Energy Risk Report

Procurement recommendations for commercial, industrial and institutional electricity users

SEPTEMBER 2019

NYISO

EBW Analytics Group
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EBWAnalytics.com

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More behind-the-meter solar & energy efficiency to be offset by rising temperatures.

OUR PROJECTIONS AND RECOMMENDATIONS

Time Period	EBW* Recommendation	Price ($/MWh)				
		09/27/2019	Trend Past Month	Trend Since January	12-Month Range	Year-Ago Actual Price
Bal Cal 2019	Buy	$30.90	-$1.30	-$7.10	$31.4-$40.23	$34.18
Cal 2020	Portfolio	$35.94	$0.13	-$4.52	$34.28-$42.44	$39.22
Cal 2021	Portfolio	$36.42	$0.01	-$6.86	$35.33-$46.68	—

** See Glossary on last page*

Downstate Peaker-to-Storage Efforts Intensify

NYISO wholesale power futures trading diverged in September, with later-dated portions of the forward curve strengthening. Balance of Cal 2019 futures at NYISO Zone J dipped $0.02/MWh (-0.3%), with relatively bearish fall weather forecasts pulling the strip lower. Later-dated deliveries fared better, with Cal 2020 adding $0.58/MWh (0.9%) and Cal 2021 up $0.25/MWh (0.3%).

Upward pressure on the natural gas forward curve factored heavily into the strengthening power market outlook. Balance of Cal 2019 contracts at TETCO M3 surged $0.28/MMBtu (10.3%) relative to late August, while Cal 2020 gained $0.23/MMBtu (6.0%) and Cal 2021 added $0.16/MMBtu (4.4%) over the same stretch. Bullish forecast shifts nationally and accompanying technical momentum led to a late-summer gas price rebound, pushing expected marginal generator fuel costs and driving the wholesale power forward curve higher.

The New York Public Service Commission (PSC) is holding hearings on the first wave of energy storage projects to replace downstate peaker capacity. 1 The 316 MW multi-phase project will be sited at the current Ravenswood generating facility and may ultimately replace 16 downstate peaker units. The project developer hopes to have phase 1—a 130 MW battery array—completed by March 2021, with phases 2 and 3 soon after. The project is likely to be approved, as New York regulators are aiming for 3,000 MW of energy storage capacity and are particularly interested in replacing aging downstate peaker plants with batteries.

Initial energy storage procurements like Ravenswood are likely to be more expensive than existing peaking capacity, adding to end user total energy costs. If energy storage system costs decline sharply, however, batteries may eventually become a cost-effective replacement for gas capacity and allow higher penetration of low cost renewables—significantly reducing end user total energy spending.

NYISO anticipates rising demand due to hotter weather 2 **over the next several decades.** Average annual average temperatures in New York have increased by nearly

Key Takeaways

1 Regulators hold hearing on massive Ravenswood battery storage project.
The 316 MW battery array would replace 16 peaking units at the Ravenswood plant site.

2 Rising temperatures to boost cooling load, peak demand.
NYISO demand likely to remain flat as increases balanced by solar, energy efficiency investments.

3 Transmission developer clears financing hurdle.
The Public Service Commission's decision cleared an important obstacle for the multi-phase grid upgrade.

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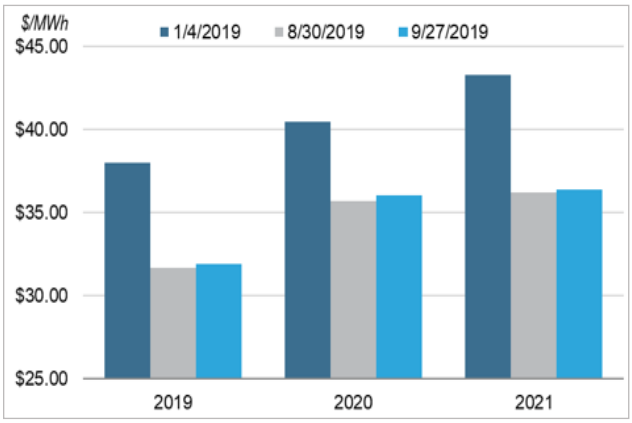
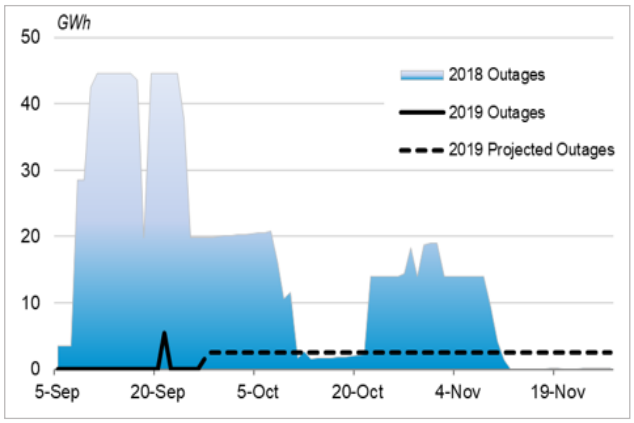
NYISO Hudson Valley Zone Day-Ahead Peak Futures, 2019, 2020, and 2021 ($/MWh)



