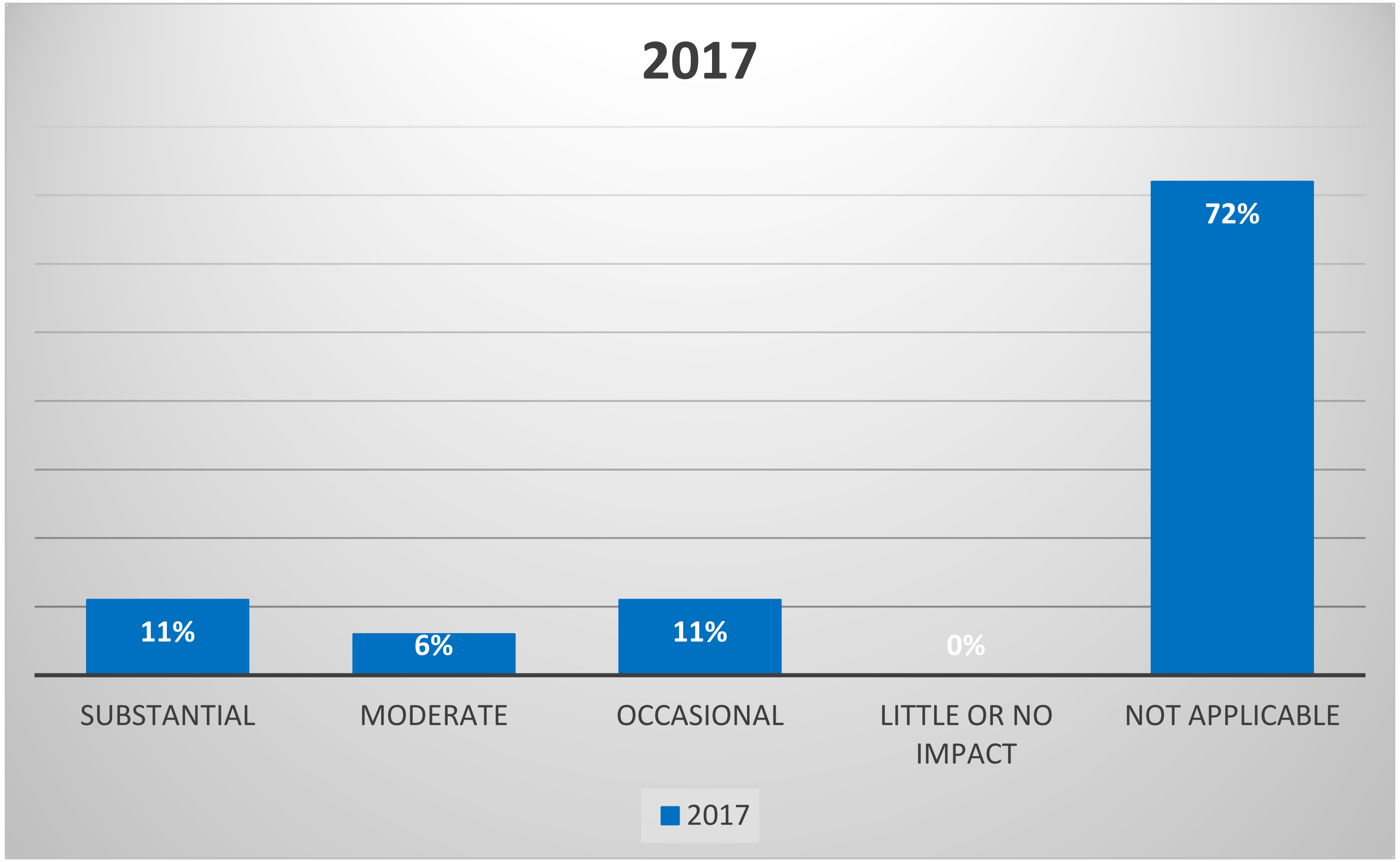
Rate Your Recent Service Experience on the CSXT Railroad

1. Unacceptable
2. Unsatisfactory
3. Average
4. Above Average
5. Excellent
6. Not Applicable



How Would You Describe the Recent CSXT Service Issues for Your Respective Utility in Terms of Impact?

