eMarket Update

Weekly Energy Industry Information

Week Ending May 1, 2020

COMMODITY FUNDAMENTALS

BY THE NUMBERS

NG June '20 futures contract closed at **$1.890//MMBtu**
WTI June '20 futures contract closed at **$19.78/bbl**
Coal June '20 contract closed at **$33.50/ton**

Natural Gas - Neutral/Bearish

- Prompt-month natural gas was trading at $1.97 per MMbtu, up $.05 per MMbtu in the pre-open this morning.
- Baker Hughes reported the natural gas rig count at 81 units, down four units from the prior week.
- 81 gas-directed rigs matches the all-time low set in 2016.
- The May, 2020 NYMEX natural gas futures contract expired at $1.794 per MMBTU last Tuesday, down $.15 per MMbtu from the prior week.

Crude Oil - Bearish

- West Texas Intermediate (WTI) crude oil was trading at $19.55 per barrel, down $.24 per bbl before trading opened this Monday, May 4.
- Global crude oil demand remains depressed, however, China and several parts of Asia are opening their economies along with the U.S. and several Eurozone countries.

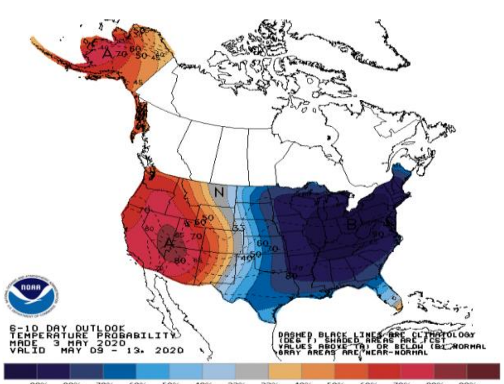
Economy - Bearish

- 30 million Americans are unemployed. Tensions are growing in several states as workers and small business owners protest to re-open various economies.
- Equities markets were largely flat last week but have opened down modestly this morning. The Dow Jones Industrial pre-market was trading 23,723, down about 200 points.

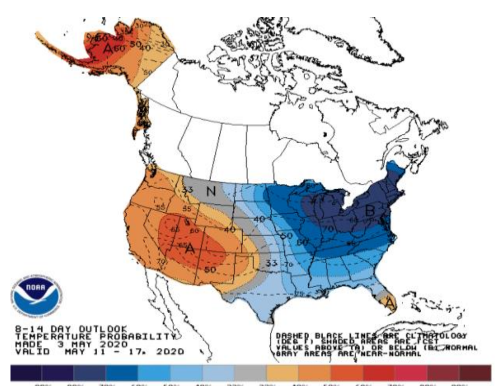
Weather - Neutral

- The weather pattern has been cooler in the eastern half of the country and warmer in the west.
- The month of April will likely come in as one of the cooler Aprils during the past 25 years and some amount of heating load was required, particularly in the Great Lakes region.

6-10-Day Outlook
May 9th-13th



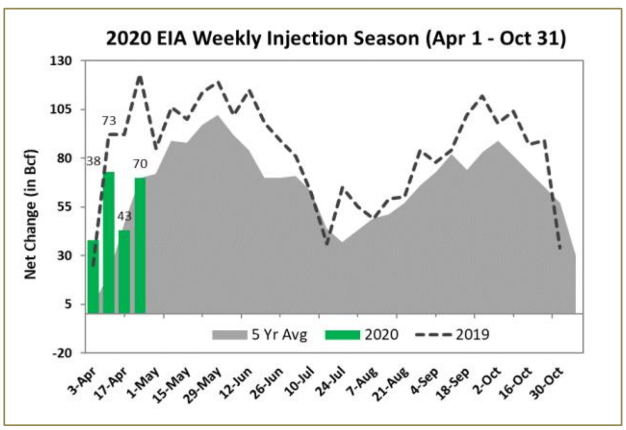
8-14-Day Outlook
May 11th - 17th

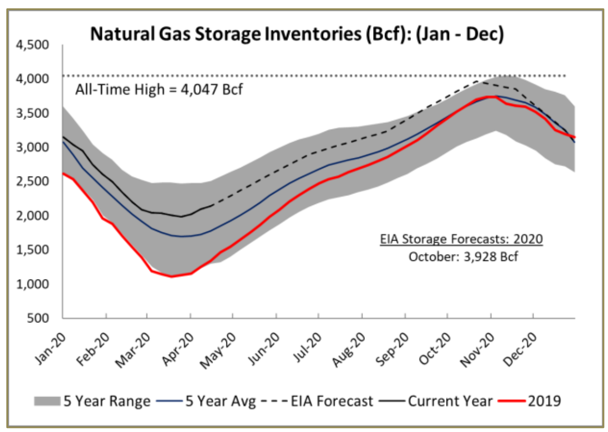


Weekly Natural Gas Report:

