Winter Fuels and Gas Electric Coordination Review

Brian Fitzpatrick
Sr. Lead Fuel Supply Analyst
Operating Committee
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Fuel Markets Review

- Natural Gas
- Coal
- Distillate Fuel Oil

Gas Electric Coordination

Fuel Markets Review

Natural Gas

- Production rates are strong
- Storage inventory improving
- Demand relatively steady
- Prices up 200% to 300% compared to last year; Very sensitive to weather model forecasts

Coal

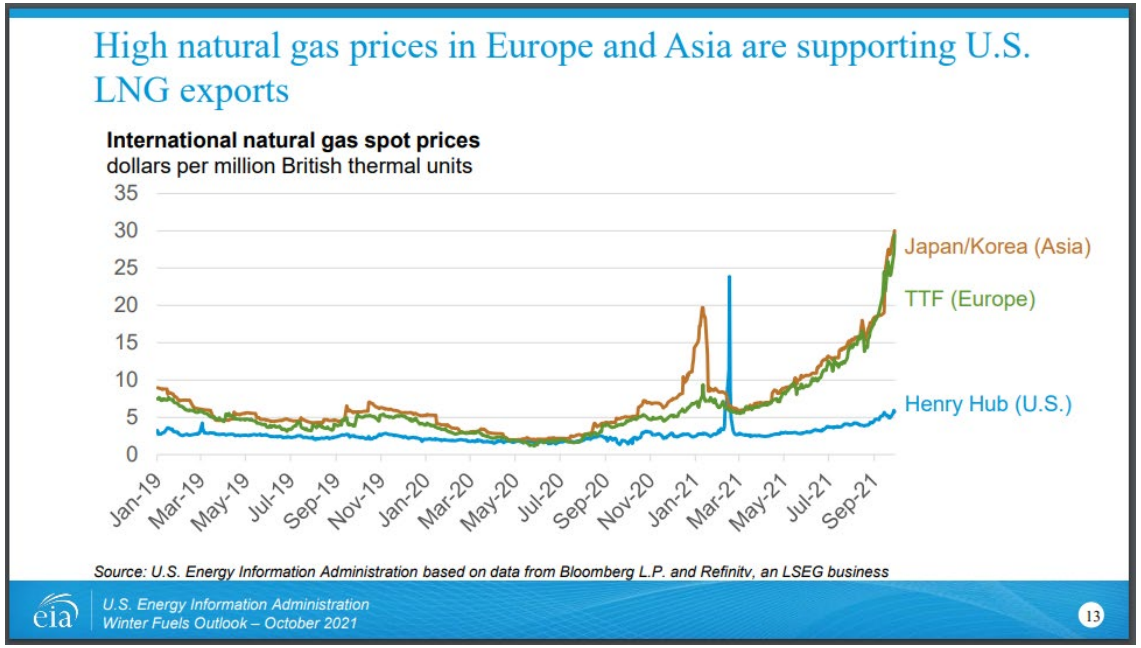
- US inventory down 30% compared to last year
- Production fairly consistent with last year
- Transportation constraints are a critical focus area

Distillate Fuel Oil

- PADD 1 (East coast) inventory at lower edge of 5 year average
- Production is anticipated to remain strong

