

High Grade Energy Weekly

Week ended January 5, 2024

Industry Overview

Energy spreads finish ~5 bps wider w-o-w

Spreads in the HG Energy sector finished ~5 bps wider but there was some variation among names given the lack of trading liquidity in the holiday shortened week. In the E&P subsector, spreads were roughly 5 bps wider with Apache (APA, NR), Devon Energy (DVN, MW), and Diamondback Energy (FANG, UW) underperforming, while Canadian Natural Resources (CNQCN, OW) outperformed. In midstream, spreads were also ~5 bps wider. Western Midstream (WES, MW), Plains All American (PAA, MW), and Enbridge (ENBCN, OW) underperformed, while Enterprise Products (EPD, MW) and TransCanada (TRPCN, MW) outperformed. As for the other subsectors, spreads were ~5 bps wider.

HG Energy marginally outperforms the HG Corporate Index

The ICE BofA HG Energy Index realized -26 bps of excess returns, marginally outperforming the ICE BofA HG Corporate Index (-28 bps of excess returns). The marginal outperformance was led by E&P which realized only -9 bps of excess returns.

APA to buy CPE; WMB acquires assets; SUCN pre-release

Energy M&A continued in 2024 with APA Corp's (APA, NR) announcement (on Thursday) to buy Callon Petroleum (CPE, covered by Gregg Brody) in an all-stock transaction valued at \$4.5b, inclusive of CPE's net debt. The transaction, which is expected to close in 2Q24, was unanimously approved by both Boards though remains subject to APA and CPE shareholder approval. Post-close, APA plans to replace existing CPE debt (~\$1.9b) with \$2b of term loan facilities which could provide the company optionality for near-term debt reduction. APA expects pro-forma net leverage to be 1.1x (currently 1.0x as of 3Q23). As a reminder, CPE is a Permian E&P company with ~120k acres primarily across the Delaware basin. The combined business is expected to produce over 500 mmbbl/d (~400 mmbbl/d standalone for APA). Next, we highlight Williams' (WMB, OW) \$1.95b acquisition of natural gas storage assets from Hartree Partners. The purchase price represents a ~10x estimated 2024 EBITDA multiple and the deal closed on January 3. We like this transaction fundamentally as it broadens WMB's presence in the Gulf of Mexico region and strengthens its access to fast growing LNG markets. From a balance sheet perspective, we expect leverage to rise modestly by YE24 though this does not impact our positive view of the credit. We maintain our OW recommendation on WMB and expects spreads to outperform over our 3-month investment horizon. Separately, we note that Suncor Energy (SUCN, NR) pre-released 4Q23 upstream production results which were in-line with consensus estimates. Lastly, we highlight Fitch's upgrade of Plains All American (PAA, MW) to BBB from BBB- (outlook stable).

Oil and natural gas rise to start the year

Oil prices increased ~3% w-o-w to \$73.50/bbl as continued instability in the middle east drove prices higher. The DOE reported a weekly decrease in oil inventories of ~5.5 mmbbl, a bullish result vs estimates of -3.4 mmbbl. Natural gas prices were up 9% w-o-w to \$2.75/mmbtu due to cold weather in Northern Europe. The EIA reported a weekly decrease in inventories of 14 bcf, a bearish result vs estimates of -32 bcf.

BofA Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. Refer to important disclosures on page 20 to 24. Analyst Certification on page 20. Valuation & Risk on page 20.

12642039

Timestamp: 05 January 2024 03:33PM EST

05 January 2024

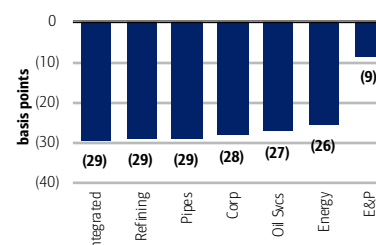
High Grade Credit
United States
Energy, MLPs & Pipelines

Daniel Lungo
Research Analyst
BofA
+1 646 855 9965
daniel.e.lungo@bofa.com

Gavin Andersen
Research Analyst
BofA
+1 646 855 8058
gavin.andersen@bofa.com

Exhibit 1: Weekly Excess Return (bps)

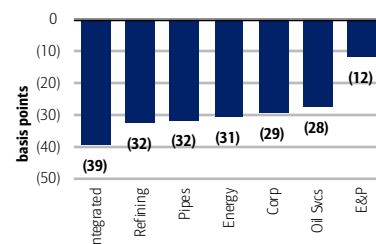
Energy performed in-line this week



Source: ICE Data Indices, LLC, BofA Global
ResearchBofA GLOBAL RESEARCH

Exhibit 2: YTD Excess Return (bps)

Energy has performed in-line YTD



Source: ICE Data Indices, LLC, BofA Global
ResearchBofA GLOBAL RESEARCH

Glossary

bbl: barrel
bcf: billion cubic feet
boe: barrels of oil equivalent
DOE: Department of Energy
EIA: Energy Information Administration
E&P: Exploration and Production
HG: high grade
LTM: last 12 months
mmbbl: million barrels
mmbtu: million British thermal units
WTI: West Texas Intermediate

News & Views

APA to acquire Callon Petroleum for \$4.5b in an all stock deal

On Thursday before market open, APA Corp (APA, NR) announced a definitive agreement to buy Callon Petroleum (CPE, covered by Gregg Brody) in an all-stock transaction valued at \$4.5b, inclusive of CPE's net debt. Each share of CPE common stock will be exchanged for 1.0425 shares of APA stock, equating to roughly 70mm shares. The transaction is expected to close in 2Q24 and was unanimously approved by both Boards though is subject to both APA and CPE shareholder approval. CPE is a Permian E&P company with ~120k acres primarily across the Delaware basin and ~100 mboe/d of production. The transaction increases APA's production scale in the Permian basin by ~50% and increases its Permian oil cut to 43% from 37%. APA expects to achieve annual run-rate savings of ~\$150mm with further upside over time. The synergies were broken out between overhead (~\$55mm), cost of capital (i.e. interest expense reduction, ~\$40mm), and operating (~\$55mm).

Capital allocation

Due to the addition of CPE net debt (~\$1.9b), APA expects pro-forma net leverage to be 1.1x (currently 1.0x net as of 3Q23). Importantly, APA expects to retire the existing debt at CPE and replace it with APA term loan facilities totaling \$2.0b as these facilities offer improved optionality for near-term debt reduction. In terms of timing, APA expects to replace CPE's existing debt shortly after transaction close. We note the CPE's outstanding bonds due 2026, 2028, and 2030 are callable now, in August 2024, and June 2025, respectively. Lastly, management did not commit to asset sales going forward but noted that proceeds from any sale would be used for debt repayment.

WMB to acquire assets from Hartree for \$1.95b; remain OW despite likely higher leverage

On December 27th, 2023, Williams (WMB, OW) announced plans to acquire a portfolio of natural gas storage assets from an affiliate of Hartree Partners LP for \$1.95b. The purchase price represents a ~10x estimated 2024 EBITDA multiple and the deal closed on January 3. The acquisition includes (i) six underground natural gas processing facilities (located in Louisiana and Mississippi) with total capacity of 115 bcf; (ii) 230 miles of gas transmission pipelines; (iii) 30 pipeline interconnects; and (iv) connections to Transco.

Remain OW despite likely higher leverage and possible new issue overhang

We like this transaction fundamentally as it broadens WMB's presence in the Gulf of Mexico region and strengthens its access to fast-growing LNG markets. From a balance sheet perspective, we expect leverage to rise modestly by YE24. Despite this, we maintain our positive view of the business and believe that WMB's ~30-35 bps discount to Enterprise Products Partners (EPD, MW) screens attractive. As a result, we think spreads should outperform over our 3-month investment horizon and remain OW.

SUCN reports 4Q23 upstream production above consensus estimates

On Wednesday before market open, Suncor Energy (SUCN, NR) released 4Q23 upstream production results of 808 mbbbl/d (above consensus of 764 mbbbl/d) with an average of over 900 mbbbl/d in December. 4Q23 upstream production included: oil sands production of 758 mbbbl/d and E&P production of 50 mbbbl/d. For FY23, SUCN averaged 746 mbbbl/d of total upstream production which was modestly above consensus of 735 mbbbl/d and in-line with company provided guidance. In its downstream segment, SUCN achieved an average refining utilization rate of 97% in 4Q23, leading to an annual average utilization rate of 90% in 2023.

Rating Agency Actions

Fitch upgrades PAA to BBB from BBB-; outlook stable

On December 20th, 2023, Fitch upgraded Plains All American (PAA, MW) to BBB from BBB- and provided a stable outlook. The upgrade reflects PAA's better than expected leverage (as of 3Q23) and updated capital allocation policy. Note, management lowered its long-term leverage target (at 3Q23) earnings to 3.25-3.75x from 3.75-4.25x. The stable outlook reflects Fitch's expectations for (i) material volume growth in the Permian; (ii) solid execution in PAA's natural gas liquids segment; and (iii) for stable volumes across the business (ex. Permian). A positive ratings action could be taken if leverage is sustained below 3.0x and/or there is a significant increase in volumes protected by long-term MVC provisions or long-term storage rental payments. Conversely, a negative ratings action could be taken if a large acquisition increases overall business risk or does not balance financing with respect to the issuance of debt, hybrids or common units and/or there is a change in capital allocation policy.

New Issue Commentary

EPD priced \$2b debt offering across two parts

On Tuesday, Enterprise Product Partners (EPD, MW) priced \$2b of senior unsecured notes across two tranches, including notes due January 11, 2027 (\$1b) and January 31, 2034 (\$1b). The notes priced at a spread over the relevant treasury benchmark of +55 bps (2027s) and +95 bps (2034s). Proceeds will be used for refinancing.

WMB priced \$2.1b debt offering across two parts

On Tuesday, Williams (WMB, OW) priced \$2.1b of senior unsecured notes across two tranches, including notes due March 15, 2029 (\$1.1b) and March 15, 2034 (\$1b). The notes priced at a spread over the relevant treasury benchmark of +102 bps (2029s) and +122 bps (2034s). Proceeds will be used for general corporate purposes, which may include the repayment of outstanding commercial paper or other near-term debt maturities.

CPGX priced \$500mm debt offering across one part

On Thursday, Columbia Pipelines (CPGX, NR) priced \$500m of senior unsecured notes across one tranche. The notes, which are due January 15, 2024, priced at a spread of +168 bps over the relevant treasury benchmark. Proceeds will be used for general corporate purposes, including to fund a cash distribution to its members.

BP priced \$2.25b debt offering across two parts

On Thursday, BP (BPLN, covered by Harris Papadopoulos) priced \$2.25b of senior unsecured notes across two tranches, including notes due April 10, 2029 (\$1.25b) and April 10, 2034 (\$1b). The notes priced at a spread over the relevant treasury benchmark of +73 bps (2029s) and +100 bps (2034s). Proceeds will be used for general corporate purposes, including working capital and the repayment of existing borrowings.