- The Energy Information Administration (EIA) reported an injection into natural gas storage of 70 Bcf for the week ending April 24. Inventories are 2,210 Bcf, 55% more than a year ago and 19% more than the five-year average. According to OilPrice.com, Baker Hughes reported the natural gas directed rig count at 81 units, equal to its all time low. The natural gas plant liquids composite price at Mont Belvieu, Texas, rose by 7 cents per MMbtu, averaging $3.09 per MMbtu for the week ending April 29.

- Coronavirus update - Unemployment claims reached 30 million last week. The U.S. workforce is approximately 160 million. The retail sector has been among those hardest hit; for example, J Crew filed for bankruptcy last week. President Trump invoked federal powers ordering the meat-packing industry to remain open amidst a series of shutdowns in that industry related to elevated rates of infection among meat-packing workers. Various states began to open last week and have plans to open this week. Georgia opened all busineses with various social distancing and health guidelines in place. Florida is opening much of its economy this week with parks and beaches set to open. Most states have cancelled public schools for the remainder of the year. Protests are mounting in Michigan, California, Maine and other states as people are anxious to return to work. The stock market opened down to start trading for this week with airlines taking the biggest hit as Warren Buffet announced, at his annual shareholders meeting, that he had divested all of his airline holdings saying the industry was "fundamentally changed," in the wake of coronavirus.





Source: EIA, WSJ (Factset)

Natural Gas Rig Count	Week Ending 5/1
This Week:	81
Last Week:	85
Change:	(4)
Year Ago:	183

Natural Gas Storage	Week Ending 4/24
Current Week Stocks (Bcf)	2,210
Previous Week Stocks (Bcf)	2,140
Implied Net Change W-o-W (Bcf)	+70
Year-Ago Stocks (Bcf)	1,427
5-Year Average (Bcf)	1,850
Difference from 5-Year Avg (%)	+19.5%

Natural Gas Supply & Demand	Week Ending 4/29
Dry Natural Gas Production (% ∆ y/y)	3.9%
Gas Demand for Power Gen (% ∆ y/y)	-2.0%

Physical Cash Prices	Week Ending		5/1
Commodity	Price	W-o-W ∆	$/MMBtu
Natural Gas ($/MMBtu)	$1.65	($0.10)	$1.65
Propane ($/gal)	$0.33	($0.01)	$3.61
CAPP Coal ($/ton)	$55.20	$0.00	$3.76
PRB Coal ($/ton)	$11.55	$0.00	$2.24
No. 2 Fuel Oil ($/bbl)	$19.98	$2.81	$3.18

NYMEX Futures Pricing ($/MMBtu)	This Week 1-May-20	Last Week 24-Apr-20	W-o-W ∆
NYMEX Prompt	$1.89	$1.75	$0.14
NYMEX 12-Month Strip	$2.52	$2.48	$0.04
Balance 2021	$2.51	$2.50	$0.02
Winter (Nov '20-Mar '21)	$3.04	$2.96	$0.08
Summer 2021 (Apr-Oct)	$2.37	$2.26	$0.11
Calendar 2022	$2.64	$2.60	$0.04
Calendar 2023	$2.74	$2.70	$0.04