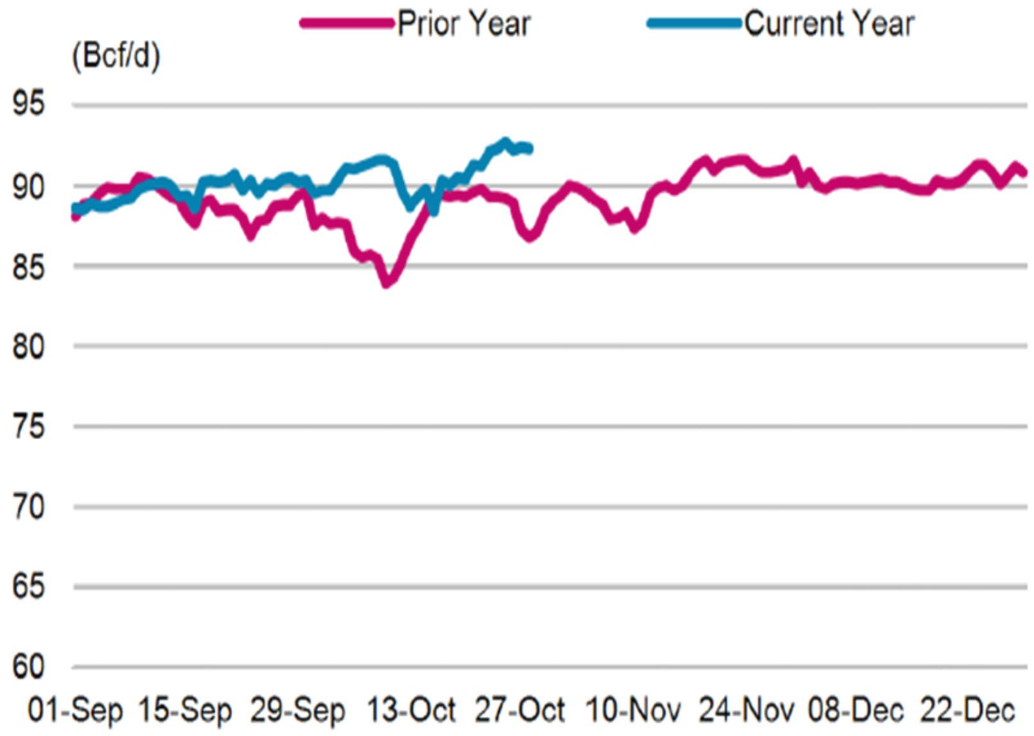
Global Energy Market – Europe and Asia

- Record low inventories of coal and natural gas in Europe and Asia
  - Some coal stations have experienced intermittent outages due to lack of coal
- High demand for LNG and coal imports
  - Spot LNG prices recently surpassed the record of $30/mmbtu and briefly eclipsing the $50/mmbtu mark
  - Could reduce LNG supply to New England generators thus increasing natural gas and oil utilization across the northeast
  - LNG exports forecast to average around 11 BCF/day this winter



Natural Gas Production

US DRY GAS PRODUCTION



Natural Gas Supply Association

Supply: Winter Production and Imports

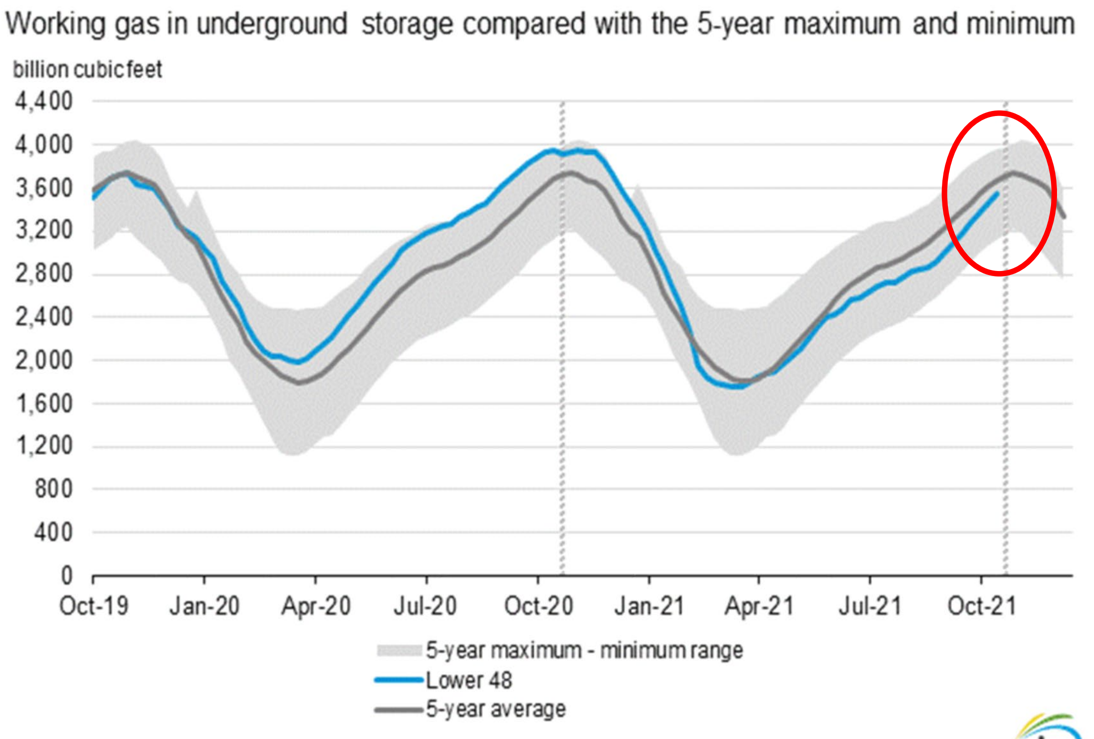
Winter Season Period-to-period change	Last Winter 2020-2021 ACTUAL	This Winter 2021-2022 FORECAST	3-YEAR WINTER AVERAGE
Winter average production (Lower 48)	89.9 Bcf/d	93.7 Bcf/d	91.2 Bcf/d
Canadian imports (net)	5.5 Bcf/d	5.2 Bcf/d	5.0 Bcf/d
LNG imports	0.1 Bcf/d	0.3 Bcf/d	0.3 Bcf/d