BofA Global Research Recommendations

Exhibit 3: BofA Global Research Recommendations

HG Energy recommendations include 6 Overweights and 5 Underweights

Exploration & Production	Rating	MLPs / Pipelines	Rating
Canadian Natural Resources	OW	Boardwalk Pipeline Partners	MW
Cenovus Energy	OW	Enbridge Inc	OW, MW 2049s+
ConocoPhillips	MW	Energy Transfer	MW, OW long-end
Continental Resources	OW	Enterprise Products Partners	MW
Coterra Energy	UW	Kinder Morgan Inc.	MW
Devon Energy	MW	MPLX LP	MW
Diamondback Energy	UW	ONEOK Inc.	UW
EOG Resources	UW	Plains All American Pipeline	MW, OW 4.9% 45s
EQT Corp	MW	Targa Resources Corp	UW
Hess Corp	MW	TransCanada	MW, UW long-end
Marathon Oil	MW	Western Midstream Operating	MW, OW long-end
National Fuel Gas	MW	Williams Companies	OW
Ovintiv Inc.	OW		
Occidental Petroleum Corp	MW		
Pioneer Natural Resources	RSTR		

Source: BofA Global Research

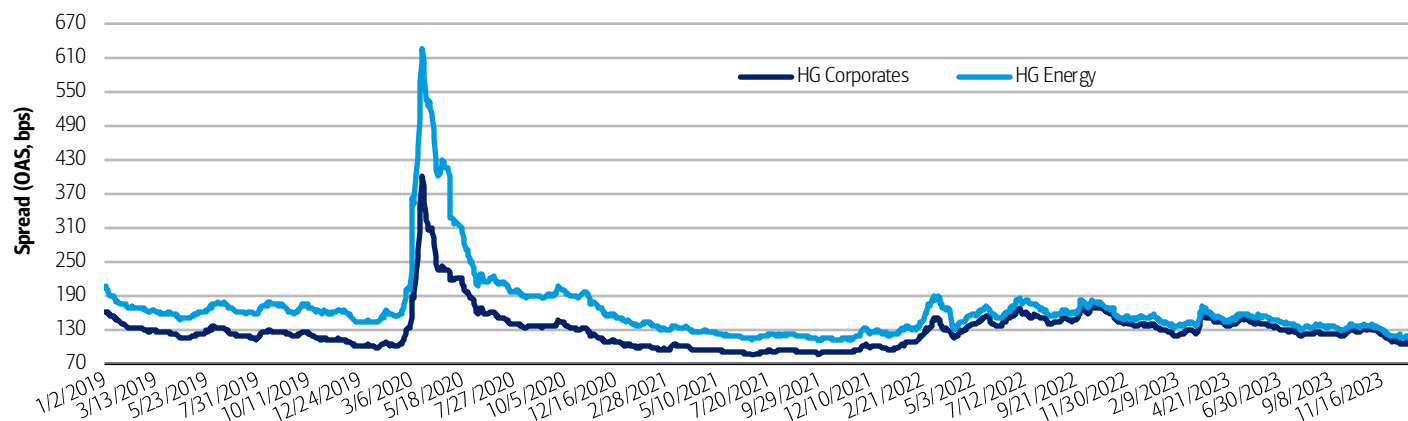
Note: UW = Underweight, MW = Marketweight, OW = Overweight, RSTR = Restricted. Please see credit opinion key at the end of this report

BofA GLOBAL RESEARCH



Exhibit 4: Spread-to-Worst: HG Corporate Index and HG Energy Index (January 2019 – Present)

The Option Adjusted Spread for HG Energy Index historically trades wide of the HG Corporate Index (Ice Data)

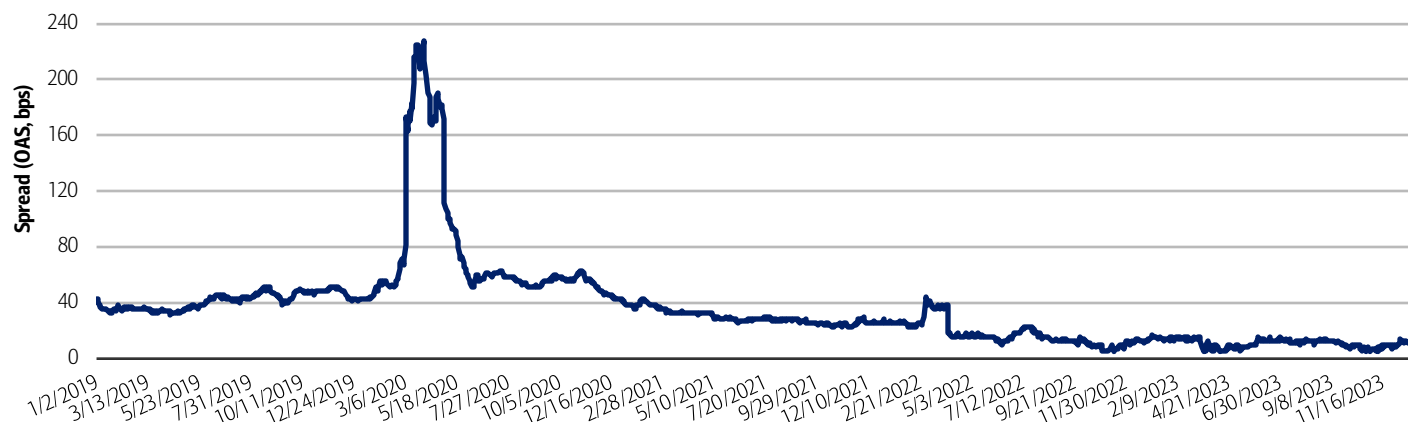


Source: ICE Data Indices, LLC, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 5: Spread-to-Worst: HG Energy Index less HG Corporate Index (January 2019 – Present)

Spread Differential (OAS) for High Grade Energy relative to High Grade Corporate Index still tighter than historical norms

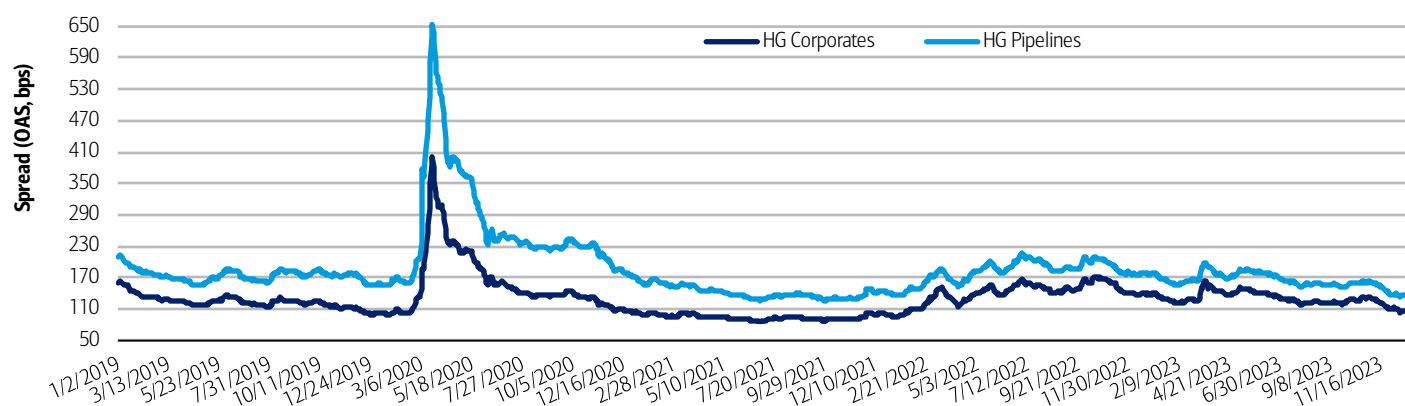


Source: ICE Data Indices, LLC, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 6: Spread-to-Worst: HG Corporate Index and HG Pipeline Index (January 2019 – Present)

The Option Adjusted Spread for HG Pipeline Index historically trades wide of the HG Corporate Index (Ice Data)

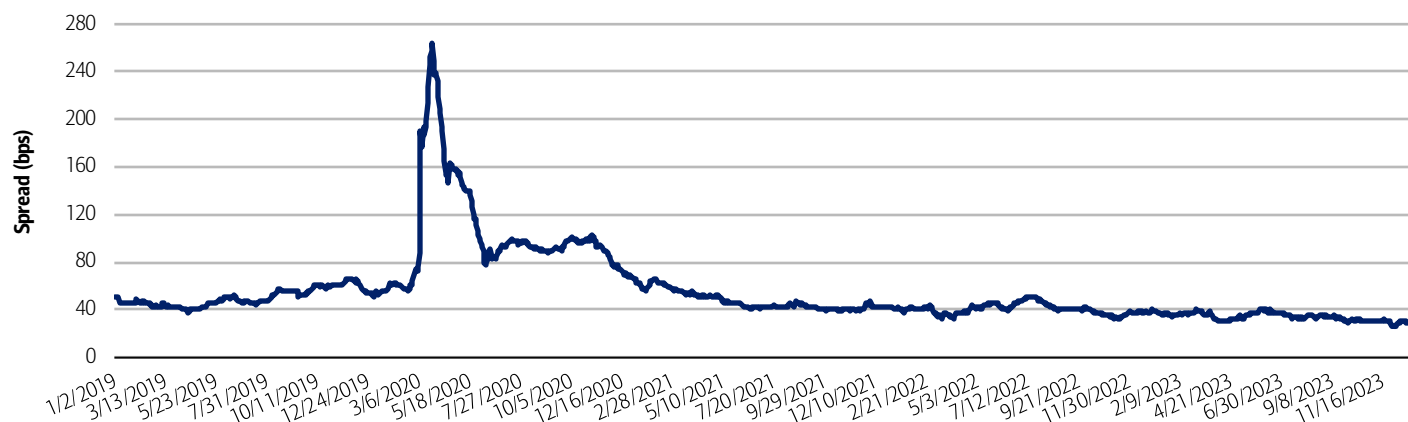


Source: ICE Data Indices, LLC, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 7: Spread-to-Worst: HG Pipeline Index less HG Corporate Index (January 2019 – Present)

Spread Differential (OAS) for High Grade Pipeline relative to High Grade Corporate Index near historical norms



Source: ICE Data Indices, LLC, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 8: Oil and Gas and Refiner Cash Spreads (bid)

