

Constellation's MARKET INTEL NEWSLETTER

Energy Market Update for Commercial & Industrial Customers

February 2018

Fuels

Natural Gas

- Intense arctic air in January decided warm up in February as the weather pattern flipped, bringing warm Pacific air to the eastern half of the U.S.
- This weather pattern change brought unseasonably warm temperatures to the eastern half of the U.S. and colder-than-normal temperatures to the western half of the country.
- Colder-than-normal temperatures in the West, coupled with continued problems at the Aliso Canyon storage field, drove Citygate prices above \$25/MMBtu, the highest in four years.
- The U.S. natural gas rig count decreased by seven for the most current week to 177, according to Baker Hughes.
- The natural gas plant liquids composite price at Mont Belvieu, TX rose \$0.27, averaging \$7.50/MMBtu for the week ending February 21 (EIA). Natural gas liquids pricing has been steadily increasing for months.
- China signed its first long-term LNG supply deal with Cheniere Energy to take U.S. supplies for twenty years beginning in 2023. The deal commits China to 1.2 million metric tons per year.

Coal

- Central Appalachian coal is \$60.10/short ton, up from \$58.50/ton last month (Quandl).
- Powder River basin coal is \$12.25/ton, up 1.2% from the beginning of 2018 (Quandl).

Oil

- Prompt-month NYMEX crude oil futures had a bumpy ride in the month of February, trading at a monthly high of \$65.80/bbl on February 1 and as low as \$59.19 per barrel on February 13.
- NYMEX prompt-month crude oil pricing has largely followed the direction of the U.S. stock market through February.
- U.S. oil drillers added an additional rig, bringing the total crude oil rig count to 799. This was the fifth weekly increase in a row and the highest count since April 2015 (Reuters).

Power

- Northeast real-time power (LMP) volatility was subdued in February while day-ahead gas for SoCal jumped to \$26/MMBtu in California for the week ending February 23 and day-ahead 7x24 power in SP&NP averaged \$115/Mwh for February 22.
- On January 6 a total of 27 GW of mainly coal and gas units experienced an unplanned outage (PJM).
- Forward power for 2019-2022 retraced against all-time lows in PJM East, NY, PJM NI Hub, ERCOT, ISONE and CAISO.

Economy

- U.S. unemployment remained at 4.1% in January (Bureau of Labor Statistics).
- The Consumer Price Index jumped to .5 in January, up from .2 in December 2017, raising some concerns regarding inflation (Bureau of Labor Statistics).
- Personal income rose 0.4% on an annualized basis in December (Bureau of Economic Analysis).
- Non-farm payrolls increased by 200,000 jobs in January (Trading Economics).
- The labor force participation rate remained at 62.7% in January, unchanged from the prior month.

Weather

- While the first week of January was ranked as the top 10 coldest of the 2000's, February saw 694 heating degree days (HDD) vs. the 30-year normal of 779 and 10-year of 784.
- March is estimated to be warmer as well at 615 HDDs vs. the 30-year normal of 631 with most of the cold centered West of the Rockies.
- On average March declines from 25 HDD/day at the start of the month down to 15 HDD by April 1, with the bulk of heating load coming in the first two weeks of the month.

Inside This Issue

| | |
|---------------------------------|-------|
| Natural Gas | 2 |
| Bulls and Bears | 3 |
| Production Continues Recovering | 3 |
| Where Is U.S. LNG Going? | 3 |
| Summary & Regional Trends | 4 – 8 |

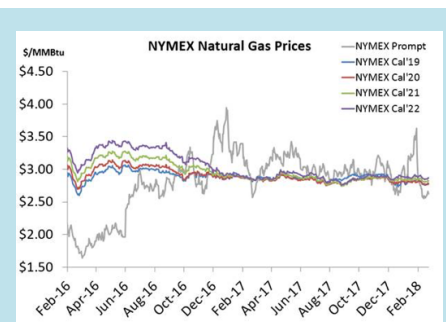
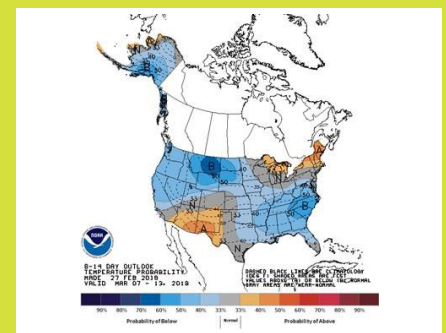
Prompt Month Settlements

| | Mar '18/ Apr '18 | 30-Day Change |
|---------------------|---------------------|--------------------|
| Nat Gas \$/mmBTU | \$2.639 | -\$0.866/ MMBTU |
| Crude Oil \$/bbl | \$63.91 | -\$2.23/BBL |

As of 2/27/2018.