Source: EBW AnalyticsGroup, Bloomberg

Lost Daily Generation (GWh) from Nuclear Outages in NYISO, 2018 and 2019



Source: Bloomberg

one-degree Fahrenheit per decade since 1992 and will continue to do so through at least 2050, according to consultancy Itron. If the warming trend holds, the group projects a 26.3% surge in 2050 annual cooling demand relative to a no-warming scenario.

By mid-century, systemwide peak demand could also increase by more than 3.0 GW versus a normal weather outcome.

Even after factoring in the additional weather-driven demand, NYISO still projects essentially flat long-term loads due to aggressive behind-the-meter solar and energy efficiency investments. Nonetheless, end users will likely miss an opportunity for even greater savings, illustrating one of the costs of adapting to climate change.

The New York PSC approved a $400 million debt offering 3 to support new transmission investments. The decision cleared an important financing hurdle for project developer NY Transco, a consortium of New York transmission companies. Developers intend to complete phase one of the project, a new 54-mile North-South line through the Hudson Valley, by the end of 2023.

NY Transco's multi-phase project is part of a broader investment initiative to alleviate transmission congestion, improve grid reliability and connect the coming tidal wave of upstate renewable output to downstate load centers. Consumers will end up footing the bill for the transmission build out, but the net benefits are likely to easily exceed the upfront cost.

We recommend end users prepare to hedge outstanding exposure through winter 2019-20 and utilize a portfolio approach for later-dated obligations. Falling natural gas prices are likely to reduce power prices this fall, opening a favorable end user procurement opportunity for any remaining winter requirements.

More risk-adverse end users may opt instead to lock in current valuations to avoid growing weather-induced pricing risks as the heating season arrives.

A portfolio approach for later-dated obligations allows end users to begin locking in some recent advantageous price developments.

At the same time, a portfolio approach will allow end users to maintain the flexibility to capitalize on additional potential savings driven by projected near-term declines in weather-driven demand and longer-term tailwinds like surging renewable output.■

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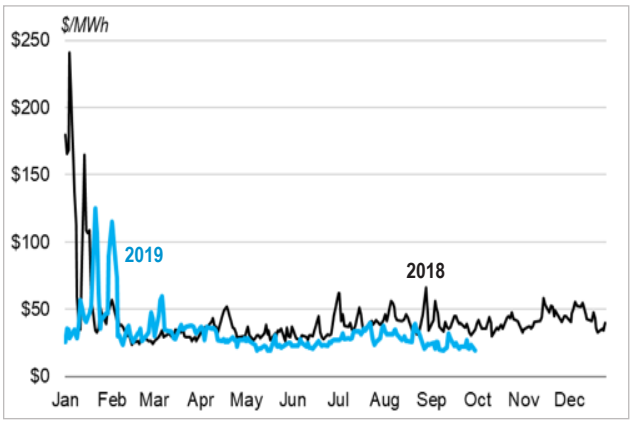
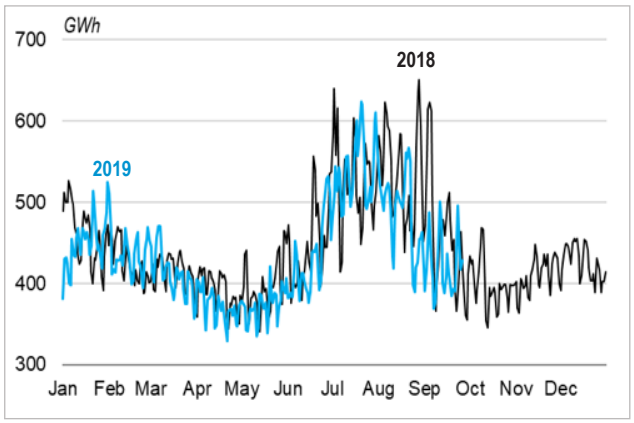
NYISO Hudson Valley Zone Hub Day-Ahead Peak Electricity Price, 2019 vs 2018 ($/MWh)