In the E&P subsector, spreads were anywhere between flat to 10 bps wider w-o-w

Issuer	Entity	Coupon	Maturity	Outstanding (\$mm)	MDY/S&P	Bid (bps)	Z-Spread	G-Spread	Price	1 wk. change	1 mo. change	1yr. change	6-mo Tights	6-mo Wides	8-wk avg. spread (bps)
Exploration & Production															
APA	Apache Corp	5.350	7/1/2049	387	Baa3 / BB+	278	337	273	81.05	8	(1)	N.A.	265	336	275
CLR	Continental Resources	2.875	4/1/2032	800	Baa3 / BBB-	200	238	201	80.07	5	(2)	(85)	194	257	200
CLR	Continental Resources	4.900	6/1/2044	700	Baa3 / BBB-	244	311	245	79.74	4	(5)	(76)	239	290	245
CNQC	Canadian Natural Resources	6.250	3/15/2038	1,100	Baa1 / BBB-	193	226	179	103.26	N.A.	N.A.	N.A.	193	193	193
CNQC	Canadian Natural Resources	4.950	6/1/2047	750	Baa1 / BBB-	154	225	159	88.70	(7)	(17)	(47)	154	198	166
COP	ConocoPhillips	5.050	9/15/2033	1,000	A2 / A-	90	126	90	101.29	1	(2)	N.A.	83	114	91
COP	ConocoPhillips	5.550	3/15/2054	1,000	A2 / A-	116	181	117	103.30	1	2	N.A.	107	137	114
CTRA	Coterra Energy	4.375	3/15/2029	433	Baa2 / BBB	120	148	120	96.57	0	(10)	(33)	120	164	126
CVECN	Cenovus Energy	2.650	1/15/2032	500	Baa2 / BBB-	149	187	150	81.91	3	(6)	(22)	146	172	151
CVECN	Cenovus Energy	3.750	2/15/2052	750	Baa2 / BBB-	164	228	163	71.68	7	1	(25)	157	205	161
DVN	Devon Energy	5.000	6/15/2045	750	Baa2 / BBB	181	249	183	86.80	8	0	(21)	173	210	177
EOG	EOG Resources	3.900	4/1/2035	500	A3 / A-	105	141	101	90.42	N.A.	N.A.	N.A.	105	105	105
EOG	EOG Resources	4.950	4/15/2050	750	A3 / A-	104	165	100	96.34	4	(2)	(24)	94	126	101
EQT	EQT Corp	3.625	5/15/2031	435	Baa3 / BBB-	156	193	157	88.58	(4)	(19)	(56)	153	208	162
FANG	Diamondback Energy	6.250	3/15/2033	1,100	Baa2 / BBB-	149	185	149	105.47	6	(4)	(73)	141	199	148
FANG	Diamondback Energy	6.250	3/15/2053	650	Baa2 / BBB-	180	243	180	103.86	8	(3)	(72)	171	233	178
HES	Hess	5.800	4/1/2047	500	Baa3 *+ / BBB- *+	104	174	108	105.96	(5)	(6)	(119)	104	217	111
MRO	Marathon Oil	5.200	6/1/2045	500	Baa3 / BBB-	201	269	203	87.03	1	(7)	(26)	198	250	202
OW	Ovintiv Inc.	6.250	7/15/2033	600	Baa3 / BBB-	194	230	194	102.36	2	(6)	N.A.	192	262	198
OW	Ovintiv Inc.	7.100	7/15/2053	400	Baa3 / BBB-	231	293	231	108.12	6	(8)	N.A.	225	302	233
OXY	Occidental Petroleum	6.125	1/1/2031	1,143	Baa3 / BB+	165	199	167	102.67	4	(4)	N.A.	160	204	164
OXY	Occidental Petroleum	6.600	3/15/2046	1,116	Baa3 / BB+	185	253	188	105.30	4	3	N.A.	168	228	178
PXD	Pioneer Natural Resources	2.150	1/15/2031	1,000	Baa1 *+ / BBB *+	86	123	87	84.17	5	(2)	(66)	80	131	84
SU	Suncor Energy	3.750	3/4/2051	750	Baa1 / BBB	155	218	153	73.04	5	(2)	(25)	150	187	153
Refiners															
MPC	Marathon Petroleum Corp	4.750	9/15/2044	800	Baa2 / BBB	150	217	151	87.40	5	(7)	(52)	145	215	155
PSX	Phillips 66	5.300	6/30/2033	500	A3 / BBB+	117	153	117	101.12	7	(2)	N.A.	110	155	117
PSX	Phillips 66	3.300	3/15/2052	1,500	A3 / BBB+	125	190	124	69.60	7	2	(22)	107	166	122
VLO	Valero Energy	2.800	12/1/2031	462	Baa2 / BBB	123	161	124	84.58	(5)	(17)	(37)	123	163	135
VLO	Valero Energy	4.000	6/1/2052	508	Baa2 / BBB	163	227	162	75.13	5	4	(11)	152	195	160
International Oil Companies															
BP	BP	4.989	4/10/2034	1,000	A2 / A-	96	132	96	100.38	N.A.	N.A.	N.A.	96	96	96
BP	BP	3.001	3/17/2052	1,250	A2 / A-	103	169	102	67.70	7	6	(26)	91	130	97
CVX	Chevron	2.343	8/12/2050	750	Aa2 / AA-	71	135	68	62.47	6	2	(15)	63	95	67
EQNR	Equinor	3.700	4/6/2050	1,250	Aa2 / AA-	90	152	86	80.28	3	(4)	(22)	87	122	90
RDSALN	Royal Dutch Shell	4.125	5/11/2035	1,500	Aa2 / A+	86	121	81	93.84	N.A.	N.A.	N.A.	86	86	86
RDSALN	Royal Dutch Shell	3.000	11/26/2051	1,000	Aa2 / A+	92	157	91	69.10	6	3	(24)	83	116	88
TTEFP	Totalenergies Capital	3.127	5/29/2050	2,500	A1 / A	93	156	89	71.61	9	2	(18)	84	121	89
XOM	Exxon Mobil Corporation	3.452	4/15/2051	2,750	Aa2 / AA-	89	153	87	76.41	2	6	(23)	76	114	83

Source: Company data, Bloomberg, Moody's, S&P, BofA Global Research

BofA GLOBAL RESEARCH



**Exhibit 9: Drillers/Service Companies and MLP/Pipeline Cash Spreads (Bid)**

In the Midstream subsector, spreads were anywhere between flat to 10 bps wider w-o-w

Issuer Entity		Coupon	Maturity	Outstanding (\$mm)	MDY/S&P	Bid (bps)	Z-Spread	G-Spread	Price	1 wk. change	1 mo. change	1yr. change	6-mo Tights	6-mo Wides	8-wk avg. spread (bps)
Drillers/Service Companies															
BHI	Baker Hughes LLC	4.080	12/15/2047	1,350	A3 / A-	112	184	118	82.13	0	(7)	(67)	112	171	119
HAL	Halliburton	4.850	11/15/2035	1,000	A3 / BBB+	119	154	113	97.21	N.A.	N.A.	N.A.	119	119	119
HAL	Halliburton	5.000	11/15/2045	2,000	A3 / BBB+	112	181	115	94.63	2	2	(68)	103	177	109
SLB	Schlumberger Investment	4.850	5/15/2033	500	A2 / A	83	119	83	100.31	5	(2)	N.A.	77	126	86
Pipelines/Master Limited Partnerships															
BWP	Boardwalk Pipelines LP	3.600	9/1/2032	500	Baa2 / BBB-	147	184	148	87.40	2	(5)	(73)	145	197	155
CQP	Cheniere Energy Partners LP	5.950	6/30/2033	1,400	Ba1 / BBB	177	213	177	101.41	5	(3)	N.A.	171	208	177
DCP	DCP Midstream	3.250	2/15/2032	400	Baa3 / BBB-	148	185	149	85.70	3	(6)	(37)	145	182	154
DCP	DCP Midstream	5.600	4/1/2044	400	Baa3 / BBB-	163	229	164	96.11	5	(2)	(41)	158	203	164
ENBCN	Enbridge Inc	5.700	3/8/2033	2,300	Baa1 / BBB+	137	173	137	102.48	6	(5)	N.A.	131	182	139
ENBCN	Enbridge Inc	6.700	11/15/2053	1,250	Baa1 / BBB+	159	222	160	113.30	8	(2)	N.A.	150	178	158
EPD	Enterprise Products	4.850	1/31/2034	1,000	A3 / A-	95	131	94	99.36	N.A.	N.A.	N.A.	95	95	95
EPD	Enterprise Products	3.300	2/15/2053	1,000	A3 / A-	99	166	99	72.18	1	6	(58)	87	142	97
ET	Energy Transfer LP	6.550	12/1/2033	1,500	Baa3 / BBB	161	197	161	107.11	6	(3)	N.A.	148	189	161
ET	Energy Transfer LP	5.000	5/15/2050	2,000	Baa3 / BBB	183	244	179	86.89	4	0	(72)	172	239	181
KMI	Kinder Morgan, Inc.	5.200	6/1/2033	1,500	Baa2 / BBB	152	188	152	97.84	7	(1)	N.A.	145	181	153
KMI	Kinder Morgan, Inc.	5.450	8/1/2052	750	Baa2 / BBB	177	240	177	93.34	5	(3)	(46)	172	227	178
MPLX	MPLX LP	5.000	3/1/2033	1,100	Baa2 / BBB	150	186	150	96.60	5	(1)	N.A.	143	183	151
MPLX	MPLX LP	5.650	3/1/2053	500	Baa2 / BBB	176	240	177	96.18	4	(1)	N.A.	170	229	177
OKE	Oneok Inc	6.050	9/1/2033	1,500	Baa2 / BBB	147	183	147	104.39	5	(3)	N.A.	142	203	150
OKE	Oneok Inc	6.625	9/1/2053	1,750	Baa2 / BBB	177	240	178	109.48	2	(4)	N.A.	173	249	181
PAA	Plains All American	4.900	2/15/2045	649	Baa3 / BBB-	197	265	199	84.06	8	1	(80)	189	257	196
TRGP	Targa Resources	6.500	3/30/2034	1,000	Baa3 / BBB-	157	193	157	107.23	2	(9)	(77)	155	207	164
TRGP	Targa Resources	6.500	2/15/2053	850	Baa3 / BBB-	193	255	193	105.42	6	(3)	(83)	187	251	194
TRPCN	TransCanada	2.500	10/12/2031	1,000	Baa2 / BBB+	130	168	131	82.50	1	(8)	(32)	129	171	136
TRPCN	TransCanada	5.100	3/15/2049	1,000	Baa2 / BBB+	148	207	142	92.70	5	(8)	(34)	143	198	152
WES	Western Midstream Operating	6.150	4/1/2033	750	Baa3 / BBB-	185	221	185	102.23	7	6	N.A.	173	228	183
WES	Western Midstream Operating	5.250	2/1/2050	1,000	Baa3 / BBB-	211	271	207	86.92	8	(9)	N.A.	203	279	218
WMB	The Williams Companies Inc	5.150	3/15/2034	1,000	Baa2 / BBB	123	159	122	99.50	N.A.	N.A.	N.A.	123	123	123
WMB	The Williams Companies Inc	5.300	8/15/2052	750	Baa2 / BBB	152	215	152	94.58	5	2	(54)	138	205	150

Source: Company data, Bloomberg, Moody's, S&P, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 10: Commodity Price Forecast

Commodity Deck Forecast is above consensus for oil while below consensus for natural gas in FY24

Period	BofA		Street Consensus	
	WTI Oil \$/Bbl	Natural Gas \$/MMbtu	WTI Oil \$/Bbl	Natural Gas \$/MMbtu
1Q24E	86.00	2.90	79.25	3.12
2Q24E	88.00	2.50	80.83	2.80
3Q24E	86.00	3.00	81.00	3.00
4Q24E	84.00	3.60	81.50	3.57
2024E	86.00	3.00	80.33	3.32