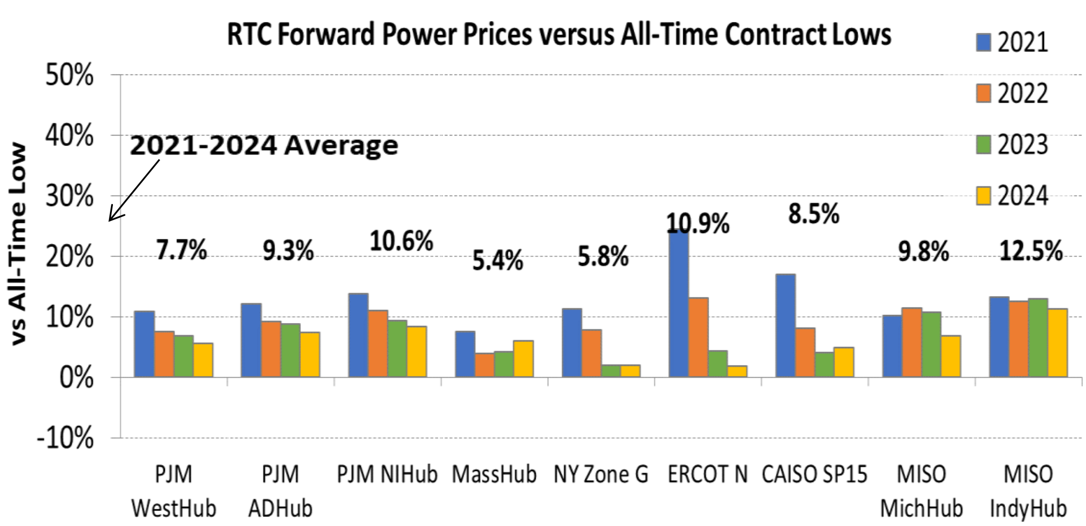
Weekly Power Report:

Power - Neutral

- Forward strips for '21 - '24 ticked higher across most deregulated regions week-over-week. Cal '21 is up an average of 6.5% across all regions month-over-month; Cal '22 is up ~3.5% this month.

Week Ending	5/1/2020	RTC Day-Ahead Index Prices ($/MWh)			RTC Forward Calendar Strip Prices[1] ($/MWh)			
Electric Hub	ISO	Min	Max	Avg	2021	2022	2023	2024
Indiana Hub	MISO	$14.96	$24.11	$19.71	$30.59	$29.94	$30.01	$30.15
Michigan Hub	MISO	$15.29	$28.65	$21.91	$30.84	$30.39	$30.46	$30.70
PJM West Hub	PJM	$11.80	$207.90	$20.47	$30.74	$29.39	$29.09	$29.26
AEP-Dayton Hub	PJM	$10.90	$190.70	$19.59	$30.10	$28.64	$28.24	$28.16
N. Illinois Hub	PJM	($40.50)	$141.90	$10.76	$26.48	$25.10	$24.70	$24.57
Mass Hub	ISO-NE	$12.04	$29.81	$17.69	$36.52	$36.52	$39.51	$41.37
NYZ J	NYISO	$10.76	$23.50	$16.19	$34.69	$34.95	$37.75	$37.85
ERCOT N [2]	ERCOT	($5.87)	$1,001.17	$23.61	$33.03	$30.12	$28.06	$26.75
SP15	CAISO	($10.07)	$54.00	$17.56	$36.90	$36.03	$35.73	$35.60

[1] These prices are an indicative, non-transactable snapshot of the wholesale market as of close of business on Friday of the report week. Actual price on contract is contingent upon customer's load, product and market prices at time of execution. [2] ERCOT index prices are from Real-Time market.