8-14 Day Outlook

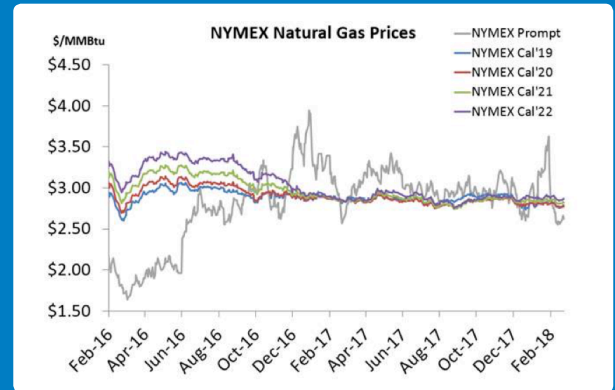
Source: NOAA



Natural Gas



- NYMEX prompt month gas futures have declined since late January and are currently trading near the bottom of their 18-month range at \$2.60/MMBtu as record production and mild balance of winter outlooks weighs on the market.
- NYMEX calendar strip prices continue to trend mostly sideways with Cal'19-Cal'22 strips trading in the \$2.77-\$2.86 range.
- Total U.S. natural gas demand (including exports) averaged 87.1 Bcf/d during the week ended February 21st, which is nearly 40% lower than the first week of January when demand hit record levels.
- Storage inventories stand at 1,760 Bcf, a 412 Bcf (-19%) deficit to the five-year average and 609 Bcf (-26%) lower than year-ago levels. Stocks are on pace to end March at ~1,400 Bcf (the second lowest end-of-winter total since 2010).
- Natural gas production is holding steady near an all-time high of 78 Bcf/d this month, with the West still dealing with periodic freeze-offs. The EIA forecasts natural gas output will average 80.3 Bcf/d in 2018, a 9% increase versus the 2017 average.
- Exports from Sabine Pass had been averaging at full capacity of 3.2 Bcf/d for most of the winter, but feedstock deliveries fell below 2 Bcf/d after leaks were discovered at two LNG storage units. The first LNG exports from Cove Point, Maryland are expected in a matter of weeks.
- Cheniere Energy announced that it signed the first-ever long-term U.S. LNG export agreement with a state-owned Chinese energy firm. China became the world's second largest LNG importer in 2017 after demand grew 46% year-over-year.



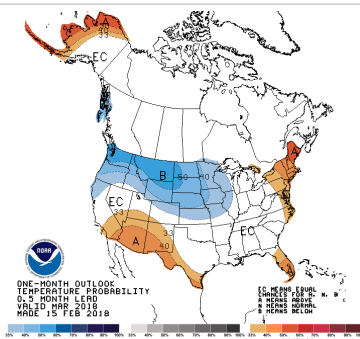
| NYMEX Futures Pricing | Current Price | Last Month | M/M Change | Last Year | Y/Y Change |
|-----------------------|---------------|------------|------------|-----------|------------|
| Prompt (Mar18) | \$2.625 | \$3.444 | (\$0.819) | \$3.419 | \$0.008 |
| Winter (Nov18-Mar19) | \$2.945 | \$3.055 | (\$0.110) | \$3.613 | (\$0.073) |
| 12 Month Strip | \$2.797 | \$2.984 | (\$0.187) | \$3.473 | (\$0.177) |
| 2019 | \$2.783 | \$2.821 | (\$0.038) | \$2.944 | (\$0.051) |
| 2020 | \$2.775 | \$2.818 | (\$0.043) | \$2.907 | (\$0.061) |
| 2021 | \$2.822 | \$2.861 | (\$0.039) | \$2.896 | (\$0.020) |
| 2022 | \$2.862 | \$2.897 | (\$0.035) | \$2.891 | \$0.009 |

As of 1/26/2018.

Month Temperature Outlook Source: NOAA



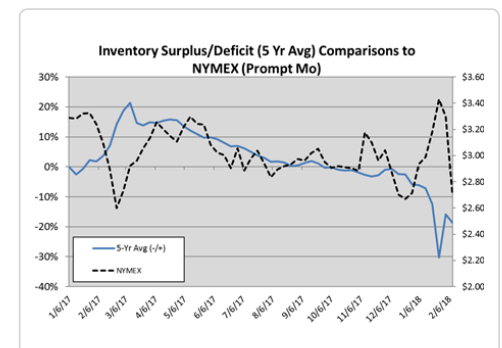
- The first 15 days of last month (Jan'18) came in at the 15th coldest since 1950 (the first seven days were the second coldest on record!). The last 16 days of the month came in the eleventh warmest on record as blocking relaxed over Alaska and the colder air stayed up north.
- Current weather models, for the balance of winter through March, are showing a complicated pattern, with strong blocking over Greenland/Arctic, and strong storminess across the West. Blocking over Greenland (negative NAO index) may start trending temperatures down across the Midwest and East for the first ten days of March.
- Storminess coming in from the West, however, may make the pattern quite variable, which may limit the strength of any cold shots. For March temperatures to have a strong impact, cold must occur over the first half of the month, as normal heating demand tends to decline rapidly for the second half of the month.



Natural Gas Storage Source: NOAA



- A possibility for some blocking and cold in the eastern two-thirds is coming out of some models towards the end of the two-week forecasts. Late winter cold could push up heating demand higher than we've seen during most February which has lacked strong cold.
- Although domestic dry gas production continues to shatter all-time records, any extreme cold or extraction disruptions in producing regions could bring wellhead freeze-offs and curtail the upward growth on supply.
- Large storage withdrawals would further widen the underground storage deficit to last year and the five-year average, currently 23 and 19% respectively as of February 15.
- If storage finishes at or below the EIA forecasted 1,428 Bcf on March 31 it would market inventory's lowest level since 2014 when it was at 828 Bcf.
- LNG exports at the Louisiana Sabine Pass facility continue to maintain demand levels at or above 3 Bcf/day which has picked up some of the excess supply slack we are seeing from production.