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 11: Weekly Front Month NYMEX WTI (\$/bbl)

WTI front month price of \$73.00/bbl is below the price of \$73.75/bbl from the beginning of 2023

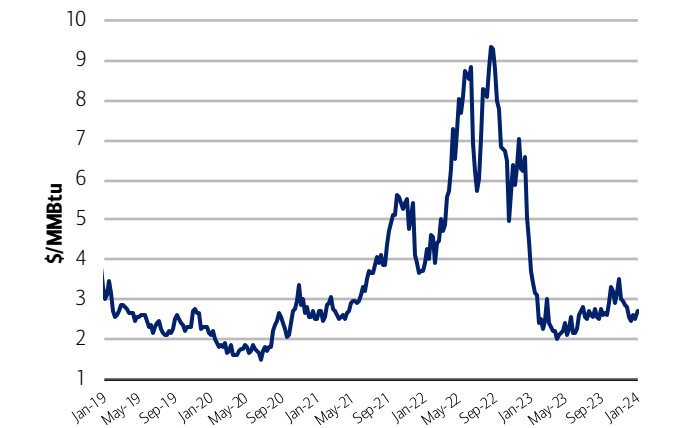


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 12: Weekly Front Month NYMEX Henry Hub (\$/MMbtu)

Natural gas front month prices are at \$2.70/mmbtu, below \$3.70/mmbtu, the level at the beginning of 2023



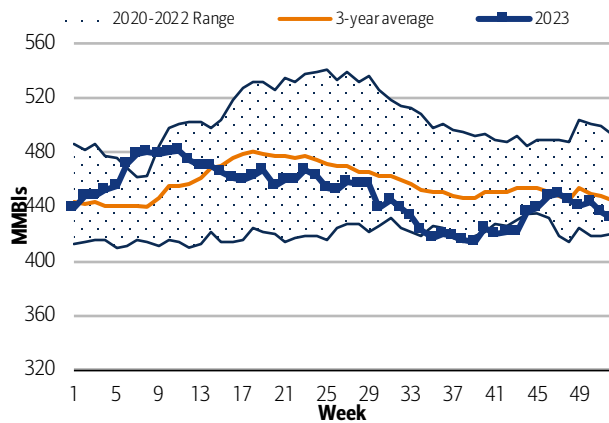
Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH



Exhibit 13: US Crude Oil Inventory (MMBbls)

U.S. Crude Inventories are below their weekly 2020-2022 average of 445 mmbbls at 431 mmbbls

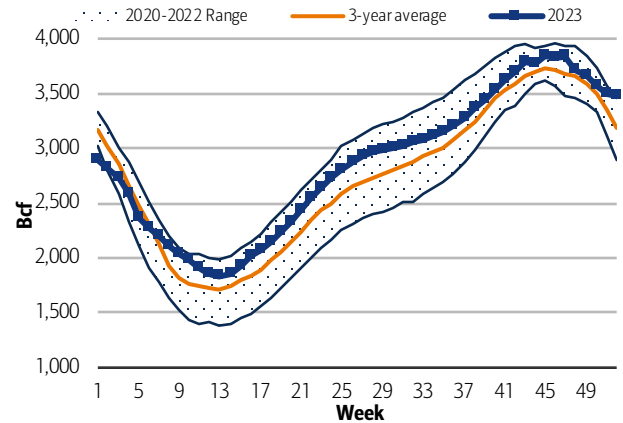


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 14: US Natural Gas Inventory (bcf)

U.S. Natural Gas Inventories are above their weekly 2020-2022 average of 3,192 bcf at 3,476 bcf

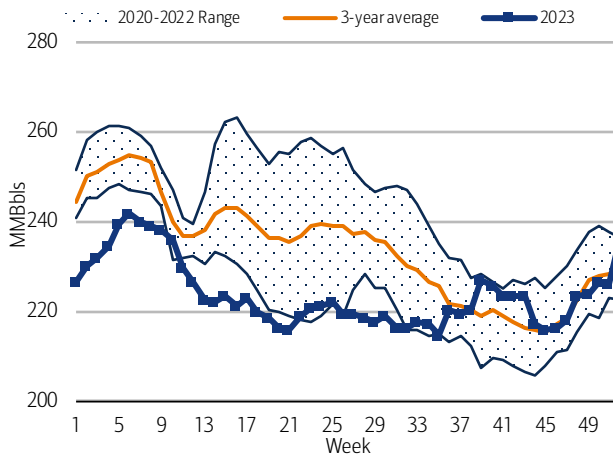


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 15: US Gasoline Inventory (MMBbls)

U.S. Gasoline Inventories are above their weekly 2020-2022 average of 227 mmbbls at 237 mmbbls

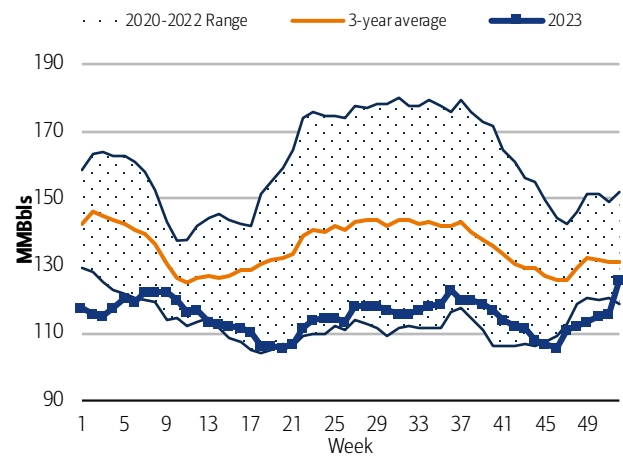


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 16: US Distillate Inventory (MMBbls)

U.S. Distillate Inventories are below their weekly 2020-2022 average of 131 mmbbls at 126 mmbbls

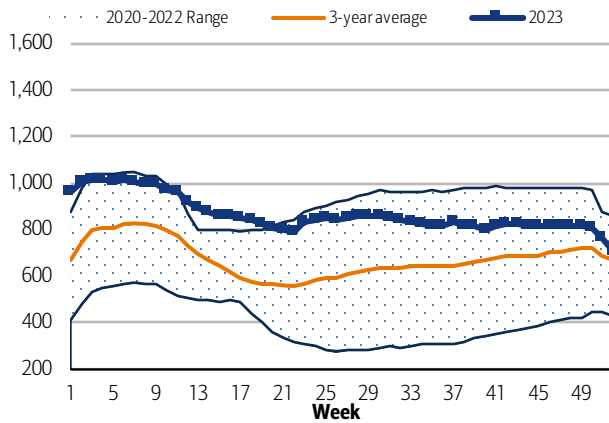


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 17: BHI North American Oil & Natural Gas Rig Count

BHI Rig Count has decreased from 961 rigs at the beginning of 2023 to 708 rigs

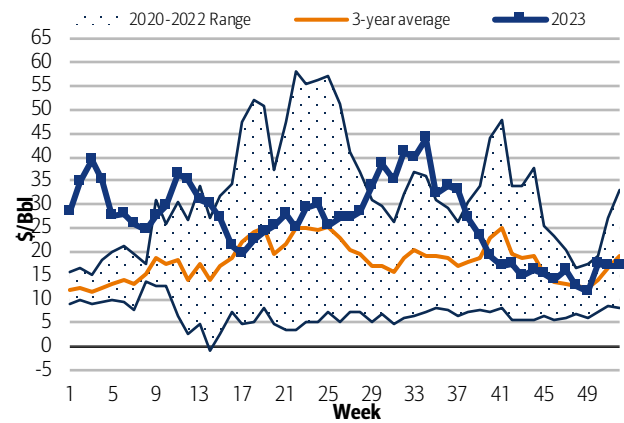


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 18: Weekly Average Cushing 3:2:1 Crack Spreads

Cushing Crack Spreads are below their weekly 2020-2022 average of \$19.25/bbl at \$17.25/bbl

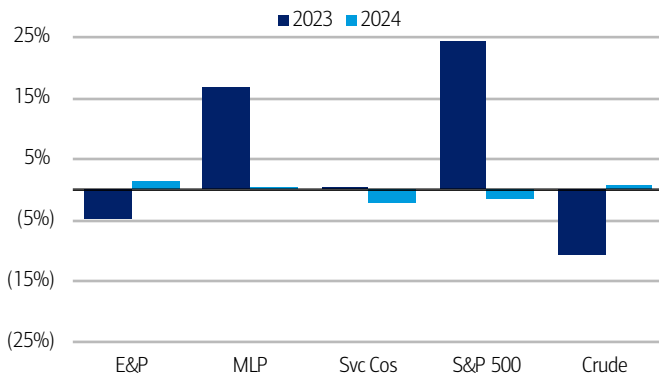


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 19: YTD Equity Performance in Energy Sector

E&P and MLPs are the best performing equities within the energy sector in 2024 while Oilfield Services have lagged

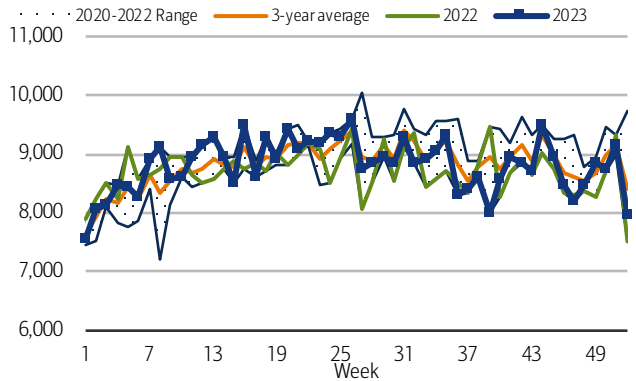


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 20: Weekly Average Gasoline Demand

Average gasoline demand is below their weekly 2020-2022 average of 8,397 mbb/d at 7,954 mbb/d



Source: EIA, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 21: HG Energy New Issuance

There was ~\$7b of HG New Issuance to date in 2024

Announce Date	Ticker	Issuer	Moody's	S&P	Amount Issued (\$MM)	Coupon (%)	Maturity Date	Term (yrs)	Spread At Issue
1/2/2024	EPD	Enterprise Products Oper	A3	A-	1000	4.85	1/31/2034	10	95
1/2/2024	EPD	Enterprise Products Oper	A3	A-	1000	4.6	1/11/2027	3	55
1/2/2024	WMB	Williams Companies Inc	Baa2	BBB	1100	4.9	3/15/2029	5	102
1/2/2024	WMB	Williams Companies Inc	Baa2	BBB	1000	5.15	3/15/2034	10	122
1/4/2024	CPGX	Columbia Pipeline Holdco	Baa1	BBB+	500	5.681	1/15/2034	10	168
1/4/2024	BPLN	Bp Cap Markets America	A2	A-	1250	4.699	4/10/2029	5	73
1/4/2024	BPLN	Bp Cap Markets America	A2	A-	1000	4.989	4/10/2034	10	100