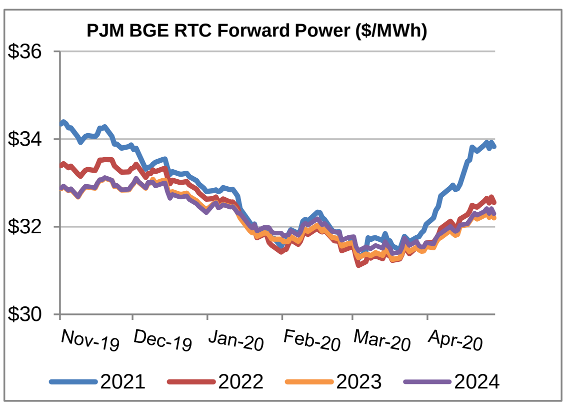


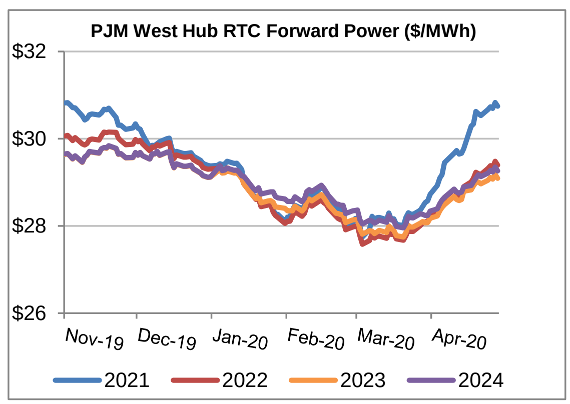
*Note: **0% implies forward prices are currently trading at all-time, life-of-contract lows**. All prices are indicative wholesale marks.*

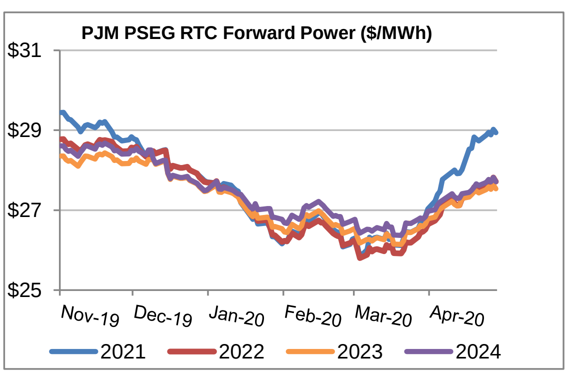
Mid-Atlantic Energy Summary

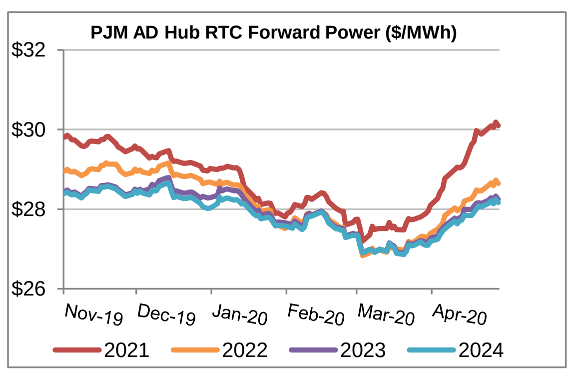
- The Mid-Atlantic Region's forward power prices have leveled-off a bit this week after a steady week-over-week increase since Mid-March. The market continues to weigh the economic impact that COVID-19 is having on demand, while at the same time weighing the impact that a steady decline in oil and gas rigs might have going forward. Those supply expectations have provided consistent price support for forward gas and power prices up to this point, over that past two months. Forward power prices in eastern PJM through 2025 were relatively unchanged this past week but are still up about 4%, on average, over the past month. The calendar 2021 strip has seen the largest increase month-over-month at 7%, while 2025 has increased only 3%. Increases above the all-time lows continue to creep up as well with 2021 posting a price that is 11% off the low for that contract year, while 2025 is still about 4% higher than its low. Day-ahead index power prices in PJM were down 33% and load was lower by 8% year-over-year for the month of April. Month-over-month index power prices also dropped 8% from March to April of this year, while the load dropped as well, by 11% for that same period.

- Pennsylvania's Department of Environmental Protection (DEP) recently released their findings in which they claim that the state would see significant drops in harmful emissions if it goes ahead with plans to join the Regional Greenhouse Gas Initiative (RGGI). Based on existing models, the state is expected to an emissions decline without joining RGGI, but it the emission caps were put in place as a part of the initiative, the DEP claims that it would lead to an immediate emissions drop in 2022 and that it would help avoid an additional 180 million tons of carbon dioxide emissions from 2022 to 2030. Per an executive order by PA Governor Tom Wolfe back in October 2019, the wheels to join RGGI were put in motion to limit carbon emissions from power generators in the state. If the initiative was to gain approval, PA would join 10 other Northeast and Mid-Atlantic states that are currently under the program's guidelines. The DEP expects to draft a regulation by July and open it up for comments by September. If the regulation is approved, PA could join RGGI by 2022. The validity of the executive order is currently being challenged by some lawmakers in the state but also has gained support as well at this time.