Winter-to-Winter pressure on natural gas prices

Data Source: Energy Ventures Analysis.

2021-2022 Winter Outlook | 10

Natural Gas Storage



Source: U.S. Energy Information Administration

Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2016 through 2020. The dashed vertical lines indicate current and year-ago weekly periods.

Working gas in underground storage, Lower 48 states — Summary text | CSV | JSN

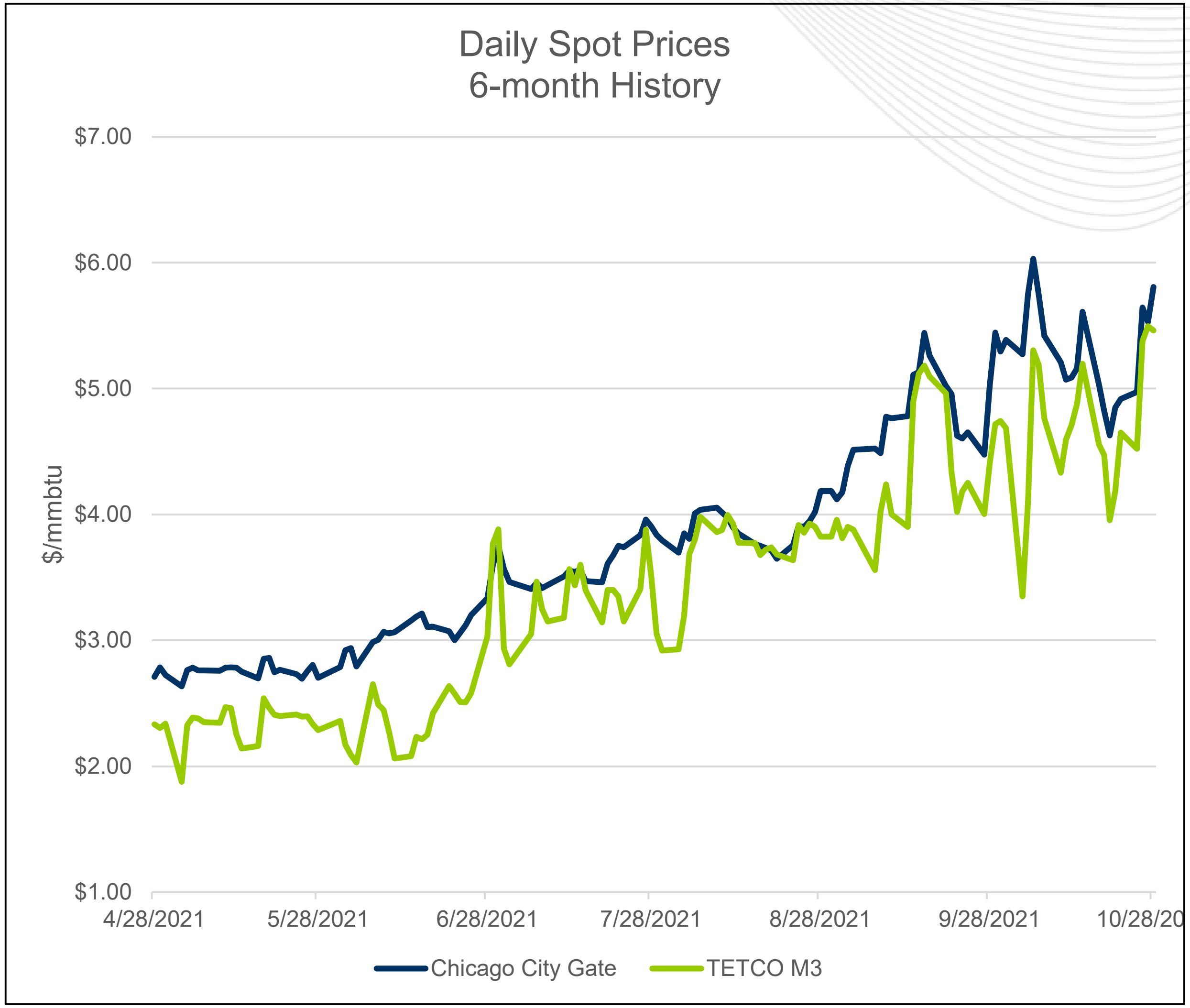
	Stocks billion cubic feet (Bcf)				Historical Comparisons			
					Year ago (10/22/20)		5-year average (2016-20)	
Region	10/22/21	10/15/21	net change	implied flow	Bcf	% change	Bcf	% change
East	885	862	23	23	938	-5.7	906	-2.3
Midwest	1,052	1,027	25	25	1,116	-5.7	1,070	-1.7
Mountain	212	211	1	1	245	-13.5	221	-4.1
Pacific	255	253	2	2	323	-21.1	305	-16.4
South Central	1,144	1,108	36	36	1,329	-13.9	1,173	-2.5
Salt	304	283	21	21	360	-15.6	308	-1.3
Nonsalt	840	825	15	15	968	-13.2	865	-2.9
Total	3,548	3,461	87	87	3,951	-10.2	3,674	-3.4