Source: Bloomberg, Company & Partnership Reports

BofA GLOBAL RESEARCH



Exhibit 22: Next Twelve Months Debt Maturities

NTM USD Debt Maturities in the Energy Sector

	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	NTM Maturities
E&P													
APA	-	-	-	-	-	893	-	-	-	-	-	-	893
CLR	-	-	-	-	-	893	-	-	-	-	-	-	893
CNQC	-	-	-	-	-	-	-	-	500	-	-	-	500
COP	-	-	461	-	15	-	-	-	-	-	281	-	757
CTRA	-	-	-	-	-	-	-	-	575	-	-	-	575
CVECN	-	-	-	-	-	-	-	-	-	-	-	-	-
DVN	-	-	-	-	-	-	-	-	472	-	-	-	472
EOG	-	-	-	-	-	-	-	-	-	-	-	-	-
FANG	-	-	-	-	-	-	-	-	-	-	-	-	-
HES	-	-	-	-	-	-	300	-	-	-	-	-	300
MRO	-	-	-	-	-	-	400	-	-	-	-	-	400
NFG	-	-	-	-	-	-	-	-	-	-	-	-	-
OW	-	-	-	-	-	-	-	-	-	-	-	-	-
OXY	-	-	-	-	-	-	402	654	-	-	-	-	1,056
PXD	-	-	-	-	-	-	-	-	-	-	-	-	-
SUCN	-	-	-	-	-	-	-	-	-	-	-	-	-
	\$0	\$0	\$461	\$0	\$15	\$893	\$1,102	\$654	\$1,547	\$0	\$281	\$0	\$4,953
MLP / Pipelines													
BWP	-	-	-	-	550	-	-	-	-	-	-	600	1,150
DCP	-	800	-	-	-	-	-	-	-	-	-	300	1,100
ENBCN	-	-	1,300	-	-	-	1,000	1,000	-	-	500	-	3,800
EPD	-	850	-	-	-	-	-	-	-	-	-	-	850
ET	1,150	432	-	2,250	600	-	-	-	-	-	65	175	4,672
KMI	-	650	40	24	600	-	-	-	650	-	-	-	1,964
MPLX	-	-	-	-	-	-	-	-	750	-	-	1,150	1,900
OKE	-	-	-	-	-	-	-	-	500	-	-	-	500
PAA	-	-	-	-	-	-	-	-	-	-	750	-	750
TRGP	-	-	-	-	-	-	-	-	-	-	-	-	-
TRPCN	-	125	-	-	-	562	-	-	-	1,250	-	75	2,012
WES	-	-	-	-	-	-	-	-	-	-	-	-	-
WMB	-	-	1,000	-	-	1,250	-	-	-	-	-	-	2,250
	\$1,150	\$2,857	\$2,340	\$2,274	\$1,750	\$1,812	\$1,000	\$1,000	\$1,900	\$1,250	\$1,315	\$2,300	\$20,948
Refiners													
DINO	-	-	-	-	-	-	-	-	-	-	-	-	308
MPC	-	-	-	-	-	-	-	-	750	-	-	1,150	-
PSX	-	800	-	-	-	-	-	-	-	-	-	300	800
VLO	-	-	167	-	-	-	-	-	-	-	-	-	167
	\$0	\$800	\$167	\$0	\$0	\$0	\$0	\$0	\$750	\$0	\$0	\$1,450	\$3,167
Service Companies													
BHI	-	-	-	-	-	107	-	-	-	-	-	-	650
HAL	-	-	-	-	-	-	-	-	-	-	-	-	-
NOV	-	-	-	-	-	-	-	-	-	-	-	-	-
SLB	-	-	-	-	355	54	-	-	-	547	-	-	1,855
	\$0	\$0	\$0	\$0	\$355	\$161	\$0	\$0	\$0	\$547	\$0	\$0	\$1,063
Majors													
BPLN	-	-	-	-	-	-	-	-	-	-	-	-	-
CVX	-	9	1,000	-	27	-	-	-	-	37	650	18	2,090
TTEFP	-	-	-	-	-	1,000	-	-	1,250	-	-	-	3,250
SHELLN	-	1,000	-	1,500	-	-	-	-	-	-	-	-	2,500
EQNR	-	-	-	-	80	900	-	1,000	-	-	-	-	1,980
XOM	-	-	1,053	-	-	1,642	-	1,000	-	69	-	-	1,053
	\$0	\$1,009	\$2,053	\$1,500	\$107	\$3,542	\$0	\$2,000	\$1,250	\$106	\$650	\$18	\$12,235

Source: Bloomberg, Company Reports, BofA Global Research

BofA GLOBAL RESEARCH



Exhibit 23: Credit facilities

Revolving credit facility size across energy space

Credit Facility #1			Credit Facility #2	
E&P				
Company	Size (\$mm)	Maturity	Size (\$mm)	Maturity
Apache Corp	1,800	April-27	€ 1,500	April-27
Canadian Natl Resources	C\$2,425	June-27	C\$2,425	June-25
Cenovus Energy	C\$3,700	November-26	C\$1,800	November-25
ConocoPhillips	5,500	February-27		
Continental Resources	2,255	October-26		
Coterra Energy	1,500	March-28		
Diamondback Energy	1,600	June-28	750	June-25
Devon Energy	3,000	March-28		
EOG Resources	1,900	June-28		
EQT Corp	2,500	June-27		
Hess	3,250	July-27		
Marathon Oil	2,500	July-27		
National Fuel Gas	1,000	February-27		
Occidental Petroleum	4,000	June-25		
Ovintiv Inc.	2,200	July-26	1,300	July-26
Pioneer Natural Resources	2,000	January-26		
Suncor Energy	2,800	June-26	2,707	June-24
MLP/Pipelines				
Company	Size (\$mm)	Maturity	Size (\$mm)	Maturity
Boardwalk Pipeline Partners	1,000	May-28		
Enbridge Inc.	C\$8,860	2024-2027	C\$8,403	2024-2027
Energy Transfer	5,000	April-27	1,500	April-27
Enterprise Products Partners	2,700	March-28	1,500	March-24
Kinder Morgan Inc.	3,500	August-27	500	November-23
MPLX LP	2,000	July-27		
ONEOK Inc	2,500	June-27		
Plains All American Pipeline	1,350	August-27	1,350	August-25
Targa Resources	2,750	February-27		
TransCanada	3,000	December-23	C\$3,000	December-27
Western Midstream Operating	2,000	April-28		
Williams Companies	3,750	October-29		
Service Companies				
Company	Size (\$mm)	Maturity	Size (\$mm)	Maturity
Baker Hughes,	3,000	December-24		
Halliburton	3,500	April-27		
Schlumberger	2,000	February-25	2,000	February-27
Refiners				
Company	Size (\$mm)	Maturity	Size (\$mm)	Maturity
HollyFrontier	1,650	April-26		
Marathon Petroleum	5,000	July-27	2,000	July-27
Phillips 66	5,000	July-27	1,400	March-27
Valero Energy	4,000	November-27	1,300	July-24

Source: Company filings, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 24: Summary Hedge positions 2023 and 2024

E&P company hedge positions for 2023 and 2024

Natural Gas Hedging Summary										Crude Oil Hedging Summary													
2023										2023										Total 2023			
Gas Swaps			Gas Collars				Gas Puts			Oil Swaps			Oil Collars				Oil Puts			Gas	Oil	BOE	
Company	mmcf/d	% of Gas	Price	mmcf/d	% of Gas	Floor	Ceiling	mmcf/d	% of Gas	Floor	mb/d	% of Oil	Price	mb/d	% of Oil	Floor	Ceiling	mb/d	% of Oil	Floor	Hedged	Hedged	Hedged
Apache Corp	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0%	0%	0%
Continental Resources	478	36%	\$3.56	195	15%	\$3.12	\$4.09	0	0%	N/A	76	31%	\$78.81	0	0%	N/A	N/A	0	0%	N/A	51%	31%	41%
Canadian Nat Resources	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0%	0%	0%
ConocoPhillips	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0%	0%	0%
Coterra Energy	0	0%	N/A	407	14%	\$3.81	\$6.34	0	0%	N/A	0	0%	N/A	30	16%	\$70.00	\$91.02	0	0%	N/A	14%	16%	15%
Cenovus Energy	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0%	0%	0%
Devon Energy	110	11%	\$3.31	143	14%	\$3.67	\$7.62	0	0%	N/A	19	4%	\$72.09	81	17%	\$69.63	\$94.29	0	0%	N/A	25%	21%	22%
EOG Resources	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0%	0%	0%
EQT Corp	152	3%	\$4.77	0	0%	N/A	N/A	3,196	57%	\$3.67	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	60%	0%	56%
Diamondback Energy	0	0%	N/A	302	56%	\$3.18	\$9.22	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	150	41%	\$55.00	56%	41%	44%
Marathon Oil	0	0%	N/A	49	7%	\$4.00	\$11.14	0	0%	N/A	0	0%	N/A	10	4%	\$60.00	\$97.59	0	0%	N/A	7%	4%	5%
Ovintiv	0	0%	N/A	600	38%	\$3.67	\$7.93	0	0%	N/A	35	11%	\$76.94	75	24%	\$65.00	\$96.45	0	0%	N/A	38%	36%	37%
Occidental Petroleum	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0%	0%	0%
Suncor		N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A	0	N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A	n.a.	n.a.	n.a.

2024										2024										Total 2024			
Gas Swaps			Gas Collars				Gas Puts			Oil Swaps			Oil Collars				Oil Puts			Gas	Oil	BOE	
Company	mmcf/d	% of Gas	Price	mmcf/d	% of Gas	Floor	Ceiling	mmcf/d	% of Gas	Floor	mb/d	% of Oil	Price	mb/d	% of Oil	Floor	Ceiling	mb/d	% of Oil	Floor	Hedged	Hedged	Hedged
Apache Corp	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0%	0%	0%
Continental Resources	644	48%	\$3.42	49	4%	\$3.12	\$4.09	0	0%	N/A	76	31%	\$76.84	0	0%	N/A	N/A	0	0%	N/A	52%	31%	41%
Canadian Nat Resources	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0%	0%	0%
ConocoPhillips	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0%	0%	0%
Coterra Energy	0	0%	N/A	325	11%	\$2.82	\$4.50	0	0%	N/A	0	0%	N/A	25	13%	\$66.79	\$90.83	0	0%	N/A	11%	13%	12%
Cenovus Energy	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0%	0%	0%
Devon Energy	97	9%	\$3.31	40	4%	\$3.78	\$7.05	0	0%	N/A	5	1%	\$72.09	32	7%	\$60.15	\$84.71	0	0%	N/A	13%	8%	9%
EOG Resources	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0%	0%	0%
EQT Corp	0	0%	N/A	0	0%	N/A	N/A	765	13%	\$4.07	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	13%	0%	12%
Diamondback Energy	0	0%	N/A	195	35%	\$3.00	\$8.42	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	37	10%	\$55.00	35%	10%	15%
Marathon Oil	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	30	10%	\$65.83	\$101.33	0	0%	N/A	0%	10%	7%
Ovintiv	200	13%	\$3.62	550	34%	\$3.00	\$4.42	0	0%	N/A	12	4%	\$73.69	52	18%	\$64.52	\$83.88	0	0%	N/A	47%	23%	34%
Occidental Petroleum	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0	0%	N/A	0	0%	N/A	N/A	0	0%	N/A	0%	0%	0%
Suncor	0	N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A	0	N/A	N/A	0	N/A	N/A	N/A	0	N/A	N/A	n.a.	n.a.	n.a.