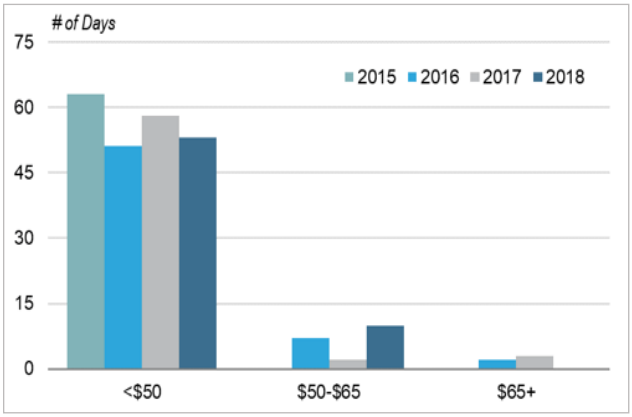
Source: Bloomberg

NYISO Daily Generation, 2019 vs 2018 (GWh)



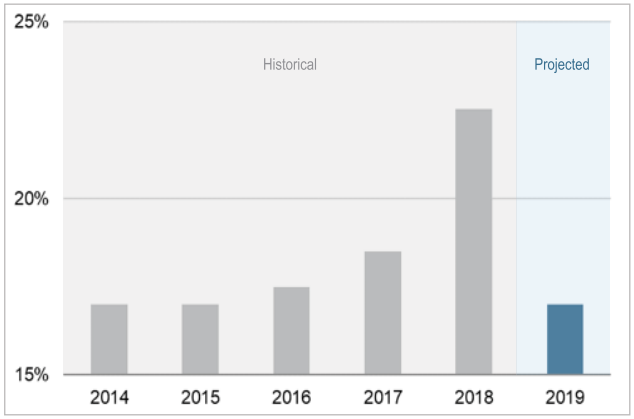
Source: EBW AnalyticsGroup

NYISO Zone G Daily High and Scarcity Prices ($/MWh), Number of Days in October–December, 2015–2018



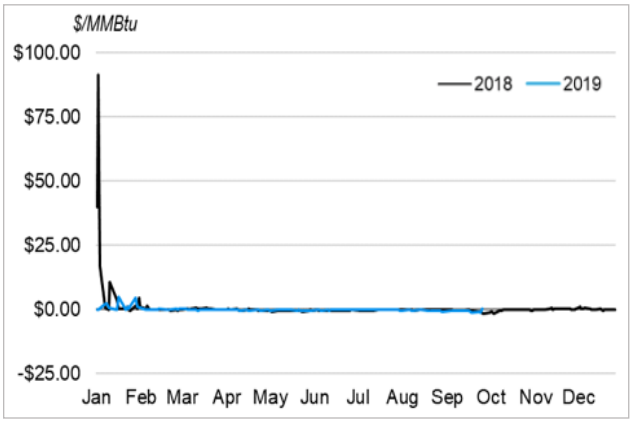
Source: EBW AnalyticsGroup, Bloomberg

NYISO Historical and Projected Reserve Margins, 2014–2019



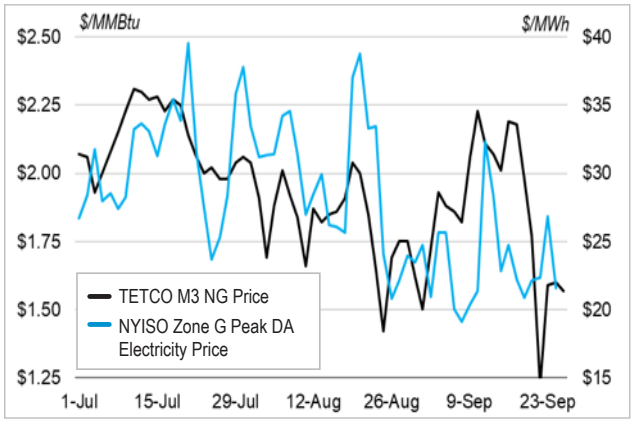
Source: NYISO, NERC

TETCO M3 Natural Gas Hub Basis Differential, 2018 vs 2019 ($/MMBtu)



Source: Bloomberg

NYISO Electricity and Natural Gas Prices



Source: EBW AnalyticsGroup, Bloomberg

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Glossary: Our recommendations are made for a hypothetical commercial or industrial end user that consumes large amounts of electricity. With that in mind, end users must decide the timing to cover their electricity requirements.

"Wait" means that in our view prices are elevated and end users can get a better value by waiting for prices to fall.

"Buy" means that in our view prices are cheap relative to their true value, and end users are better served to buy now before prices rise.

"Portfolio" is more of a middle ground reflecting more balanced upside and downside risks. By taking a portfolio approach to procurement, end users cover a portion of requirements regularly to reduce upside risk exposure, but still retain downside potential should prices fall. In this light, a portfolio approach to procurement could be considered a cousin of dollar–cost averaging.

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