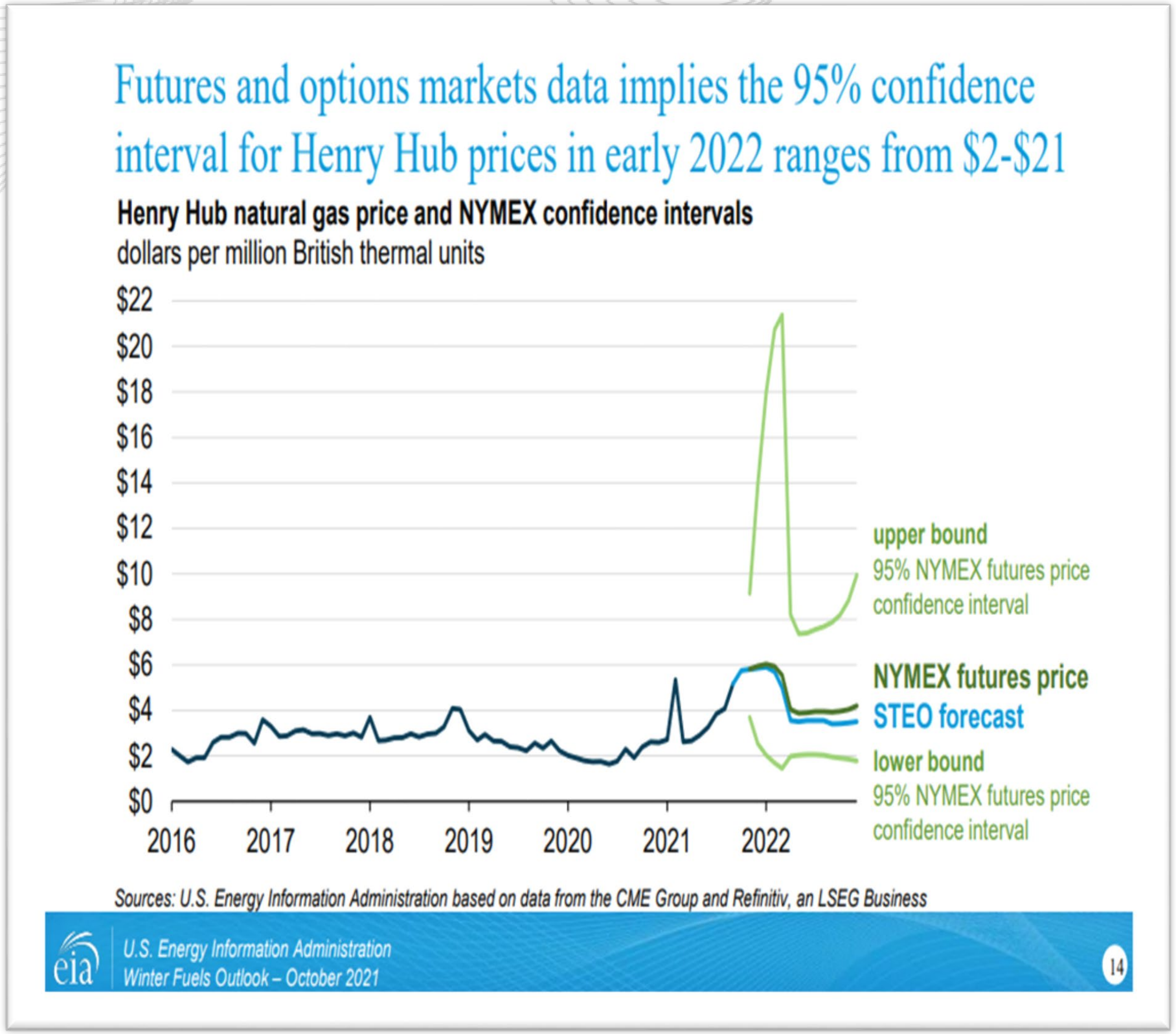
Totals may not equal sum of components because of independent rounding.