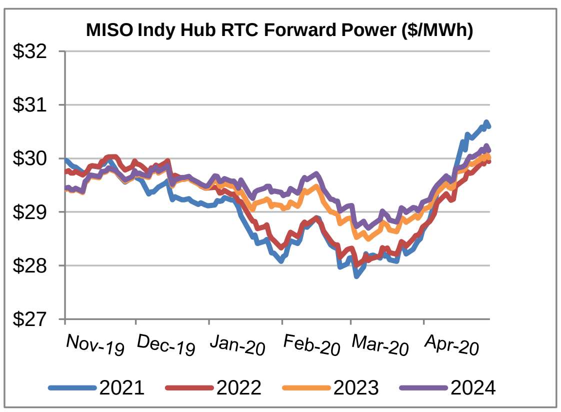


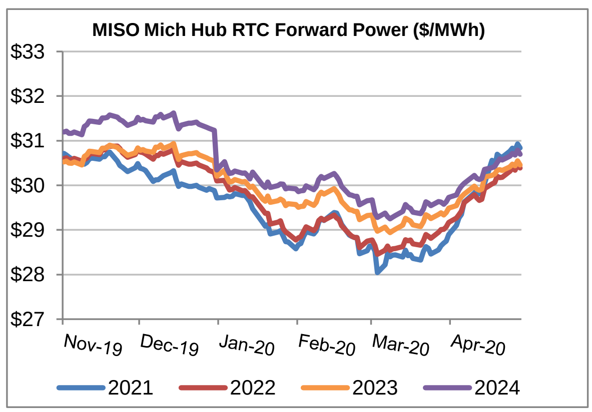


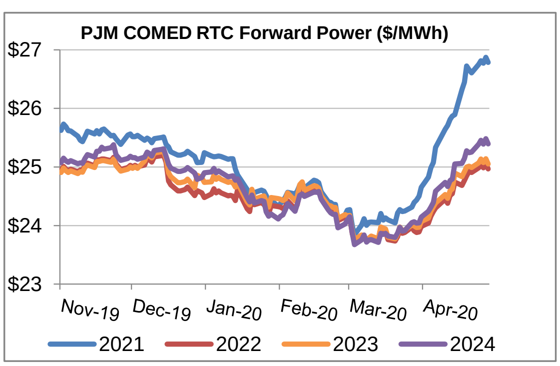
Great Lakes Electric Summary

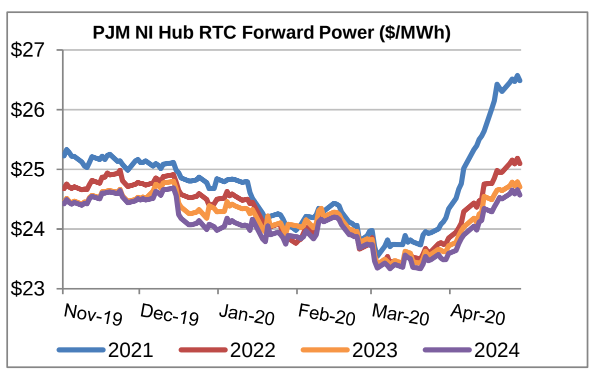
- The Great Lake Region's forward power prices have leveled off a bit this week after a steady week-over-week increase since Mid-March. The market continues to weigh the economic impact that COVID-19 is having on demand, while at the same time weighing the impact that a steady decline in oil and gas rigs might have going forward. Those supply expectations have provided consistent price support for forward gas and power prices up to this point, over the past two months. Forward power prices in the Midwest through 2025 were relatively unchanged this past week, with the exception of calendar years 2021 and 2022, which were up 1%. Over the past month, prices throughout the forward price curve were higher by 3%, on average. The calendar 2021 strip has seen the largest increase month-over-month at 5%, while 2025 has increased only 2%. Increases above the all-time lows continue to creep up as well, with 2021 posting a price that is 12% off the low for that contract year, while 2025 is still about 7% higher than its low. Day-ahead index power prices in MISO were down 28% and load was lower by 9% year-over-year for the month of April. Month-over-month index power prices dropped 5% from March to April of this year as the load dropped as well, by 10% for that same period.