1. Substantial
2. Moderate
3. Occasional
4. Little or no impact
5. Not Applicable



YY Actual Coal-fired Generation is…

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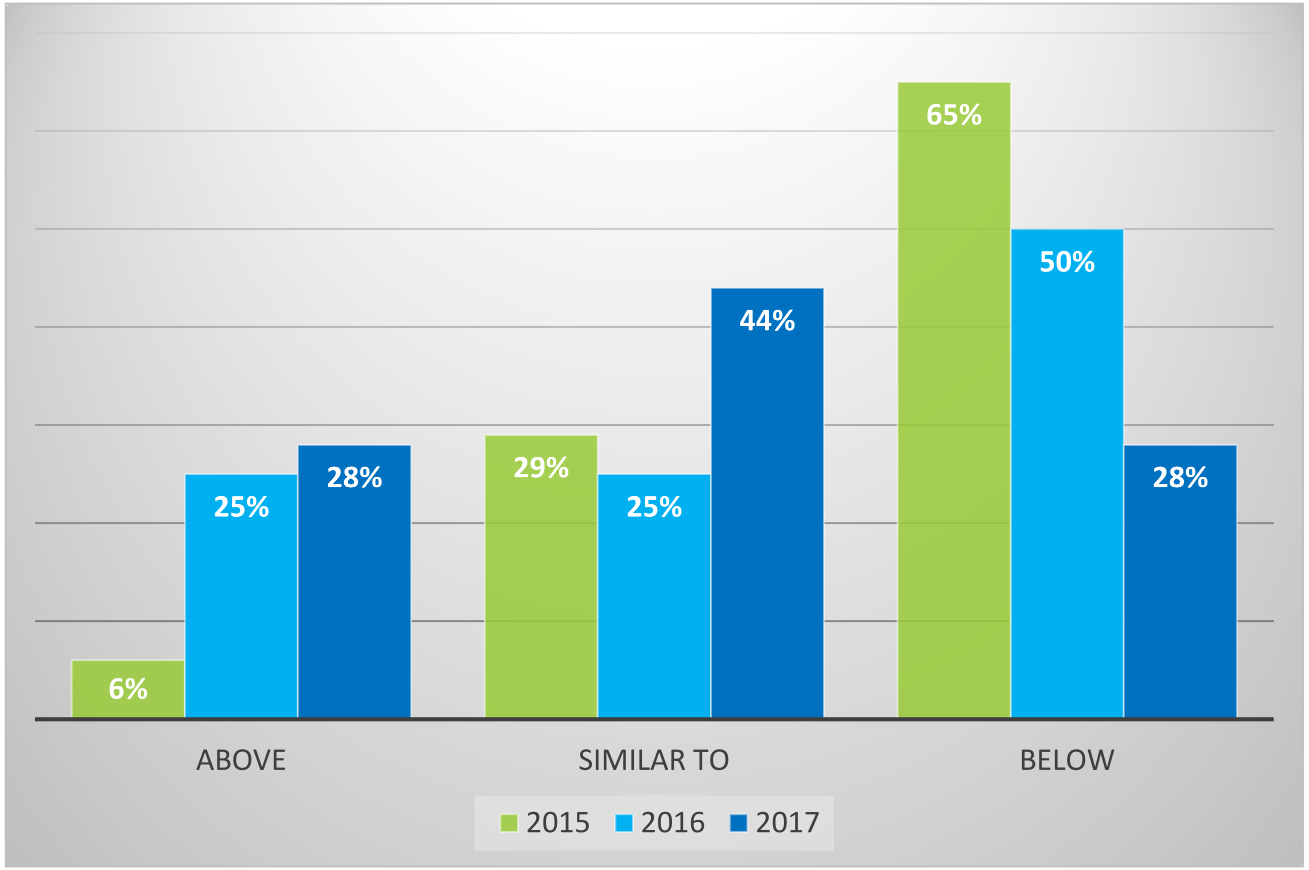
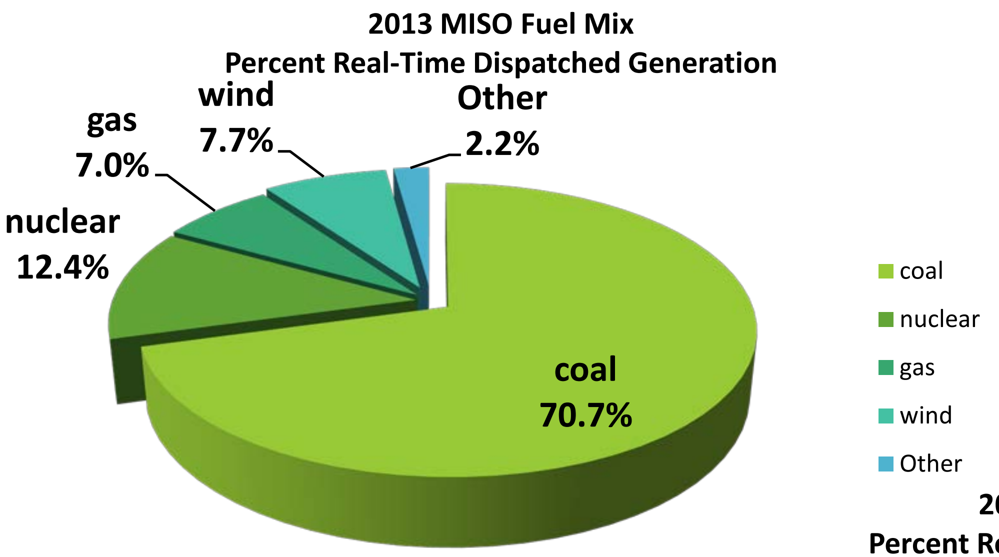
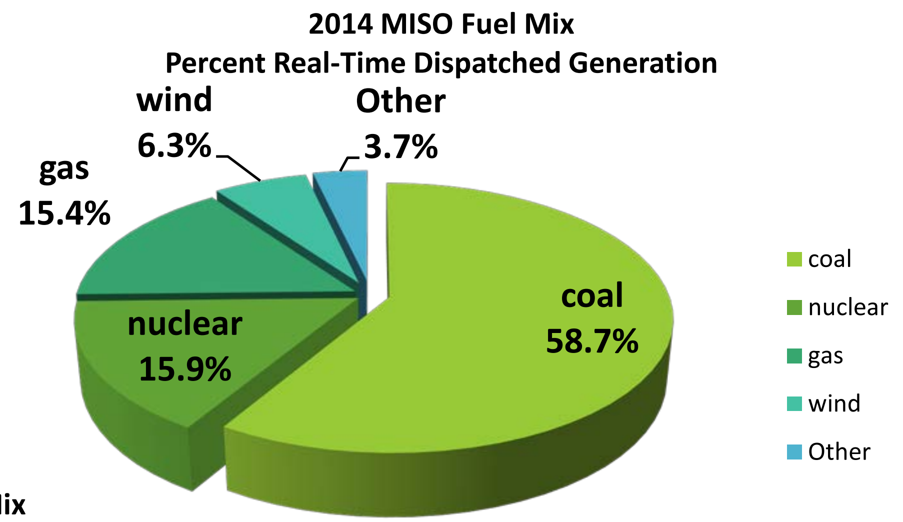
2. Similar to previous year
3. Below previous year