Summary

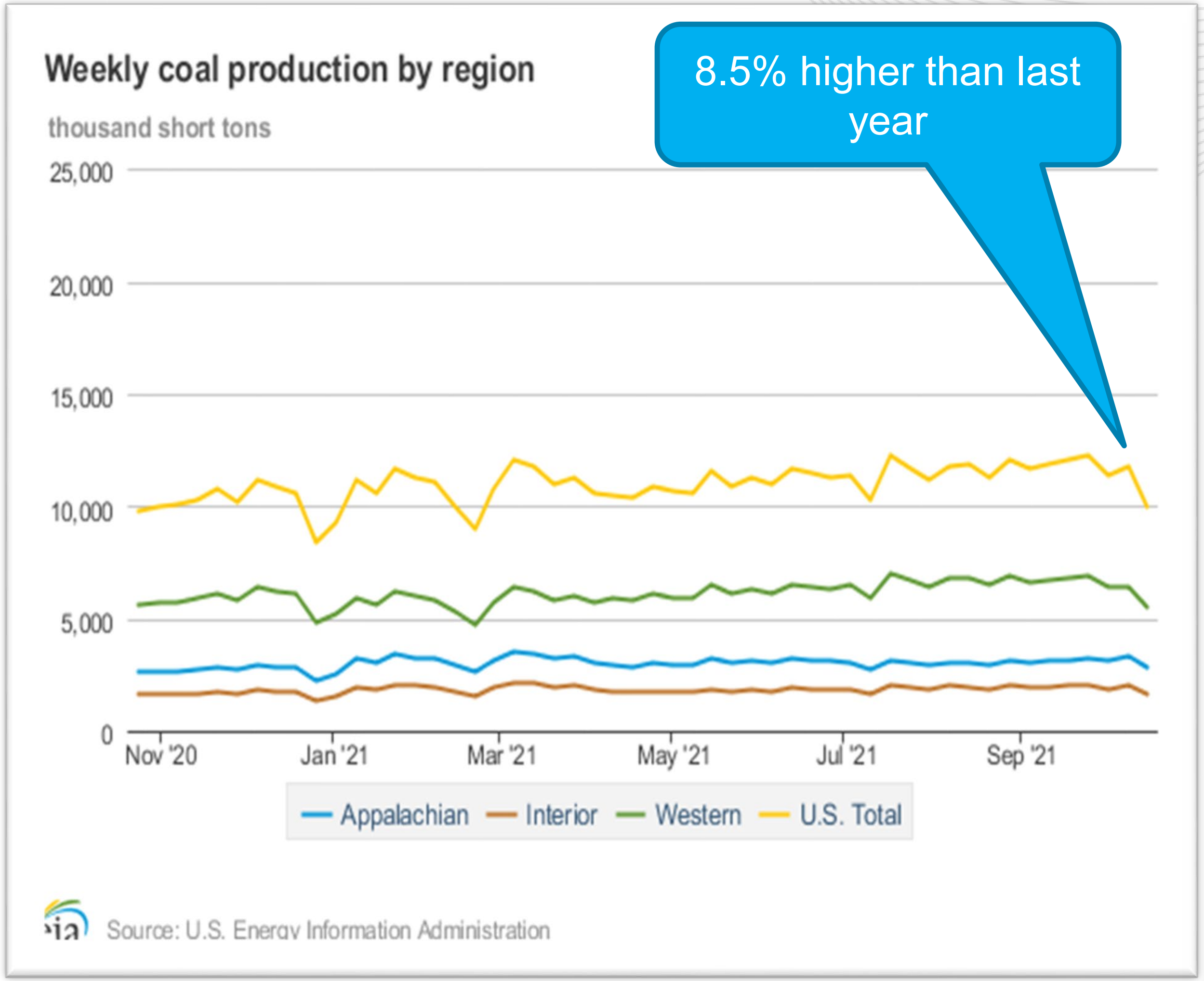
Working gas in storage was 3,548 Bcf as of Friday, October 22, 2021, according to EIA estimates. This represents a net increase of 87 Bcf from the previous week. Stocks were 403 Bcf less than last year at this time and 126 Bcf below the five-year average of 3,674 Bcf. At 3,548 Bcf, total working gas is within the five-year historical range.