Source: Company Reports, BoFA Global Research

* All hedging data excludes basis hedges

1&2) EQT 2023 hedges exclude roughly 1.05 bcf/d of short nat gas swaps at a weighted average price of \$3.01/mcf. EQT 2024 hedges exclude roughly 1.52 bcf/d of short nat gas swaps at a weighted average price of \$3.34/mcf.

3&4) EQT 2023 hedges exclude roughly 0.63 bcf/d and 2.64 bcf/d of long and short nat gas calls at a weighted average price of \$3.28/mcf and \$4.78/mcf, respectively. EQT 2024 hedges exclude roughly 0.14 bcf/d and 0.90 bcf/d of long and short nat gas calls at a weighted average price of \$3.20/mcf and \$5.18/mcf, respectively.

5) MRO 2023 collars exclude 50 mmbtu/d of nat gas put options sold at \$2.50/mmbtu

6) MRO 2023 collars exclude 10 mbbl/d of oil sold put options sold at \$45/bbl

7&8) OW 2023 hedges exclude 400 mmcf/d of nat gas put options sold at a weighted average price of \$3.00/mcf. OW 2024 hedges exclude 150 mmcf/d of nat gas put options sold at a weighted average price of \$2.25/mcf

9&10) OW 2023 hedges exclude 40 mbbl/d of oil put options sold at a weighted average price of \$50/bbl. OW 2024 hedges exclude 13 mbbl/d of oil put options sold at a weighted average price of \$50/bbl.

BoFA GLOBAL RESEARCH





Exhibit 25: Oil & Gas – Summary Financial Statistics – Third Quarter 2023

Financial Statistics for U.S. E&P companies as of 3Q23

	APA	CLR	CNQC	COP	CTRA	CVECN	DVN	EOG	EQT	FANG	HES	MRO	NFG	OVV	OXY	PXD	SUCN*
Credit Ratings																	
Moody's	Baa3 S	Baa3 S	Baa1 S	A2 S	Baa2 S	Baa2 S	Baa2 S	A3 S	Baa3 S	Baa2 S	Baa3 **	Baa3 S	Baa3 S	Baa3 S	Baa3 P	Baa1 **	Baa1 S
S&P	BB+ P	BBB- S	BBB- S	A- S	BBB S	BBB- P	BBB S	A- S	BBB- S	BBB- P	BBB- **	BBB- S	BBB- S	BBB- S	BB+ S	BBB **	BBB N
Fitch	BBB- S	BBB S	N.R.	A S	BBB S	BBB S	BBB+ S	N.R.	BBB- S	BBB S	BBB **	BBB- P	BBB S	BBB- S	BBB- S	BBB+ **	BBB+ S
Credit Metrics																	
Debt / BOE	\$6.28	\$3.94	\$0.79	\$3.47	\$0.90	\$0.82	\$3.39	\$0.84	\$1.42	\$2.90	\$5.62	\$4.28	\$1.22	\$2.71	\$5.87	\$2.07	\$2.29
Debt / PD BOE	\$6.70	\$7.10	\$1.17	\$5.01	\$1.19	\$3.30	\$4.36	\$1.63	\$2.03	\$4.20	\$9.85	\$6.65	\$1.54	\$4.78	\$8.30	\$2.33	\$3.63
Net Debt / PD BOE	\$6.58	\$7.05	\$1.16	\$2.53	\$0.73	\$2.72	\$3.82	(\$0.65)	\$2.00	\$3.64	\$7.52	\$6.44	\$1.50	\$4.78	\$8.11	\$2.28	\$3.05
Debt / EBITDAX (LTM)	1.1x	1.2x	0.7x	0.7x	0.5x	0.7x	0.8x	0.3x	2.1x	1.0x	1.5x	1.2x	2.3x	1.5x	1.7x	0.5x	0.9x
Net Debt / EBITDAX (LTM)	1.0x	1.2x	0.7x	0.3x	0.3x	0.6x	0.7x	-0.1x	2.1x	0.9x	1.2x	1.2x	2.2x	1.5x	1.6x	0.5x	0.7x
Debt / CFO (LTM)	1.6x	1.4x	0.8x	0.9x	0.5x	0.8x	0.9x	0.3x	2.2x	1.1x	1.9x	1.3x	2.5x	1.7x	1.5x	0.5x	1.3x
LTM EBITDAX / Interest	14.5x	15.7x	27.1x	32.1x	73.2x	19.6x	20.5x	66.5x	11.9x	21.0x	10.7x	15.6x	8.8x	12.9x	14.8x	67.7x	18.1x
Operating Results																	
Total debt at 3Q23	\$5,584	\$7,349	\$8,576	\$19,063	\$2,167	\$5,331	\$6,162	\$3,806	\$5,916	\$6,230	\$8,548	\$5,726	\$2,672	\$6,163	\$25,892	\$4,924	\$11,156
Total debt at YE22	5,453	8,210	8,444	16,643	2,181	6,497	6,440	5,078	5,679	6,248	8,281	5,923	2,692	3,570	26,664	4,904	11,524
Change in total debt	131	(861)	132	2,420	(14)	(1,166)	(278)	(1,272)	237	(18)	267	(197)	(20)	2,593	(773)	20	(368)
Cash at 3Q23	95	49	92	9,446	847	930	761	5,326	65	830	2,018	174	55	3	611	98	1,759
Cash at YE22	245	138	679	9,243	673	3,338	1,454	5,972	1,459	164	2,486	334	46	5	984	1,032	1,461
Change in cash	(150)	(89)	(587)	203	174	(2,408)	(693)	(646)	(1,394)	666	(468)	(160)	9	(2)	(373)	(934)	298
EBITDAX (LTM)	5,280	6,125	11,890	27,519	4,464	7,773	7,683	12,560	2,840	6,182	5,562	4,715	1,165	4,038	15,456	9,539	12,889
Interest (LTM)	365	391	439	857	61	397	375	189	238	294	521	302	132	312	1,046	141	711
Expenses / Boe																	
3-year average RRC	\$13.44	\$12.44	\$3.09	\$19.43	\$20.83	\$7.12	\$11.52	\$6.33	\$3.50	\$10.73	\$9.93	\$16.96	\$4.69	\$6.14	\$7.46	\$13.10	NI 51-101
Production expenses	14.44	11.38	15.54	17.47	6.12	52.55	12.58	13.40	7.48	10.80	20.58	14.18	5.61	16.13	19.34	12.74	
E&P G&A	3.21	1.81	0.80	1.09	1.71	2.20	1.78	1.71	0.78	0.97	1.75	2.46	1.35	2.26	4.54	1.39	
E&P interest	2.21	2.05	1.06	1.41	0.30	1.62	1.66	0.50	0.77	1.07	3.18	1.50	0.91	1.67	2.11	0.53	
Total cost	\$33.29	\$27.68	20.49	\$39.39	\$28.96	\$63.49	\$27.54	\$21.94	\$12.53	\$23.56	\$35.44	\$35.10	\$12.55	\$26.20	\$33.45	\$27.76	
Breakeven Price																	
Breakeven price	\$42.42	\$39.21	\$30.41	\$47.83	\$66.86	\$95.22	\$41.14	\$30.19	\$31.53	\$32.73	\$49.57	\$56.17	\$36.43	\$45.37	\$48.75	\$38.32	N/A
Price realization factor	78%	71%	67%	82%	43%	67%	67%	73%	40%	72%	71%	62%	34%	58%	69%	72%	
Reserves and LTM Production																	
Total reserves (MMBoe)	854	1,864	10,741	5,497	2,399	4,400	1,815	4,238	4,167	2,033	1,256	1,338	695	2,273	3,817	2,377	4,181
Crude & NGL (MMBls)	582	890	8,700	4,036	537	4,144	1,286	2,806	196	1,555	1,011	955	0	1,142	2,759	1,710	4,181
Gas (Bcf)	1,632	5,845	12,247	8,767	11,173	1,538	3,175	8,591	23,825	2,869	1,470	2,295	4,171	6,786	6,350	3,997	2
% Crude & NGL	68%	48%	81%	73%	22%	94%	71%	66%	5%	76%	80%	71%	0%	50%	72%	72%	100%
% Gas	32%	52%	19%	27%	78%	6%	29%	34%	95%	24%	20%	29%	100%	50%	28%	28%	0%
Reserve life	6.2	10.4	26.2	8.4	11.6	15.5	7.6	12.2	13.1	13.0	8.9	9.5	11.2	11.4	8.3	9.4	15.6
% Proved developed	94%	56%	67%	69%	76%	25%	78%	52%	70%	69%	57%	64%	79%	57%	71%	89%	63%
Proved developed (MMBoe)	801	1,035	7,198	3,806	1,817	1,100	1,413	2,185	2,919	1,404	717	862	552	1,289	2,698	2,118	2,639
Crude & NGL (MMBls)	529	454	6,369	2,744	393	899	987	1,509	162	1,050	552	585	0	617	1,972	1,522	2,639
Gas (Bcf)	1,632	3,487	4,975	6,370	8,543	1,208	2,553	4,057	16,541	2,123	989	1,659	3,313	4,031	4,358	3,574	2
% Crude & NGL	66%	44%	88%	72%	22%	82%	70%	69%	6%	75%	77%	68%	0%	48%	73%	72%	100%
% Gas	34%	56%	12%	28%	78%	18%	30%	31%	94%	25%	23%	32%	100%	52%	27%	28%	0%
Reserve life	5.9	5.8	17.6	5.8	8.8	3.9	5.9	6.3	9.2	8.9	5.1	6.1	8.9	6.5	5.9	8.4	9.8
Total production (mboe/d)	375	492	1,123	1,793	567	778	651	955	873	430	386	388	170	545	1,259	694	734
Crude & NGL (mbbl/d)	242	285	787	1,275	95	641	477	683	46	342	287	271	0	275	946	539	734
Gas (mmcf/d)	796	1,247	2,012	3,106	2,828	826	1,047	1,634	4,959	528	594	702	1,020	1,621	1,875	929	0
% Crude & NGL	65%	58%	70%	71%	17%	82%	73%	71%	5%	80%	74%	70%	0%	50%	75%	78%	100%
% Gas	35%	42%	30%	29%	83%	18%	27%	29%	95%	20%	26%	30%	100%	50%	25%	22%	0%

Source: Company/Partnership Filings, Credit Rating Agencies, BofA Global Research

*BofA does not have coverage on this name

Note: 3-year average RRC adjusted for negative reserve revisions due to lower commodity prices

Note: NFG results for fiscal 4Q23 and YE23, CNQC, CVECN, and SUCN converted to USD

