



RIVER TRANSPORT NEWS

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Domestic Barged Coal Volume Continued to Fall In Q3 2023

Barged shipments of coal to the domestic power generating sector continued to decline during the third quarter of 2023. According to a detailed *RTN* analysis of data compiled by the U.S. Department of Energy (DOE), 14.9 million tons of coal was shipped by barge to coal-fired power plants located on the inland river system and Gulf Coast waterways during the third quarter of 2023. These shipments were down 12.9 percent from the 17.1 million tons of barged coal shipped during the comparable year-ago period. These shipments also were down 10.8 percent from the 16.7 million tons of coal shipped by barge to domestic power generators during the second quarter of this year (see Table 1, page 2).

The decline in barged coal shipments was inevitable as the sector resumed its long-term downward slide after an all-too brief reprieve last year. Domestic barged coal shipments in 2022 experienced their first year-over-year increase since 2014 due primarily to a brief but intense spike in U.S. natural gas prices following Russia's February 2022 invasion of Ukraine.

Apparently, in reaction to these energy dynamics, U.S. power generators committed to purchasing significant quantities of coal. As it turned out, these aggregate commitments were well above needs. As a result, while coal burn at barge-served power plants was falling significantly on a year-over-year basis beginning in the fourth quarter of 2022, coal shipments were not,

resulting in significant increases in coal stockpiles at barge-served power plants. Based on the coal delivery and burn data summarized in Table 1, *RTN* estimates that aggregate coal stocks at barge-served power plants increased by 14.0 million tons between the end of the third quarter of 2022 and the end of the second quarter of 2023. This increase is nearly equivalent to an entire quarter's worth of coal burn at these plants.

Power generators, however, began to adjust their delivery totals to more closely match burn rates during the most recent quarter as total coal receipts by all modes to barge-served power plants declined to 17.0 million

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Table 1.
Salient Coal Demand Statistics

	2021 Q3	2021 Q4	2022 Q1	2022 Q2	2022 Q3	2022 Q4	2023 Q1	2023 Q2	2023 Q3	Q3 YOY Percent Change
Barge-Served Power Plants										
Coal Burn (Millions of Tons)	24.9	15.0	19.4	17.8	20.5	15.9	14.5	12.8	17.6	-14.1
Coal Receipts – All Modes (Millions of Tons)	16.8	16.8	16.7	19.3	19.7	18.5	19.1	19.0	17.0	-13.7
Barged Coal Receipts (Millions of Tons)	14.9	14.8	14.4	17.2	17.1	16.2	16.8	16.7	14.9	-12.9
National Totals										
Coal-fired Generation (Millions MW-Hours)	282.4	179.9	219.0	190.5	236.0	183.4	156.3	141.3	217.1	-8.0
Coal Burn (Millions of tons)	156.7	102.6	122.3	107.1	134.4	104.9	89.6	81.5	122.5	-8.9
Coal Receipts – All Modes (Millions of Tons)	123.5	116.1	113.7	110.9	122.5	115.1	109.3	101.3	110.8	-9.6

tons from 19.7 million tons one year earlier. The data, in fact, suggest that coal stocks at these plants contracted modestly by approximately 700,000 tons during the most recent quarter.

Overall, the riverborne U.S. steam coal sector mirrored the entire U.S. coal-fired generating segment. The declines in both generation and deliveries to the barge-served segment, however, were more severe.

At the national level, U.S. coal-fired generation declined by 8.2 percent on a year-over year basis even as total utility scale generation increase by 1.8 percent. Natural gas-fired generation, meanwhile, continued to increase its dominance of the U.S. electricity generating market. On a nationwide basis, natural gas-fired generation surged to a quarterly record high of 534.9 million MW-hours during the third quarter of 2023 surpassing the previous record of 534.9 million MW-hours by an impressive 5.6 percent.