Bulls vs. Bears



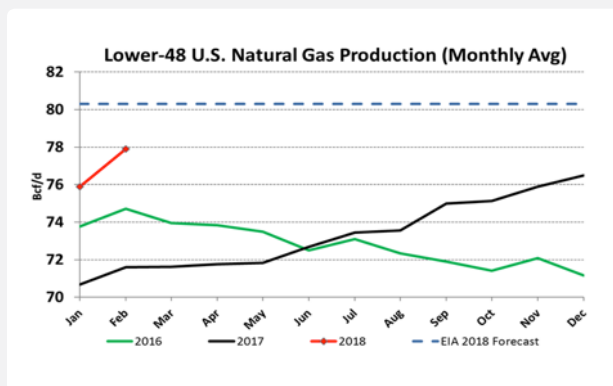
Bulls

- A possibility for some blocking and cold in the eastern two-thirds is coming out of some models towards the end of the two-week forecasts. Late winter cold could push up heating demand higher than we've seen during most February which has lacked strong cold.
- Although domestic dry gas production continues to shatter all-time records, any extreme cold or extraction disruptions in producing regions could bring wellhead freeze-offs and curtail the upward growth on supply.
- Large storage withdrawals would further widen the underground storage deficit to last year and the five-year average, currently 23 and 19% respectively as of February 15.
- If storage finishes at or below the EIA forecasted 1,428 Bcf on March 31 it would market inventory's lowest level since 2014 when it was at 828 Bcf.
- LNG exports at the Louisiana Sabine Pass facility continue to maintain demand levels at or above 3 Bcf/day which has picked up some of the excess supply slack we are seeing from production.

Bears

- An expected mild finish to February and early March is expected to limit natural gas heating demand nationally.
- Although some cold risks remain in the forecast in early March, realized below-average temperatures in March may not elicit the same level of gas use as the frigid winter months of January and February.
- A continuation of Lower 48 dry gas production growth as its most recent record-breaking reading at 78.1 Bcf/day is almost 8 Bcf/day more than 2017, equating to a 10% increase.
- Smaller-than-average withdrawals could lead to March 31 underground stock levels above the EIA's projected 1,428 Bcf level and leave supplies sufficient as we head into injection season.
- Crude oil prices sustaining price levels above the \$60 mark could keep drilling investments in place and bring more associated gas supply to the market.

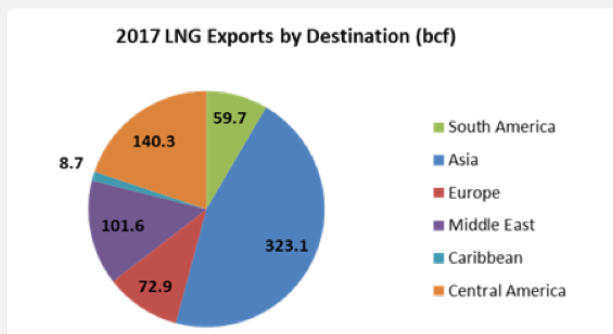
Production Continues Recovering



Source: EIA

- EIA has reported preliminary production for February averaging 78 Bcf/d month-to-date and production is up from 72 Bcf/d in Feb '17.
- Freeze-offs have totaled 56 Bcf, vs 48 Bcf for same point next winter. Freeze-offs of less than 0.5 Bcf/d are occurring in the Dakotas and Colorado.
- Producers continue to report drilling productivity gains, with Chesapeake and Range Resources reporting break even rates of \$2.50/MMBtu in the Haynesville shale (LA) near Henry Hub.
- Northeast production is currently sitting at ~25 Bcf/d and its next expansion is expected when the second phase of Rover pipeline—which runs from eastern OH to Michigan—comes online sometime in April. TX production is at ~17 Bcf/d, just slightly below year-ago levels, but almost 1 Bcf below January 2016 levels.

Where Is U.S. LNG Going?



Source: DOE/EIA

- DOE released LNG export data through December 2017 and the U.S. exported 82 Bcf in December from Sabine Pass, with the majority going to Asia (~60 Bcf).
- For 2017, 93 cargoes went to Asia (Japan, China, South Korea, and India) with a total of 706 Bcf exported for all of 2017.
- The second U.S. export facility to come online, Cove Point on the Chesapeake Bay in MD (0.7 Bcf/d), is taking feedstock gas and its inaugural tanker has docked at the facility in the last week of February. This shipment should depart the first full week of March.

Great Lakes Electric Summary: Customer Takeaways

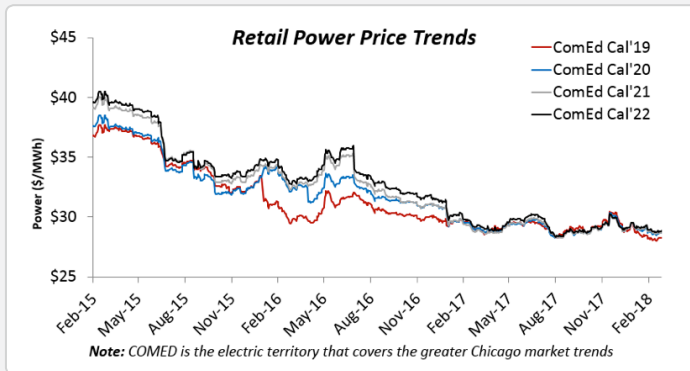


- Forward power prices have moved lower in the Michigan and Illinois markets throughout most of the winter and are currently within 2% of all-time lows for 2019-2022. Ohio power prices have rallied 6% since setting new contract lows last August as regional gas prices have strengthened.
- Day-ahead index prices declined by nearly 50% on average from January to February across the Midwest. Although extreme cold in early January drove spot power prices to the highest levels in several years, the volatility settled down quickly during a warmer-than-normal February.
- Nuclear outages are expected to be higher than normal in PJM and MISO this spring, especially in Illinois where four units are expected to come off-line for refueling between February and April.
- Western PJM is expected to see the addition of 1.1 GW of combined-cycle natural gas-fired generation capacity this spring with two new units slated to come online in OH and IN.
- PJM released planning parameters for the upcoming PY21/21 capacity auction. The PJM RTO forecast peak load is 152.7 GW, which is 0.8% lower than the peak load forecast used in the PY20/21 auction.