BofA GLOBAL RESEARCH

Exhibit 26: MLPs & Pipelines – Summary Financial Statistics – Third Quarter 2023

Financial Statistics for U.S. Midstream companies as of 3Q23

	BWP	ENBCN	EPD	ET	KMI	MPLX	OKE	PAA	TRGP	TRPCN	WES	WMB	Median
Credit Ratings													
Moody's	Baa2	Baa1	A3	Baa3	Baa2	Baa2	Baa2	Baa3	Baa3	Baa2	Baa3	Baa2	
S&P	BBB-	BBB+	A-	BBB	BBB	BBB	BBB	BBB	BBB-	BBB+	BBB-	BBB	
Fitch	BBB	BBB+	A-	BBB-	BBB	BBB	BBB	BBB-	BBB-	BBB+	BBB-	BBB	
Credit Outlook													
Moody's	Stable	Neg	Stable	Pos	Stable	Stable	Stable	Pos	Pos	Stable	Stable	Stable	
S&P	Stable	Neg	Stable	Stable	Stable	Stable	Stable	Stable	Pos	Neg	Stable	Stable	
Fitch	Stable	Stable	Stable	Pos	Stable	Stable	Stable	Pos	Pos	Stable	Stable	Stable	
Credit Metrics													Median
Debt / LTM EBITDA	3.5x	4.6x	3.1x	4.0x	4.2x	3.6x	4.6x	3.3x	3.8x	5.6x	3.6x	4.0x	3.9x
Net Debt / LTM EBITDA	3.2x	4.5x	3.0x	4.0x	4.2x	3.4x	4.6x	3.2x	3.8x	5.4x	3.3x	3.6x	3.7x
LTM EBITDA / Interest	5.8x	4.3x	6.6x	5.0x	4.1x	6.2x	6.1x	6.7x	4.9x	3.3x	5.9x	5.2x	5.5x
Total Debt / Capitalization	35%	51%	49%	58%	50%	62%	57%	42%	75%	65%	71%	64%	58%
Operating Results													Total
Total debt at 3Q23	\$3,236	\$54,743	\$27,768	\$51,123	\$30,993	\$21,290	\$21,950	\$9,153	\$12,920	\$44,535	\$7,262	\$25,669	\$310,642
Total debt at YE22	3,233	58,450	27,147	51,288	31,673	20,929	13,621	9,592	11,536	40,063	6,785	22,904	297,221
Change in total debt	3	(3,707)	621	(165)	(680)	362	8,329	(439)	1,384	4,471	477	2,765	13,420
Shareholders' equity at 3Q23	5,971	52,784	29,370	37,520	31,581	12,831	16,299	12,403	4,378	23,656	2,978	14,308	244,078
Shareholders' equity at YE22	5,702	48,071	28,850	37,634	32,114	13,030	6,494	12,179	4,982	24,249	3,120	14,010	230,434
Change in shareholders' equity	269	4,713	520	(114)	(533)	(199)	9,805	224	(604)	(593)	(142)	298	13,644
Cash at 3Q23	265	1,921	314	514	80	960	284	260	140	1,425	484	2,074	8,720
Cash at YE22	216	635	76	257	745	238	220	401	219	457	286	152	3,903
Change in cash	49	1,286	238	257	(665)	722	64	(141)	(80)	967	198	1,922	4,818
EBITDA (LTM)	917	11,806	9,088	12,727	7,342	5,971	4,761	2,752	3,406	7,979	2,035	6,484	75,268
Interest (LTM)	159	2,716	1,367	2,565	1,771	966	775	408	693	2,437	346	1,249	15,451
Distribution													Median
LTM Distribution Coverage	N.A.	N.A.	1.8x	1.7x	N.A.	1.5x	N.A.	2.6x	N.A.	N.A.	N.A.	N.A.	1.7x
Market cap	N.A.	70,994	56,990	44,925	37,609	35,543	38,518	10,823	19,236	36,580	10,718	43,040	
Enterprise value	N.A.	123,816	84,444	95,533	68,522	55,873	60,184	19,716	32,017	79,690	17,495	66,635	
Enterprise value / EBITDA	N.A.	10.5x	9.3x	7.5x	9.3x	9.4x	12.6x	7.2x	9.4x	10.0x	8.6x	10.3x	9.4x
Quarterly dividend/distribution per share/unit	N.A.	\$0.89	\$0.50	\$0.31	\$0.28	\$0.85	\$0.96	\$0.27	\$0.50	\$0.93	\$0.58	\$0.45	
Share/unit price	N.A.	\$33.40	\$26.24	\$13.36	\$16.92	\$35.50	\$66.12	\$15.44	\$86.27	\$36.58	\$28.24	\$35.38	
Dividend/distribution yield	N.A.	8.0%	7.6%	9.4%	6.7%	9.6%	5.8%	6.9%	2.3%	7.7%	8.1%	5.1%	7.6%
Business Mix													
Pipelines	100%	80%	59%	67%	78%	68%	11%	N.A.	43%	89%	N.A.	N.A.	
Terminals & Storage					13%			N.A.					
Gathering & Processing			15%	19%		32%	25%	N.A.	57%		N.A.	N.A.	
Fractionation			9%				64%				N.A.	N.A.	
Oil & Gas					8%							N.A.	
Marketing								N.A.				N.A.	
Propane													
Utility		12%											
Other		8%	17%	14%						11%	N.A.	N.A.	

Source: Company/Partnership Filings, Credit Rating Agencies, BofA Global Research

Note: Market cap, enterprise value, EV/EBITDA, unit price, and distribution yield are as of 11/16/23

Note: ENBCN, EPD, ET, MPLX, PAA, and TRPCN total debt and shareholders equity is adjusted for equity content of hybrids and/or 50% rating agencies' treatment of the equity credit for the Preferred Units; ENBCN and TRPCN converted to USD

BofA GLOBAL RESEARCH



**Exhibit 27: Summary Financial Statistics – Third Quarter 2023**

Financial Statistics for Refining companies as of 3Q23

High Grade Refining Companies

Credit Ratings	DINO*	MPC*	PSX*	VLO*	
Moody's	Baa3	Baa2	A3	Baa2	
S&P	BBB-	BBB	BBB+	BBB	
Fitch	BBB-	BBB	N.R.	BBB	
Credit Outlook					
Moody's	Stable	Stable	Stable	Stable	
S&P	Stable	Stable	Stable	Stable	
Fitch	Stable	Stable	N.R.	Stable	
Credit Metrics					Median
Debt / LTM EBITDA	0.8x	1.4x	1.7x	0.7x	1.1x
Net Debt / LTM EBITDA	0.2x	0.7x	1.4x	0.3x	0.5x
LTM EBITDA / Interest	19.2x	29.0x	13.3x	28.5x	23.9x
Total Debt / Capitalization	23%	46%	38%	29%	33%
Operating Results					Total
Total debt at 3Q23	\$3,169	\$27,282	\$19,444	\$11,441	\$61,336
Total debt at YE22	3,255	26,700	17,190	11,635	58,780
Change in total debt	(86)	582	2,254	(194)	2,556
Shareholders' equity at 3Q23	10,615	31,828	31,989	28,057	102,489
Shareholders' equity at YE22	10,018	34,119	34,106	25,468	103,711
Change in shareholders' equity	598	(2,291)	(2,117)	2,589	(1,221)
Cash at 3Q23	2,215	13,056	3,539	5,831	24,641
Cash at YE22	1,665	11,770	6,133	4,862	24,430
Change in cash	550	1,286	(2,594)	969	211
EBITDA (LTM)	3,897	19,408	11,623	17,358	52,286
Interest (LTM)	203	670	872	608	2,353
Throughput Capacity by Region**					
PADD I	-	-	258	-	-
PADD II	269	960	380	285	-
PADD III	376	1,322	604	2,055	-
PADD IV	-	66	66	-	-
PADD V	-	550	364	305	-
International	-	-	279	505	-
Total	645	2,898	1,961	3,150	-
Business Mix					
Refining	72%	72%	52%	98%	-
Retail	20%	-	26%	-	-
Pipelines	8%	29%	8%	-	-
Chemicals	-	-	18%	-	-
Ethanol	-	-	(3%)	2%	-

Source: Company/Partnership Filings, Credit Rating Agencies, BofA Global Research

*BofA does not have coverage on this name

**DINO's PADD III throughput consists of Puget Sound (PADD V), Navajo (PADD III) and Wood Cross (PADD IV) refineries

BofA GLOBAL RESEARCH

Exhibit 28: Oil Field Service Companies – Summary Financials – Third Quarter 2023

Financial Statistics for Service companies as of 3Q23

High Grade Oil Field Service Companies

Credit Ratings	BKR*	HAL*	HP*	NOV*	SLB*	
Moody's	A3	A3	Baa1	Baa2	A2	
S&P	A-	BBB+	BBB+	BBB	A	
Credit Outlook						
Moody's	Stable	Stable	Stable	Stable	Pos	
S&P	Stable	Stable	Stable	Stable	Stable	
Credit Metrics						Median
Debt / EBITDA (LTM)	1.8x	1.6x	0.6x	1.7x	1.7x	1.7x
Net Debt / EBITDA (LTM)	1.0x	1.2x	0.3x	1.2x	1.3x	1.2x
EBITDA / Interest (LTM)	15.5x	14.7x	53.0x	15.4x	15.2x	15.4x
Debt / Capitalization	30%	46%	16%	24%	40%	30%
Operating Results						Total
Total debt at 3Q23	\$6,659	\$7,783	\$545	\$1,729	\$13,145	\$29,861
Total debt at YE22	6,657	7,928	543	1,730	12,226	29,084
Change in total debt	2	(145)	3	(1)	919	778
Cash at 3Q23	3,201	2,036	257	513	3,735	9,742
Cash at YE22	2,488	2,346	232	1,069	2,894	9,029
Change in cash	713	(310)	25	(556)	841	713
EBITDA (LTM)	3,618	4,979	916	1,002	7,521	18,036
Interest (LTM)	234	338	17	65	494	1,148
Revenue by Region						
North America	N/A	47%	92%	40%	20%	
Europe / Africa / Russia	N/A	12%	0%	8%	25%	
Middle East / Asia	N/A	24%	2%	16%	34%	
Latin America / Other	N/A	17%	7%	37%	20%	

Source: Company/Partnership Filings, Credit Rating Agencies, BofA Global Research

*BofA does not have coverage on this name

Note: HP results for 4Q23 and YE23

BofA GLOBAL RESEARCH

Valuation & risk

The Williams Comp (WMB)

The Williams Companies, Inc. (WMB) is a publicly traded midstream corporation that operates through multiple geographic segments.

WMB's ability to produce FCF after dividends and its leverage target of 3.65x in 2023 continues to be highly attractive. WMB is also well positioned for the energy transition due to its exposure to long haul natural gas assets, as well as its increased exposure to the Haynesville after acquiring Trace Midstream's G&P assets. We also view the smaller bolt-on M&A announced during 3Q earnings (\$1.27b acquisition) positively as investors had concerns that WMB could have been looking at a much larger transaction. We further note that the company's high-quality nature should support of bonds heading into 2024. Combined with supportive fundamentals, we believe WMB's spread discount to other large cap peers represents attractive value. As a result, we think an OW rec is appropriate for WMB.