- According to S&P Global Platts Analytics, global carbon dioxide emissions are set to reach the lowest level in history, due to the demand destruction attributable to the COVID-19 pandemic. Global lockdowns are expected to continue to impact daily demand for oil, coal and natural gas across all sectors throughout 2020. Combined, the decrease in demand will represent the equivalent of 13 million barrels of oil per day with oil accounting for 8.5 million, coal for 3.6 million and natural gas for 1.1 million. The result of this significant drop in fossil fuel demand will be a decrease of CO2 emissions of 5.5% or the equivalent of 1,850 billion metric tons this year. The largest reduction will occur in the transportation sector, accounting for over 50% of the drop at 850 million metric tons, followed by power generation in second with a 550 million metric ton drop. From a percent standpoint, the 5.5% drop seems significantly less than the 25% decrease during the Great Depression or the 20% drop after WWII, but in total volumetric terms, it is by far the largest reduction ever witnessed in history.





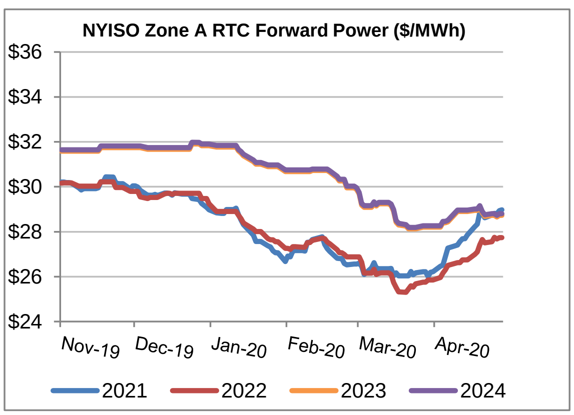


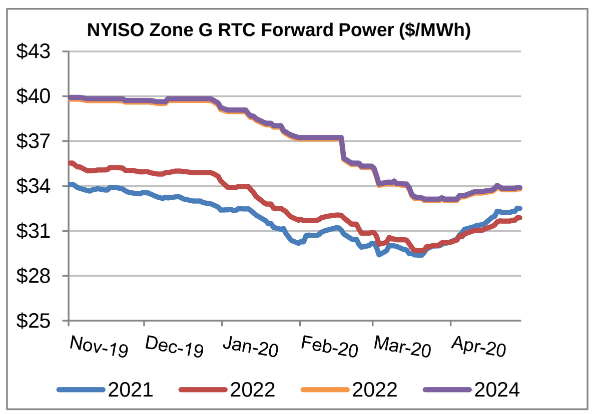


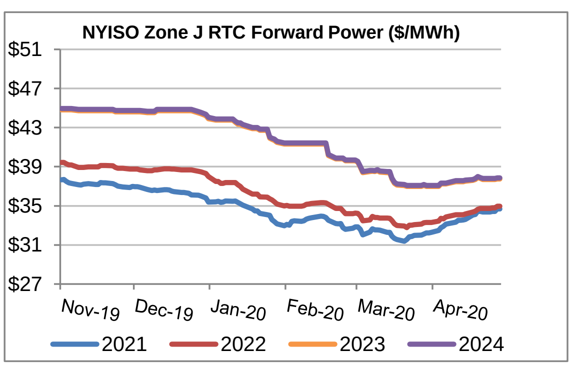
Northeast Energy Summary

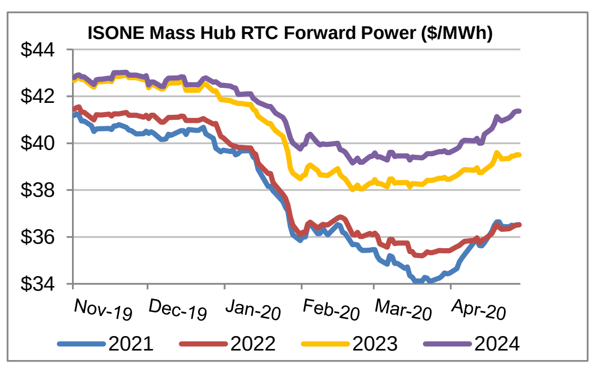
- On April 30, grid operator ISO New England published its 2020 -2029 CELT (Capacity, Energy Loads, and Transmission) Report which is used for system planning, reliability studies and to forecast energy for the region. Some key findings was gross electricity use is expected to grow by 1.4% annually over a 10-year period while net usage will result in only a 0.4% increase. This summer's net peak forecast is set at 25,125 MW; subsequent years come in at 24,981 MW, 24,861 MW, 24,783 MW and 24,703 MW. Those waiting for the day where enough behind-the-meter solar photovoltaic will significantly tighten the spread between the summer and winter peaks won't see much progress in the next five years as that spread is expected to average 4,871 MW, although it does decrease minimally further out. Those winter peak for the next five years will average 20,020 MW.