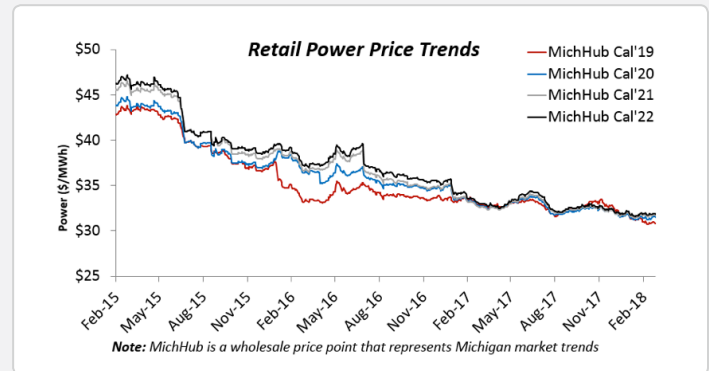
Great Lakes Retail Power Price Trends

| % Change in Forward Power | ComEd 2018-2019 | ComEd 2020-2021 | Mich Hub 2018-2019 | Mich Hub 2020-2021 | AEP-Day 2018-2019 | AEP-Day 2020-2021 | Ameren 2018-2019 | Ameren DAY 2020-2021 |
|---------------------------|-----------------|-----------------|--------------------|--------------------|-------------------|-------------------|------------------|----------------------|
| Year-over-Year | -2% | -1% | -5% | -3% | 2% | 2% | -4% | -3% |
| Month-over-Month | -1% | -1% | -1% | 0% | -1% | -1% | 0% | 0% |
| Year-to-Date | -5% | -6% | -8% | -9% | -1% | -3% | -5% | -9% |
| Compared to All-Time Low | 1% | 2% | 0% | 1% | 6% | 6% | 1% | 1% |

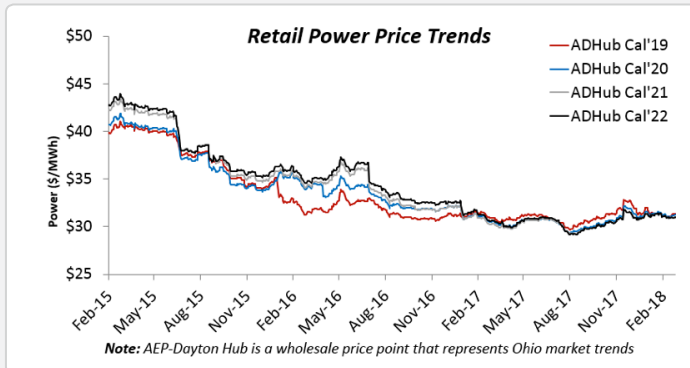
ComEd



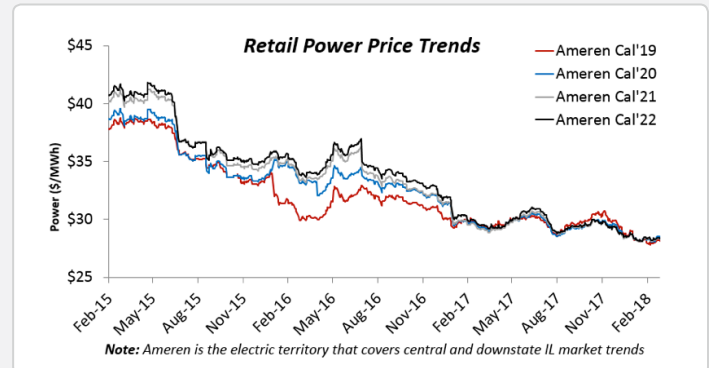
Mich Hub



AEP-Dayton Hub



Ameren



Mid-Atlantic Electric Summary: Customer Takeaways



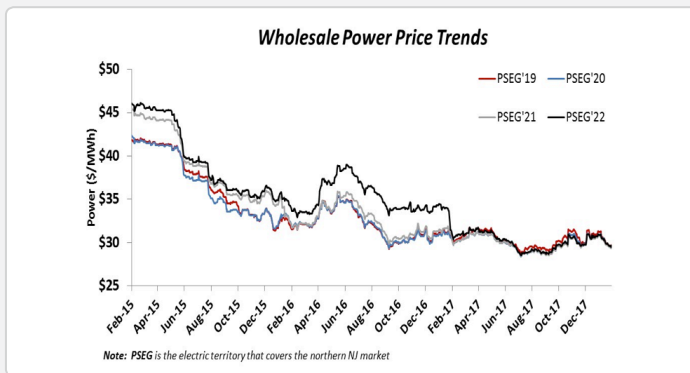
- After peaking at the end of January at \$3.661/MMBtu, NYMEX natural gas prices have plummeted by over \$1.00 as of 2/23, as the market has shrugged off normally bullish large storage deficits for historical high natural gas production and warm forecasted temperatures through the start of March. Due to the high correlation between gas and power prices, power forwards have followed suit with this market sell-off.
- PJM forward energy prices, through 2022, are trading roughly -4% lower month-over-month on the front end of the curve (2019) and -3% lower on the back end of the curve (2020-2022). Compared to the historical low price traded for each calendar year, the current forwards through 2022 have recently moved down to an average of only +5% above those all-time lows.
- Compared to the Day-Ahead index prices in eastern PJM for January 2017, this past January's (2018) index prices settled at an average price that was +159% higher due to the extremely cold temperatures at the front half of the month.