Risks to our rec: new project execution risk, spills and other operational disruptions that can cause environmental damage, event risk in the form of M&A, changing cost of capital, regulatory changes, and new-issue overhang.

Analyst Certification

I, Daniel Lungo, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Security/Loan pricing

The Williams Companies / WMB

	Amt		Ratings			Yield	Spread
Security		Maturity date	Moody's/S&P/Fitch	Price	Price date	(%)	(bps)
8.75, Senior, USD, 2032:B	445	15-MAR-2032	Baa2/BBB/BBB	120.18	04-Jan-2024	5.64	167
4.55, Senior, USD, 2024:B	1,250	24-JUN-2024	Baa2/BBB/BBB	99.47	04-Jan-2024	5.71	31
5.75, Senior, USD, 2044:B	650	24-JUN-2044	Baa2/BBB/BBB	99.31	04-Jan-2024	5.81	149
6.3, Senior, USD, 2040:B	1,250	15-APR-2040	Baa2/BBB/BBB	105.22	04-Jan-2024	5.80	161
4.3, Senior, USD, 2024:B	1,000	04-MAR-2024	Baa2/BBB/BBB	99.76	04-Jan-2024	5.68	32
4, Senior, USD, 2025:B	750	15-SEP-2025	Baa2/BBB/BBB	97.98	04-Jan-2024	5.26	75
5.1, Senior, USD, 2045:B	1,000	15-SEP-2045	Baa2/BBB/BBB	92.60	04-Jan-2024	5.70	136
3.75, Senior, USD, 2027:B	1,450	15-JUN-2027	Baa2/BBB/BBB	95.87	04-Jan-2024	5.07	94
4.85, Senior, USD, 2048:B	800	01-MAR-2048	Baa2/BBB/BBB	89.22	04-Jan-2024	5.68	134
2.6, Senior, USD, 2031:B	1,500	15-MAR-2031	Baa2/BBB/BBB	84.81	04-Jan-2024	5.15	118
3.5, Senior, USD, 2051:B	650	15-OCT-2051	Baa2/BBB/BBB	71.08	04-Jan-2024	5.55	134
4.65, Senior, USD, 2032:B	1,000	15-Aug-2032	Baa2/BBB	96.04	04-Jan-2024	5.23	125
5.3, Senior, USD, 2052:B	750	15-Aug-2052	Baa2/BBB/BBB	95.08	04-Jan-2024	5.65	148
5.3, Senior, USD, 2028:B	900	15-Aug-2028	Baa2/BBB/BBB	101.29	04-Jan-2024	4.98	94

For pricing information refer to "Other Important Disclosures" below.

B=Bond; L=Loan; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Disclosures

Important Disclosures

Credit opinion history

The Williams Companies / WMB

Company	Date ^{R1}	Action	Recommendation	Price
The Williams Companies / WMB	31-Dec-2020		Marketweight	
	17-Mar-2022	Upgrade	Overweight	
	14-Oct-2022	Downgrade	Marketweight	
	06-Sep-2023	Upgrade	Overweight	
	27-Dec-2023	Restricted	NA	
Security	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	116.43
	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
4.55, Senior, USD, 2024:B	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	98.85
	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
5.75, Senior, USD, 2044:B	06-Sep-2023	Upgrade	Overweight	93.64
	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	
6.3, Senior, USD, 2040:B	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	101.48
	27-Dec-2023	Restricted	NA	NA
4.3, Senior, USD, 2024:B	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	99.12
	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
4, Senior, USD, 2025:B	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	96.78
	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
5.1, Senior, USD, 2045:B	06-Sep-2023	Upgrade	Overweight	87.15
	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	
3.75, Senior, USD, 2027:B	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	93.93
	27-Dec-2023	Restricted	NA	NA
4.85, Senior, USD, 2048:B	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	84.12
	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
2.6, Senior, USD, 2031:B	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	81.57
	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
3.5, Senior, USD, 2051:B	06-Sep-2023	Upgrade	Overweight	66.12
	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	
4.65, Senior, USD, 2032:B	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	93.35
	27-Dec-2023	Restricted	NA	NA
5.3, Senior, USD, 2052:B	05-Jan-2024	Coverage Resumed	Overweight	
	31-Dec-2022		Marketweight	
	06-Sep-2023	Upgrade	Overweight	88.81
	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	
5.3, Senior, USD, 2028:B	10-Aug-2023	New Issue	Marketweight	
	11-Aug-2023	Added to iQ Model	Marketweight	99.53
	06-Sep-2023	Upgrade	Overweight	99.19
	27-Dec-2023	Restricted	NA	NA
	05-Jan-2024	Coverage Resumed	Overweight	



The Williams Companies / WMB

Company	Date ^{R1}	Action	Recommendation
Table reflects credit opinion history as of previous business day's close. ^{R1} First date of recommendation within the last 36 months, if for an issuer or within the last 12 months, if for a security or loan. The investment opinion system is contained at the end of the report under the heading "BofA Global Research Credit Opinion Key."			
Pricing information in the table is provided for each action where available. In the case of bonds, loans, capital securities and equity preferreds, the price shown reflects the nominal cash price for the security; and in the case of CDS, the price shown reflects the spread, on the date of the relevant action.			
B=Bond; L=Loan; CS=Capital Security (Not including Equity Preferred); EP=Equity Preferred; CDS=Credit Default Swap			

BofA Global Research Credit Opinion Key

BofA Global Research provides recommendations on an issuer's bonds (including corporate and sovereign external debt securities), loans, capital securities, equity preferreds and CDS as described below. Convertible securities are not rated. An issuer level recommendation may also be provided for an issuer as explained below. BofA Global Research credit recommendations are assigned using a three-month time horizon.

Issuer Recommendations: If an issuer credit recommendation is provided, it is applicable to bonds and capital securities of the issuer except bonds and capital securities specifically referenced in the report with a different credit recommendation. Where there is no issuer credit recommendation, only individual bonds and capital securities with specific recommendations are covered. Loans, CDS and equity preferreds are rated separately and issuer recommendations do not apply to them.

BofA Global Research credit recommendations are assigned using a three-month time horizon:

Overweight: Spreads and/or excess returns are likely to outperform the relevant and comparable market over the next three months.

Marketweight: Spreads and/or excess returns are likely to perform in-line with the relevant and comparable market over the next three months.

Underweight: Spreads and/or excess returns are likely to underperform the relevant and comparable market over the next three months.

BofA Global Research uses the following rating system with respect to **Credit Default Swaps (CDS):**

Buy Protection: Buy CDS, therefore going short credit risk.

Neutral: No purchase or sale of CDS is recommended.

Sell Protection: Sell CDS, therefore going long credit risk.

Corporate Credit Issuer Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R2}	Count	Percent
Buy	144	37.21%	Buy	119	82.64%
Hold	193	49.87%	Hold	163	84.46%
Sell	50	12.92%	Sell	37	74.00%

^{R2} Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only corporate credit issuer recommendations. A corporate credit issuer rated Overweight is included as a Buy, a corporate credit issuer rated Marketweight is included as a Hold, and a corporate credit issuer rated Underweight is included as a Sell.

Credit Opinion History Tables for the securities referenced in this research report are available on the [Price Charts and Credit Opinion History Tables website](#), or call 1-800-MERRILL to have them mailed.

BofAS or an affiliate was a manager of a public offering of securities of this issuer within the last 12 months: The Williams Comp.

The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: The Williams Comp.

BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: The Williams Comp.

The issuer is or was, within the last 12 months, a non-securities business client of BofAS and/or one or more of its affiliates: The Williams Comp.

BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: The Williams Comp.

BofAS or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer or an affiliate of the issuer within the next three months: The Williams Comp.

BofAS together with its affiliates beneficially owns one percent or more of the common stock of this issuer. If this report was issued on or after the 9th day of the month, it reflects the ownership position on the last day of the previous month. Reports issued before the 9th day of a month reflect the ownership position at the end of the second month preceding the date of the report: The Williams Comp.

BofAS or one of its affiliates has a significant financial interest in the fixed income instruments of the issuer. If this report was issued on or after the 15th day of the month, it reflects a significant financial interest on the last day of the previous month. Reports issued before the 15th day of the month reflect a significant financial interest at the end of the second month preceding the report: The Williams Comp.

BofAS or one of its affiliates trades or may trade as principal in the debt securities (or in related derivatives) that are the subject of this research report: The Williams Comp.

The issuer is or was, within the last 12 months, a securities business client (non-investment banking) of BofAS and/or one or more of its affiliates: The Williams Comp.

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

BofA Securities fixed income analysts regularly interact with sales and trading desk personnel in connection with their research, including to ascertain pricing and liquidity in the fixed income markets.

Other Important Disclosures

From time to time research analysts conduct site visits of covered issuers. BofA Global Research policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits.

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

This report may refer to fixed income securities or other financial instruments that may not be offered or sold in one or more states or jurisdictions, or to certain categories of investors, including retail investors. Readers of this report are advised that any discussion, recommendation or other mention of such instruments is not a solicitation or offer to transact in such

instruments. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor for information relating to such instruments.

Rule 144A securities may be offered or sold only to persons in the U.S. who are Qualified Institutional Buyers within the meaning of Rule 144A under the Securities Act of 1933, as amended. SECURITIES OR OTHER FINANCIAL INSTRUMENTS DISCUSSED HEREIN MAY BE RATED BELOW INVESTMENT GRADE AND SHOULD THEREFORE ONLY BE CONSIDERED FOR INCLUSION IN ACCOUNTS QUALIFIED FOR SPECULATIVE INVESTMENT.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

The securities or other financial instruments discussed in this report may be traded over-the-counter. Retail sales and/or distribution of this report may be made only in states where these instruments are exempt from registration or have been qualified for sale.

Officers of BofAS or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

This report, and the securities or other financial instruments discussed herein, may not be eligible for distribution or sale in all countries or to certain categories of investors, including retail investors.

Information relating to Affiliates of BofAS, MLPF&S and Distribution of Affiliate Research Reports:

Refer to [BofA Global Research policies relating to conflicts of interest](#).

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofam.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSCF); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Canadian Investment Regulatory Organization; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSCF; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the [Electronic Communications Disclaimers](#) for further information.

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to

executing any short idea contained in this report.

This report may contain a trading idea or recommendation which highlights a specific identified near-term catalyst or event impacting a security, issuer, industry sector or the market generally that presents a transaction opportunity, but does not have any impact on the analyst's particular "Overweight" or "Underweight" rating (which is based on a three month trade horizon). Trading ideas and recommendations may differ directionally from the analyst's rating on a security or issuer because they reflect the impact of a near-term catalyst or event.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information.

In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

Copyright and General Information:

Copyright 2024 Bank of America Corporation. All rights reserved. iQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities.

Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Securities in connection with the legal proceedings or matters relevant to such proceedings.

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Subject to the quiet period applicable under laws of the various jurisdictions in which we distribute research reports and other legal and BofA Securities policy-related restrictions on the publication of research reports, fundamental equity reports are produced on a regular basis as necessary to keep the investment recommendation current.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.