The coal-fired generating sector also continued to be assailed by the ever-growing renewable utility-scale solar and wind generating segments as well. U.S. utility-scale solar generation increased by 19.5 percent during the third quarter of 2023 on a year-over-year basis. Wind generation, meanwhile, increased by 3.8 percent over the same period. Increases in these prime mover technologies more the covered the 6.1 percent year-over-year decline in conventional hydro-electric generation (see Table 2).

The surge in natural gas-fired generation was an obvious consequence of the year-over-year relative change in generator fuel costs. According to the DOE data, the average delivered cost of coal paid by power generators during the third quarter of 2023 was \$2.50/MMBtu essentially even with \$2.49/MMBtu average delivered cost one year earlier. The average delivered cost of natural gas, meanwhile, plunged by 64.6 percent during the most recent quarter from the year-ago period, dropping to \$2.92/MMBtu from \$8.24/MMBtu. While

Table 2.
Salient U.S. Utility Scale Electricity
Generation Statistics

Generation	Q2 23	Q2 22	Percent
(Millions of MW-Hours)			Change
Coal	217.1	236.6	-8.2
Natural Gas	565.0	534.9	5.6
Nuclear	205.2	201.5	1.8
Hydro	58.9	62.7	-6.1
Solar*	52.1	43.6	19.5
Wind	84.6	81.5	3.8
Other, net	24.8	26.0	-4.6
Total	1,207.7	1,186.8	1.8
Avg. Delivered Fuel Cost			
(\$/MMBtu)			
Natural Gas	2.92	8.24	-64.6
Coal	2.50	2.49	0.4

* Utility scale generation only.

average delivered coal and natural gas prices are now relatively close in nominal terms, natural gas’ competitive advantage becomes apparent on a bus-bar cost basis as a combined-cycle natural gas-fired power generator can produce electricity with approximately one-third less energy heat input than a conventional coal-fired steam generator.

Plant Closings

The ongoing closures of coal-fired power plants also contributed to the decline in coal-fired generation and shipments. With respect to the inland river system, shipments and coal burn during the third quarter of 2022 included Energy Harbor’s Sammis plant, which ceased operations in early May of this year. The Sammis plant’s coal burn during the third quarter of 2022 totaled 557,700 tons. Barged coal receipts at Sammis that quarter totaled 277,800 tons.

In other barge-served power plant developments, the Pleasants generating station located on the upper Ohio River recommenced operations during the most recent quarter after shutting down on June 1, 2023. The plant, until recently owned by Energy Harbor, was acquired this past summer by Omnis Fuel Technologies (OFT) which restarted power generation at the plant during the third quarter of this year. OFT has indicated that it plans to convert the plant to hydrogen fuel (see *RTN* 8/8/2023, p.1). Barged coal shipments to the Pleasants plant during the most recent quarter totaled 252,800 tons. The plant’s total coal consumption during the quarter, meanwhile, totaled 230,000 tons according to DOE data.

More Declines Looming

Barged coal shipments to domestic power generators will no doubt continue to soften as delivery volumes continue to adjust downwards to levels at or below barge-served plant burn rates. In particular, coal stocks at barge-served plants remain high as they were barely trimmed during the third quarter of 2023.

In addition, the fourth quarter typically is a “shoulder” month with respect to electricity demand and power generation and fuel demand should decline during the fourth quarter regardless of the state of power plant stockpile levels.

Finally, the competitive environment for coal-fired generation remains difficult. Installed utility-scale solar and wind capacity continues to grow while natural gas prices remain competitive despite recent increases relative to levels that prevailed during the third quarter of 2023. During that quarter, the spot price of natural gas at Louisiana’s Henry Hub averaged \$2.59/MMBtu. Through December 5th of the current quarter, the

Henry Hub spot price for the current quarter was averaging \$2.83/MMBtu. Ironically, spot prices generally have been trending lower even as energy markets have been moving deeper into the winter heating season. As *RTN* went to press, the Henry Hub spot price closed at \$2.57/MMBtu (see Figure 1). Coal-fired generation will have a difficult time boosting its market share given these market challenges.