Mid-Atlantic Retail Power Price Trends

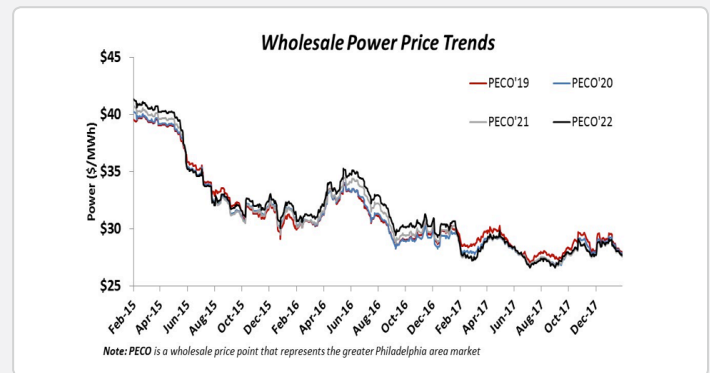
| 24-Month Fwd Trading Range | PSEG 2019-2020 | PSEG 2021-2022 | PECO 2019-2020 | PECO 2021-2022 | APS 2019-2020 | APS 2021-2022 | BGE 2019-2020 | BGE 2020-2021 | PPL 2019-2020 | PPL 2021-2022 |
|----------------------------|----------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| vs High (\$/MWh) | -\$5.92 | -\$8.02 | -\$6.23 | -\$7.33 | -\$2.51 | -\$2.62 | -\$5.15 | -\$5.17 | -\$5.44 | -\$5.80 |
| vs Low (\$/MWh) | \$0.94 | \$0.95 | \$0.96 | \$0.96 | \$2.38 | \$2.54 | \$2.29 | \$2.38 | \$1.64 | \$0.94 |
| vs High (%) | -17% | -21% | -18% | -21% | -7% | -8% | -13% | -13% | -15% | -17% |
| vs Low (%) | 3% | 3% | 4% | 4% | 8% | 9% | 7% | 7% | 5% | 3% |

| Index Pricing | AECO | APS | BGE | DPL | DUQ | JCPL | PEPCO | PPL | PSEG | MetEd | PECO | Penelec |
|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| January '17 | \$30.78 | \$31.04 | \$35.58 | \$32.29 | \$30.01 | \$31.21 | \$33.88 | \$30.62 | \$31.89 | \$31.26 | \$30.21 | \$30.00 |
| January '18 | \$86.23 | \$72.98 | \$84.26 | \$91.74 | \$63.25 | \$86.45 | \$82.88 | \$84.20 | \$89.16 | \$86.39 | \$85.68 | \$68.25 |
| % Change | 180% | 135% | 137% | 184% | 111% | 177% | 145% | 175% | 180% | 176% | 184% | 127% |