Natural Gas Prices





Coal Production and Price



Coal Markets

Release date: October 25, 2021 | Next release date: November 1, 2021 Archive

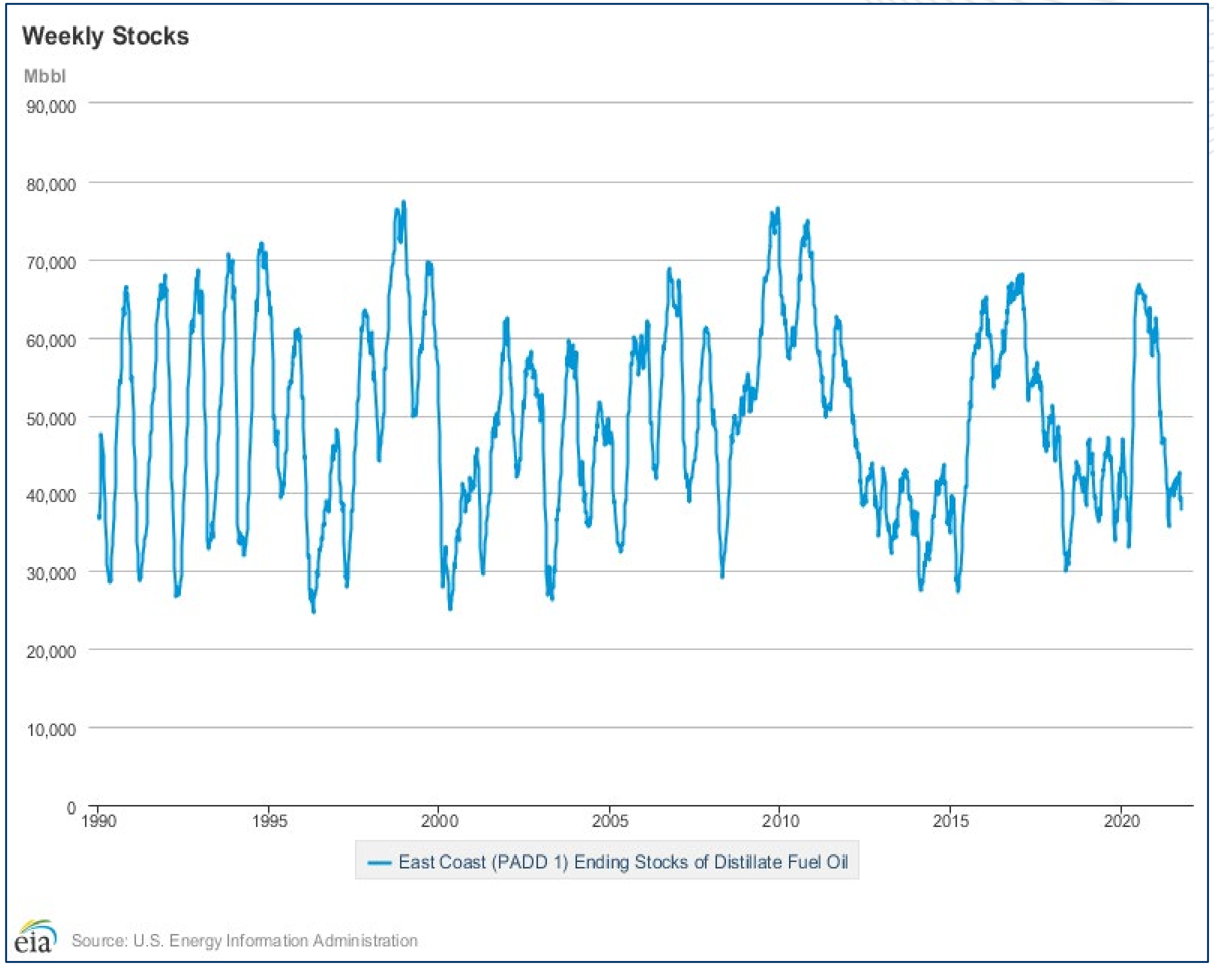
Dollars per short ton | Dollars per mmbtu