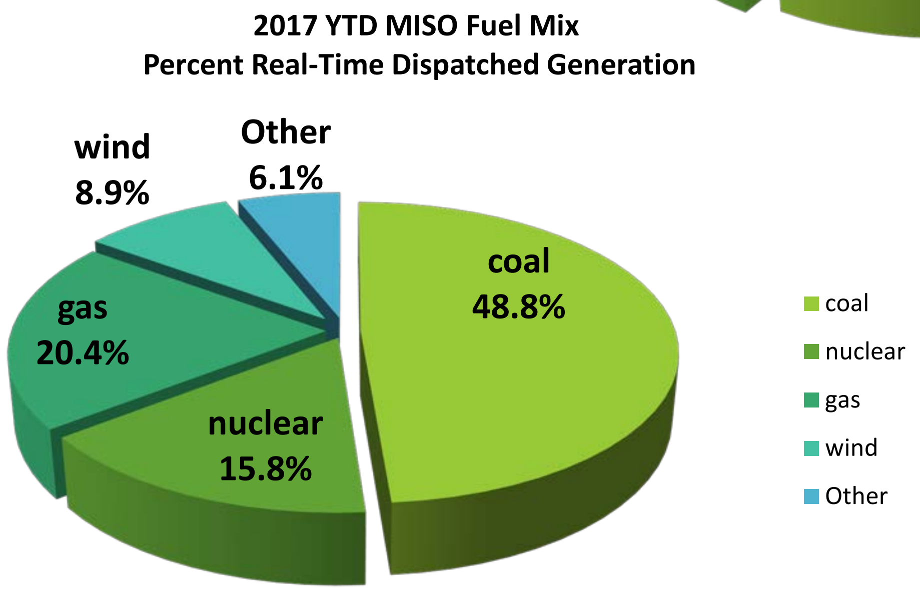


Market Data & Summary

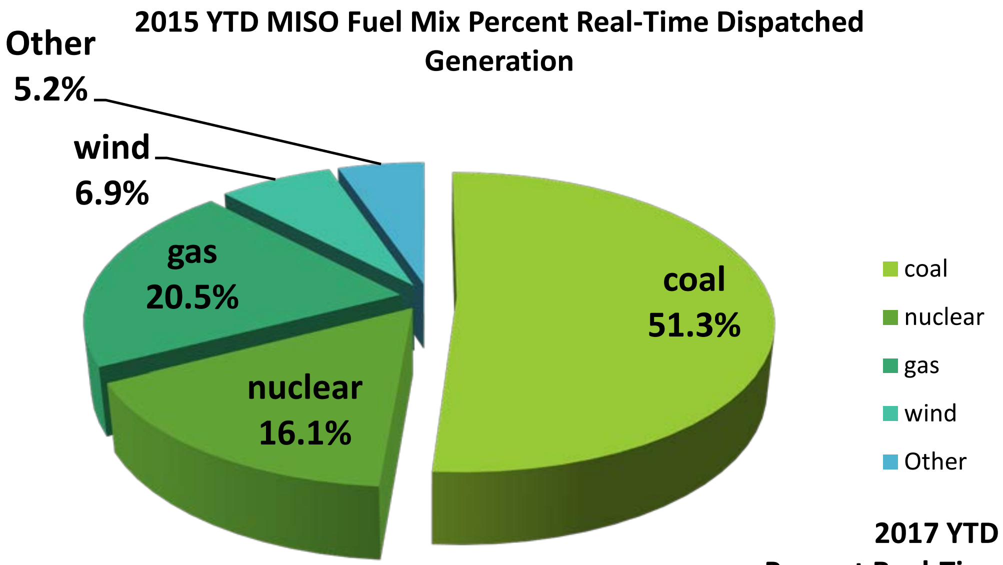
Miso Fuel Mix 2013-2014 vs 2017

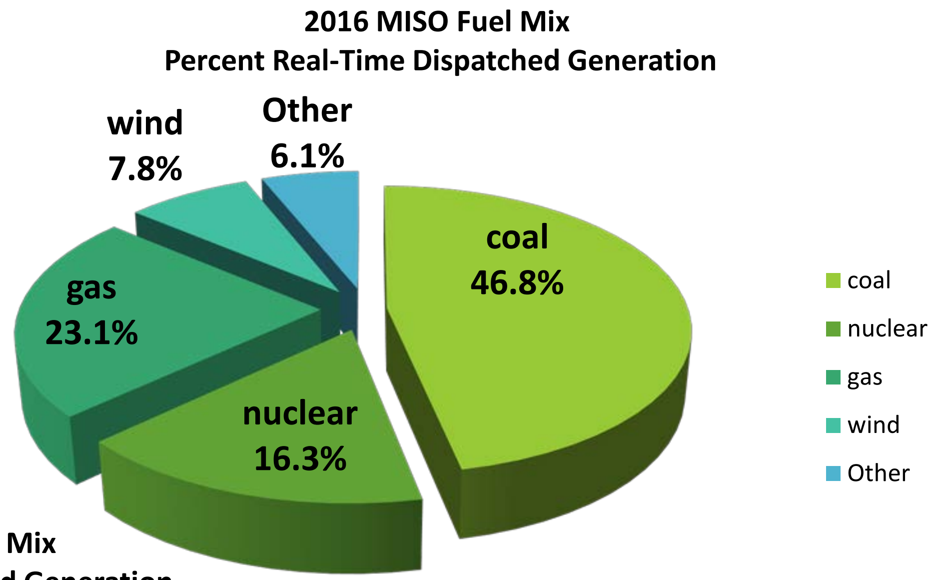


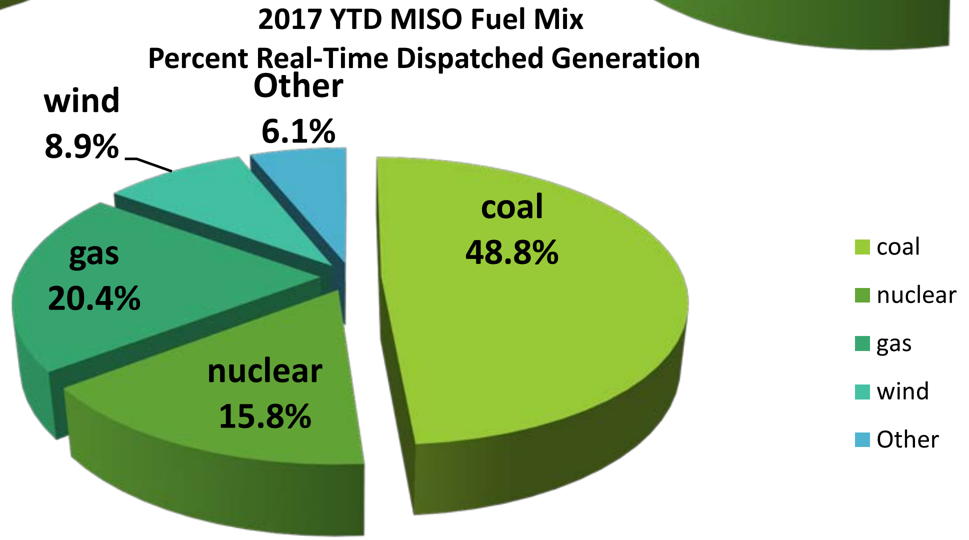




Miso Fuel Mix 2015-2016 vs 2017



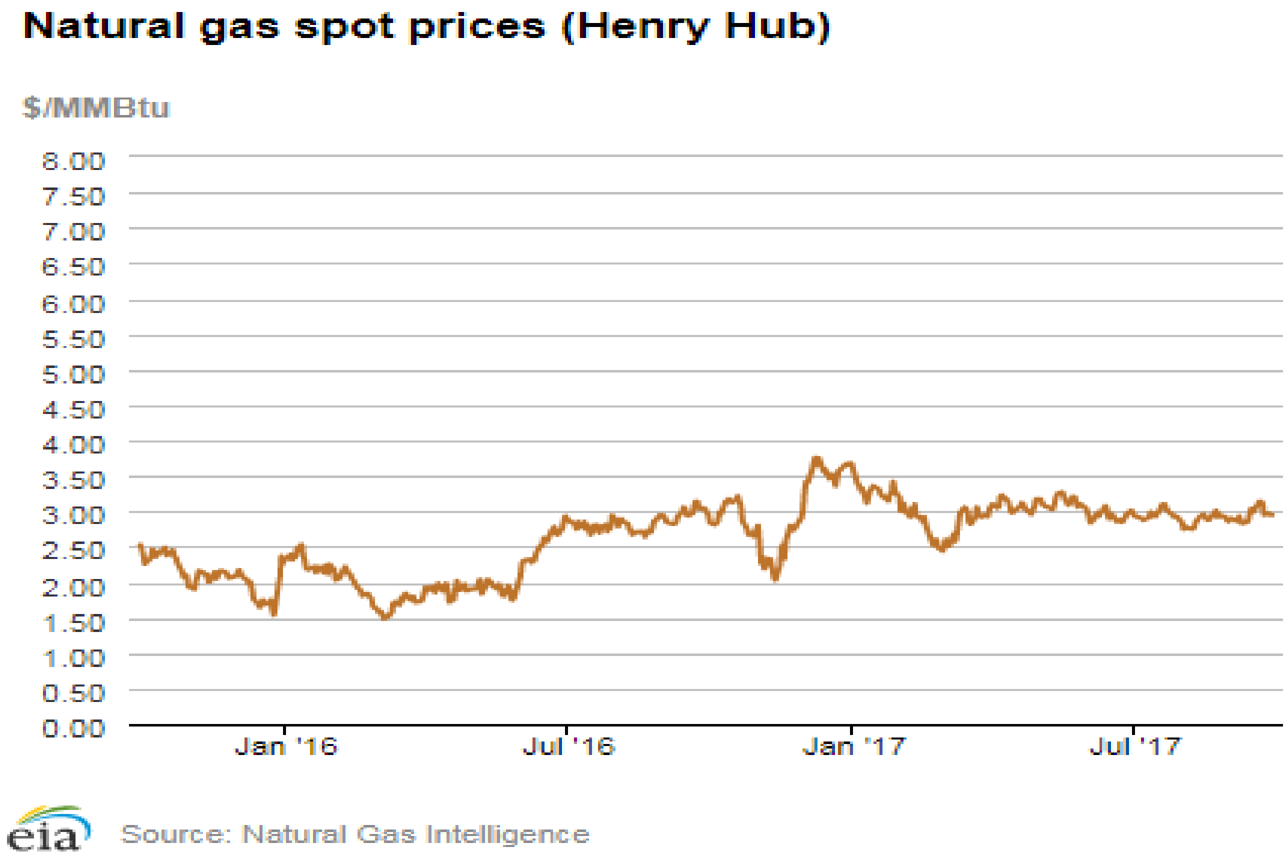




Natural Gas Market

- Nuclear capacity expected to decrease over next 8 years by 7.2 GW, announced builds at natural gas-fired power plants will offset some of lost capacity
- As of July 2017, natural gas-fired generation capacity slightly more than 40% of total U.S. operating capacity
- Over 2014–2016, Henry Hub spot price for natural gas averaged $3.17 per million British thermal units (MMBtu) and reached its lowest annual price in seventeen years in 2016 at $2.52/MMBtu

SOURCE: EIA NATURAL GAS WEEKLY UPDATE FOR WEEK ENDING SEPTEMBER 27, 2017


Natural gas spot prices (Henry Hub)
$/MMBtu
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Jan '16
Jul '16
Jan '17
Jul '17
eia
Source: Natural Gas Intelligence

Coal

- **Coal Burn - August**

National coal burn below 70 Million tons for the first time since EVA's survey started in 2003

  - Cause was not low natural gas prices, but low power demand and increased generation from renewables that caused burn to drop 12.6% below last year
  - NAPP coal burn was 22% lower YoY
  - Northeast generators were 33% lower YoY

- **Coal Burn – YTD**

National coal burn at 460 Million tons is 1.2% higher compared to 2016

  - PRB coal burn was 7% higher YoY
  - West South Central generators were 13% higher YoY

- **Coal Stockpiles - YTD**

National coal stocks stay above 142mm tons or 11% below compared to 2016

  - Average days on hand are 75 days on hand or 13% below YoY
  - Northeast generators have 26% less YoY