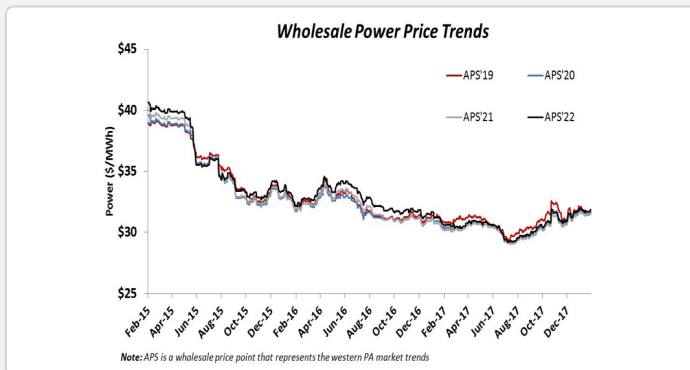
PSEG



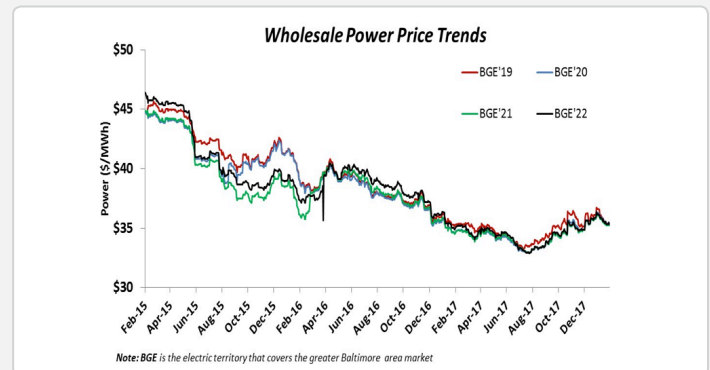
PECO



APS



BGE



Northeast Electric Summary: Customer Takeaways

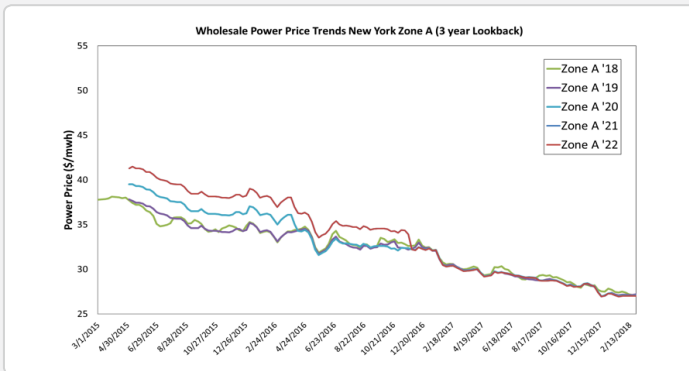


- Over halfway through February, NY Zone A, G, J, and the Mass Hub have seen day-ahead index prices plummet from the extreme cold shot that drove index prices into the triple digits during the first week of January.
- Zone J average day-ahead LBMPs for February so far average \$36.49/MWh. This is down significantly from January's \$96.02/MWh and December 2017's \$49.54/MWh and is largely due to the departure of sustained colder weather in the state.
- Upstate prices have followed a similar trajectory so far for February, as Zone A average DA LBMPs currently average \$24.81/MWh for the month. This is also a significant drop from last month (\$60.07/MWh) and December's (\$32.24/MWh) average monthly LMPs, as temperatures moderated in the first half of February.
- Mass Hub day-ahead LMPs have seen an equivalent decline for February from the January LMPs which had topped triple digits at \$102.23/MWh as the day-ahead average so far for the month has been cut in half at \$42.44/MWh
- With NYMEX prompt-month gas prices back down to levels seen this time last year, power forwards in New York show a similar relationship, with forward markets sitting within 1% of all-time lows through 2021. Power forwards in New England remain elevated compared to where they were this time last year nearing the end of winter.

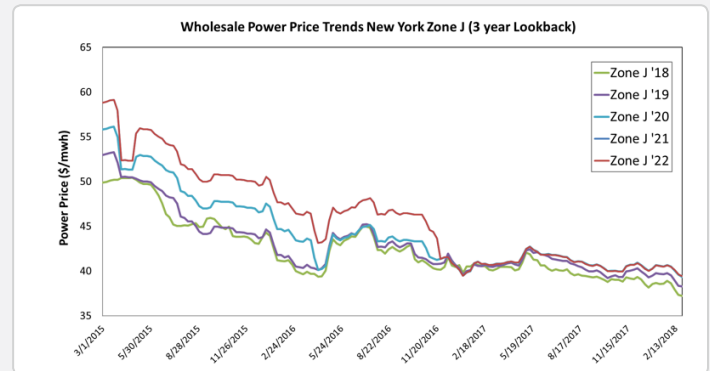
Northeast Retail Power Price Trends

| 3-Year Price Trend | New England Mass Hub 2018 | New England Mass Hub 2019 | New England Mass Hub 2020 | New England Mass Hub 2021 | New England Mass Hub 2022 | New York Zone J 2018 | New York Zone J 2019 | New York Zone J 2020 | New York Zone J 2021 | New York Zone J 2022 |
|---------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Current Price vs 3-Year Average | -25% | -4% | -3% | -4% | -6% | -24% | -14% | -12% | -12% | -17% |
| Current Price vs 3-Year Maximum | -51% | -25% | -28% | -33% | -37% | -48% | -36% | -39% | -43% | -50% |
| Current Price vs 3-Year Minimum | 0% | 5% | 9% | 9% | 9% | 0% | 0% | 0% | 0% | 0% |