- On Friday May 1, the ISO New England posted information regarding the FCA15 (Power Year 2024/2025) Competitive Auction for Sponsored Resources (CASPR) aka Substitution Auction (SA). The takeaways from this information was that the reported SA demand bid amount of 199 MW was the exact same amount as the retirement delist bids declared in March, meaning no additional resources intend to retire and the total amount will be capped at that 199 MW for FCA15. Also interesting was the SA supply offers of 2,343 MW were ~600 MW lower than the previous SA auction meaning there were 600 MW less of renewable/state-sponsored resources for the capacity year looking for capacity supply obligations. Although there are a number of potential reasons for the decrease in offers, the overall picture and decrease will continue to bolster arguments that this CASPR structure and the ISO-NE capacity market as a whole is "anti-renewable" and not compatible with New England state energy policies.







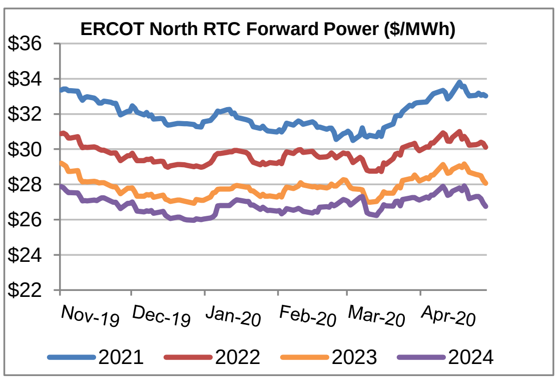


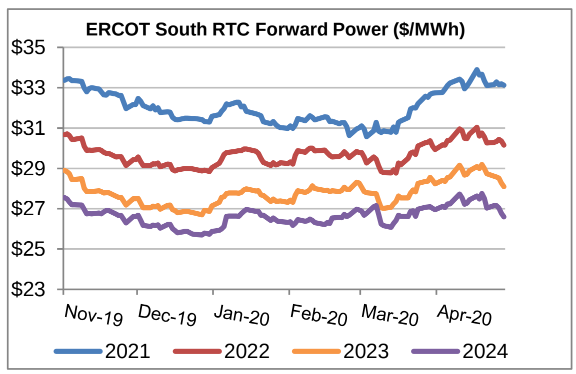
Texas Energy Summary

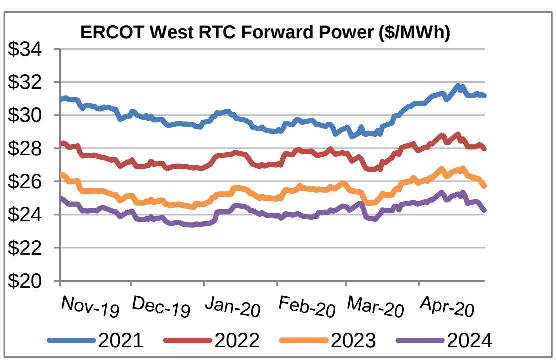
- ERCOT temperatures ranged from the mid to upper 80s F for the week ending May 1st, but Dallas will be reaching 94 F on May 4th. Temperatures will cool off to the mid 80s for the rest of the week. Locational marginal pricing (LMP) averaged $17.54/MWh for the week ending May 2. ERCOT load will peak on May 4th at just over 63 GW, a bump of ~20% and then pull back into the 50 GW range for the rest of the week. The Baker Hughes oil rig count fell to 408 while gas rigs were 81, their lowest level since 2016. here were 186 gas rigs same week a year ago.