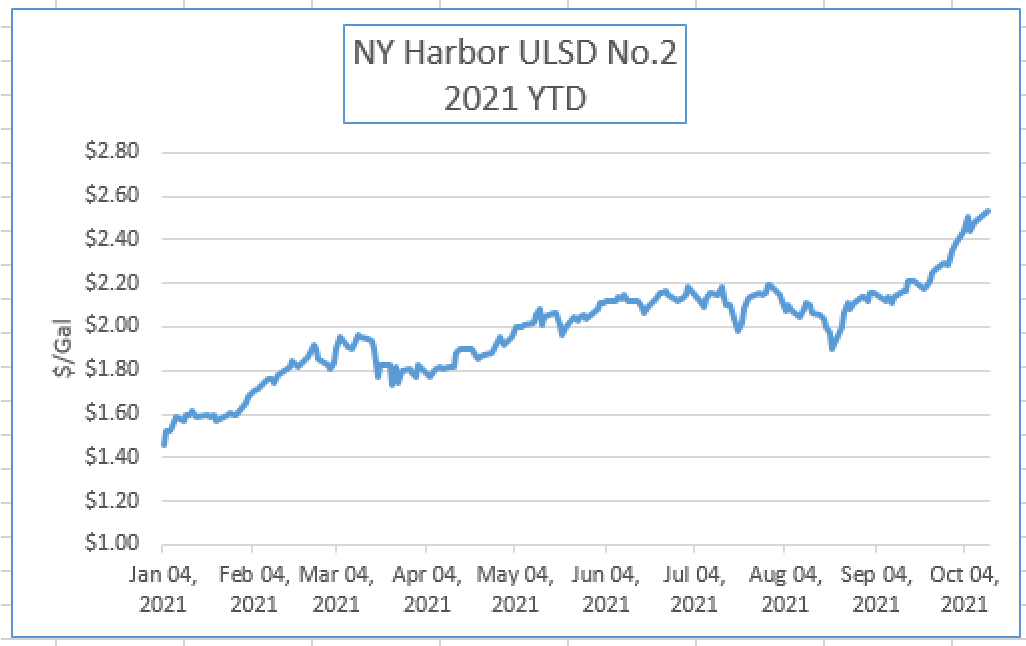
Average weekly coal commodity spot prices