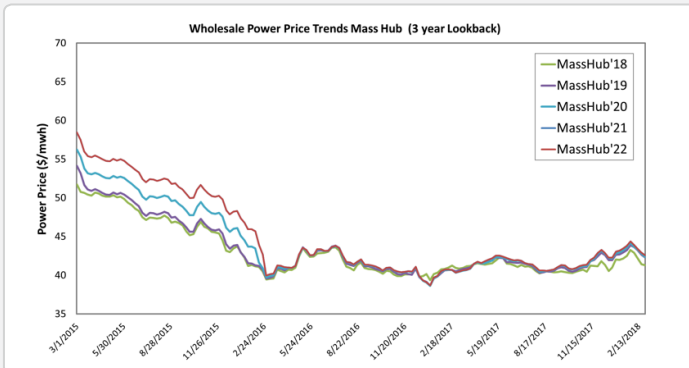
New York Zone A



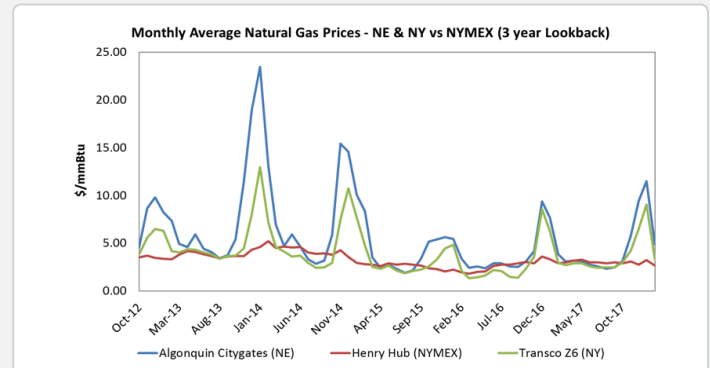
New York Zone J



Mass Hub



NE & NY v.s. NYMEX



Texas Electric Summary: Customer Takeaways

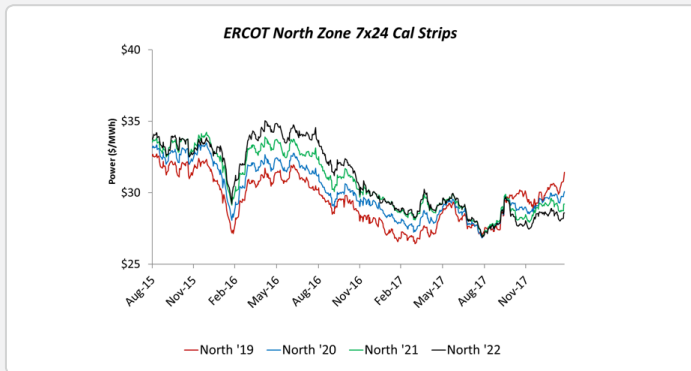


- Due to the reduced reserve margin of 9.3% for summer '18, ERCOT is seeing summer North Zone Jul/Aug ATC strips trading \$75/MWh, up ~\$20/MWh since January 1st.
- The concerns for a drought in the North Texas panhandle need to be monitored, as that region has gone 126 days without rain. Dry ground tends to result in less soil moisture cooling and higher temperatures.

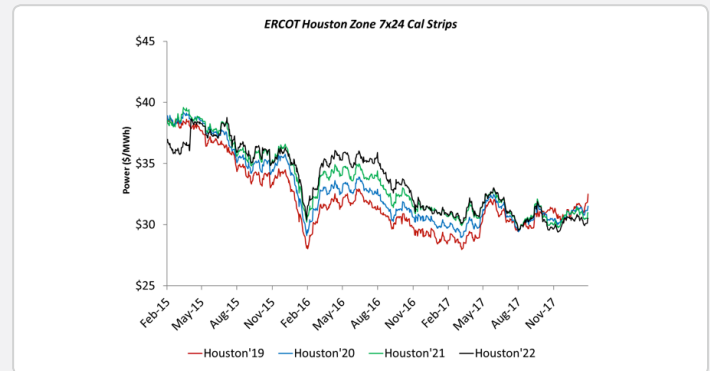
Texas Retail Power Price Trends

| % Change in Forward Power | Houston 2019-2020 | Houston 2021-2022 | North Zone 2019-2020 | North Zone 2021-2022 | South Zone 2019-2020 | South Zone 2021-2022 | West Zone 2019-2020 | West Zone 2021-2022 |
|---------------------------|-------------------|-------------------|----------------------|----------------------|----------------------|----------------------|---------------------|---------------------|
| Year-over-Year | 10% | 0% | 13% | -3% | 12% | 2% | 13% | -2% |
| Month-over-Month | 2% | 0% | 2% | 1% | 2% | 0% | 2% | 0% |
| Year-to-Date | 7% | -2% | 7% | -4% | 9% | -1% | 6% | -7% |
| Compared to All-Time Low | 13% | 4% | 16% | 7% | 14% | 5% | 18% | 10% |