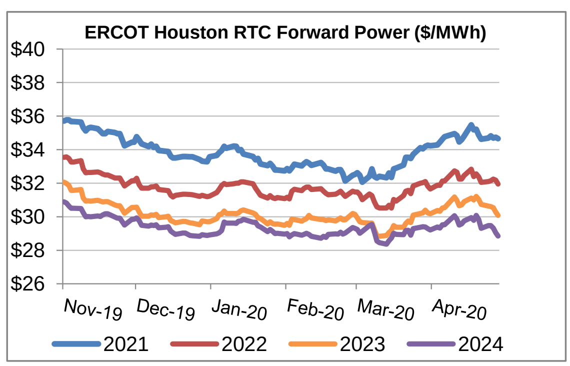
- ERCOT released a COVID-19 Load Impact Analysis update for update a weekly assessment for the week April 19-April 26, and key findings show load degregation increasing with daily peaks have been lower by ~4-5% along with weekly energy use is lower by 4%-5%. The biggest load drop remains in morning hours of 6-10 a.m. as schools, office buildings and some factories remain closed, and load is lower in those hours by 6-10%. The exception was Apri 26, which was the warmest day of the week and higher levels of residential AC cooling load lifted overall ERCOT loads. This is an important fact to remember as we approach summer 2020.

- ERCOT on-peak (5x16) July & August summer strips for 2020 are trading $105-$110/Mwh range of late after being $150/MWh in early March. The market is awaiting ERCOT's release next week of the biannual May Capacity Demand and Reserve (CDR) report, which in December had the reserve margin for summer 2020 at 10.7%. Due to the economic downturn and oil rigs at lowest level since 2016, the reserve margin is expected to be the recommended reserve margin per NERC of 13.75%. This does not minimize summer risk as April demonstrated when some much-above normal temperatures in the mid 90s F boosted load and tighted reserve margin as plants were down for seasonal outages. To learn more, please click to register for the ERCOT Summer Outlook webinar on May 13th.









California Energy Summary

- According to a CAISO presentation last week, weekday morning peak demand is down 7% v. 6.5% for the evening peaks. Overall demand during weekdays is down 4.5% with little change for the weekends. After declining to these levels in early April after a few weeks of shutdown, there has been minimal change to the pattern. This past weekend saw a break in the summer weather bring temperatures down to very comfortable levels cutting into power demand, while wind and solar output cranked up, meaning net load hitting the grid only made it to about 12,000 MW on Sunday. Day-ahead index for Sunday's peak period averaged all of $7.50/MWh in NP15 but SP15 couldn't even make it to $5. As temperatures across the Southland drift back towards summertime-levels this week and "business" load returns mid-week, we expect day-ahead index for the peak periods to start clearing in the $20s again.

- Officials with California Department of Water Resources (CWDR) conducted their final snow survey last week recording just 1.5 inches of snow depth at Phillips Station – or 3% of the May average. Electronic snowpack sensors scattered elsewhere in the hills recorded better but still lackluster numbers. CDWR reports statewide snowpack is only 37% of the average. The latest U.S. Drought Monitor indicates SoCal picked up a little moisture over the past month while NorCal continues to be painted with moderate to sever drought. Not a great setup as the state makes the transition from shoulder month to summer month and heads towards the heart of fire season in September and October. CalFire has made the decision to open up all fire stations a little early this year with at least one engine per fire station effective May 18th. Living off the water largess of the past however, hydro generation may fare OK as the state's six largest reservoirs are holding onto between 83 and 126% of their historical levels. In the Pacific Northwest, forecasted water runoff at the Dalles Dam on the Columbia River in Oregon is listed as 97% of normal for April-September by the Northwest River Forecast Center on Friday. The Dalles is the next-to-last dam on the Columbia River and a key point for measuring water available for power generation in the PNW which receives about 65% of its electricity from hydroelectric generation.

- SoCalGas's recently released summer technical assessment indicates its storage fields could hit maximum capacity as early as August. Considering demand loss due to the bug and some mild improvements in pipeline receipt capacity year over year, storage inventories will be capable of filling to their full capacity of 84.4 Bcf by August. SoCal Gas inventories entered the summer injection season with approximately 52 Bcf in the ground, a year-over-year surplus of approximately 13 Bcf. Healthy storage levels and the operational protocols that eased withdrawal restrictions at Aliso Canyon this winter should also tame the frequency and magnitude of single-day price blowouts this summer.