dollars per short ton

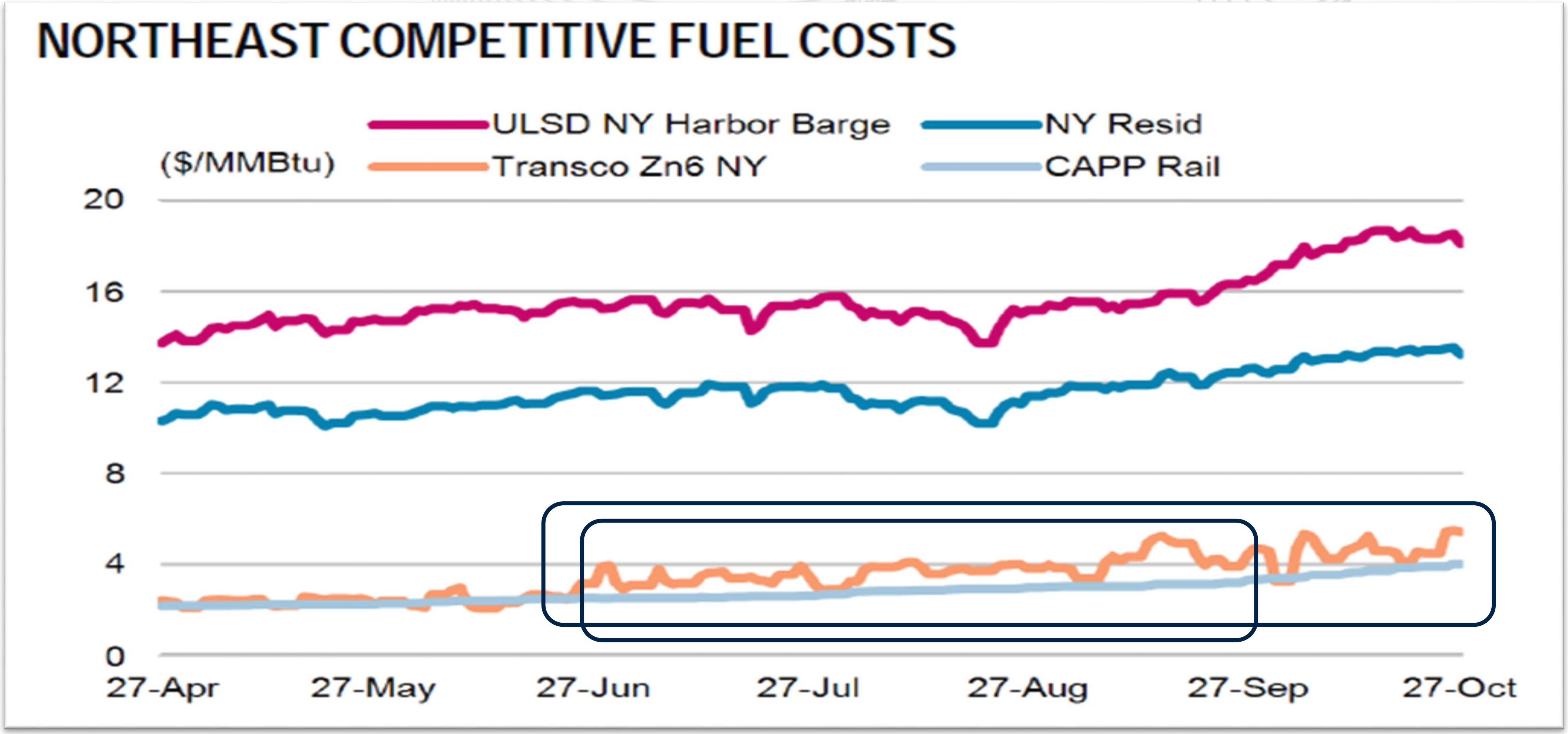
	Week ending					Week ago
	09/24/21	10/01/21	10/08/21	10/15/21	10/22/21	change
Central Appalachia *12,500 Btu, 1.2 SO_2*	$71.05	$73.25	$75.50	$75.50	$75.50	$0.00
Northern Appalachia *13,000 Btu, < 3.0 SO_2*	$60.65	$62.50	$64.40	$64.40	$64.40	$0.00
Illinois Basin *11,800 Btu, 5.0 SO_2*	$36.25	$36.25	$36.25	$36.25	$36.25	$0.00
Powder River Basin *8,800 Btu, 0.8 SO_2*	$13.35	$13.30	$13.25	$13.25	$13.25	$0.00
Uinta Basin *11,700 Btu, 0.8 SO_2*	$30.25	$30.15	$30.05	$30.05	$30.05	$0.00

PADD 1 Distillate Fuel Inventory and Price





Competitive Fuel Cost Comparison



- Pre Winter IRC Electric Gas Coordination Task Force Meeting – 10/28/21
  - Review of winter prep activities with ISOs/RTOs, interstate pipelines and Natural Gas Supply Association
- PJM Gas-Electric Coordination Team
  - Weekly operational review meetings with interstate pipelines commence in early November
  - Daily risk assessment of pipeline operations and potential fuel limitations
  - Ongoing monitoring of fuel market conditions and forecasts

Contact

SME/Presenter:
Brian Fitzpatrick

brian.fitzpatrick@pjm.com

Winter Gas Electric Coordination and Fuels Review

Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com