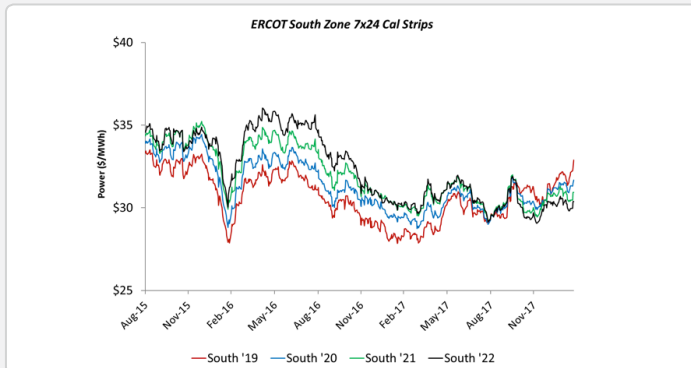
ERCOT North Zone



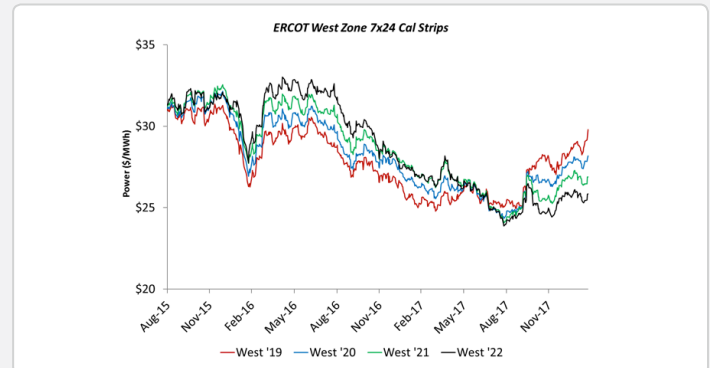
ERCOT Houston Zone



ERCOT South Zone



ERCOT West Zone



California Electric Summary: Customer Takeaways

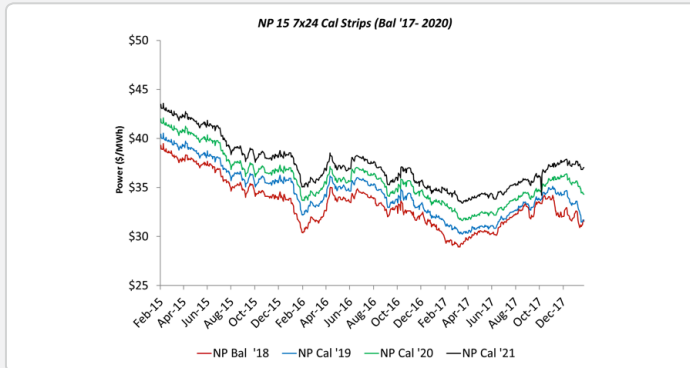


- Pac NW hydro snow water equivalent is strong in WA at 90% but OR is much drier at 35%-65% while CA is at 20%-30% of normal.
- Below-normal temperatures in late February stressed the SoCal gas system, pushing demand to over +4 Bcf/d of demand and triggering Operational Flow Orders (OFO) that sent next day gas to \$26/MMBtu, a record high.

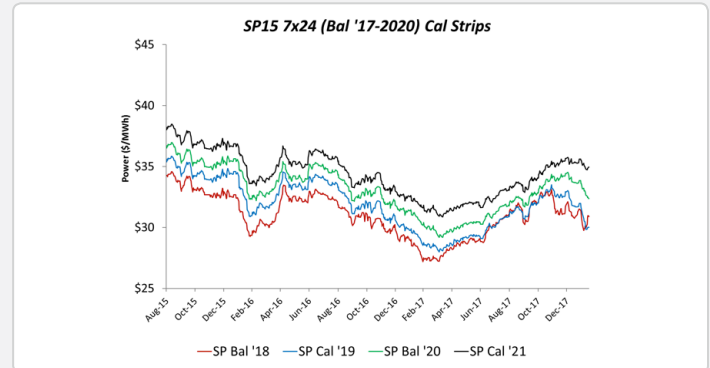
California Retail Power Price Trends

| % Change in Forward Power | NP Cal 2018 | NP Cal 2019 | NP Cal 2020 | NP Cal 2021 | SP Bal 2018 | SP Cal 2019 | SP Bal 2020 | SP Cal 2021 | Mid Cal 2019 | Mid Cal 2020 | Mid Cal 2021 |
|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|
| Year-over-Year | 6% | 0% | 3% | 6% | 12% | 4% | 7% | 11% | -12% | -10% | -4% |
| Month-over-Month | -1% | -5% | -3% | -1% | 1% | -5% | -3% | 0% | -5% | -3% | 1% |
| Year-to-Date | 0% | -3% | 1% | 6% | 6% | -1% | 3% | 7% | -20% | -16% | -9% |
| Compared to All-Time Low | 10% | 4% | 8% | 11% | 15% | 8% | 12% | 14% | 2% | 1% | 3% |

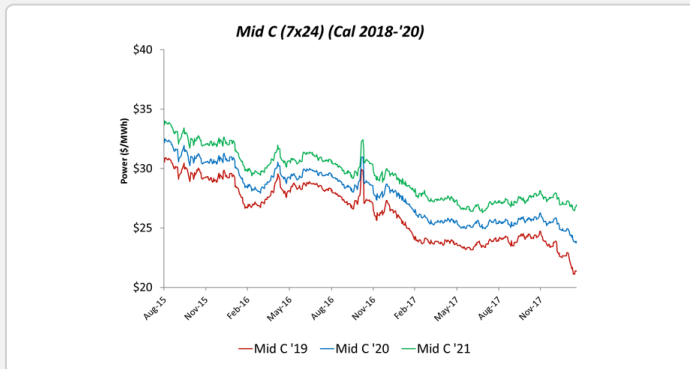
NP 15 7x24



SP 15 7x24



Mid C 7x24



© 2018 Constellation Energy Resources, LLC. The offerings described herein are those of Constellation NewEnergy-Gas Division, LLC or Constellation NewEnergy, Inc., affiliates of each other and ultimate subsidiaries of Exelon Corporation. Brand names and product names are trademarks or service marks of their respective holders. All rights reserved. Errors and omissions excepted.

The information contained herein has been obtained from sources which Constellation NewEnergy, Inc Constellation NewEnergy-Gas Division, LLC (collectively, "Constellation") believes to be reliable. Constellation does not represent or warrant as to its accuracy or completeness. All representations and estimates included herein constitute Constellation's judgment as of the date of the presentation and may be subject to change without notice. This material has been prepared solely for informational purposes relating to our business as a physical energy provider. We are not providing advice regarding the value or advisability of trading in "commodity interests" as defined in the Commodity Exchange Act, 7 U.S.C. §§ 1-25, et seq., as amended (the "CEA"), including futures contracts, swaps or any other activity which would cause us or any of our affiliates to be considered a commodity trading advisor under the CEA. Constellation does not make and expressly disclaims, any express or implied guaranty, representation or warranty regarding any opinions or statements set forth herein. Constellation shall not be responsible for any reliance upon any information, opinions, or statements contained herein or for any omission or error of fact. All prices referenced herein are indicative and informational and do not connote the prices at which Constellation may be willing to transact, and the possible performance results of any product discussed herein are not necessarily indicative of future results. This material shall not be reproduced (in whole or in part) to any other person without the prior written approval of Constellation.

