

Pampa Energia

4Q23: soft results, but focus on next steps

Maintain Rating: BUY | PO: 62.00 USD | Price: 41.85 USD

Soft operations; positive oil & gas reserves

Pampa reported soft but mostly in-line 4Q23 results with adj, EBITDA at US\$143mn, down 14% YoY. The EBITDA decrease was mostly driven by an 8% drop in oil and gas production due to weak demand in Argentina and lower gas prices due to less exports (upstream EBITDA -20% vs BofAe and -31% YoY). The miss in the upstream segment was offset by a beat in power generation (EBITDA +8% YoY and +26% vs BofAe) due to higher renewables output. Despite soft 4Q23, we maintain our Buy rating due to good long-term fundamentals on gas production growth and attractive valuation. At current price we see Pampa trading at 2.2x EV/EBITDA 24e (39% discount to 8y average).

Adj. EBITDA at US\$143mn (-14% YoY but in-line vs BofAe)

Pampa reported results were impacted by one-offs in the quarter: 1) US\$22mn of late payment interests and 2) US\$38mn impairment in the gas upstream business. Adjusting by one-offs, Pampa adj. EBITDA reached US\$143mn, down 14% YoY but in-line vs BofAe. Into the bottom-line, Pampa reported a US\$80mn positive financial result but a US\$151mn impact of a non-cash deferred taxes. As a result, Pampa reported a US\$155mn net loss. Net debt decreased US\$64mn QoQ, 0.9x Net Debt/EBITDA FY23.

Proven oil & gas reserves +11% YoY (+20 Mboe)

As a positive highlight, Pampa announced a +11% YoY net increase (+23% gross, exproduction) in its proven gas reserves driven by a good exploratory campaign in nonconventional fields. In our estimates, it could represent a +2% NPV vs our base-case.

We maintain our Buy rating with US\$62 PO

Our constructive view on Pampa is based on: 1) good position to capture gas production growth in Argentina, 2) predictable cash flow within Argentina coverage (85% EBITDA linked to USD). In addition, we see Pampa benefiting from potential regulation changes: 1) lower restriction to gas exports, 2) better remuneration of legacy power generation, and 3) regulatory de-risking of TGS and Transener equity stakes.

Estimates(Dec) (US\$)	2022A	2023A	2024E	2025E	2026E
EPS	8.26	12.30	6.86	6.53	7.27
GAAP EPS	6.36	11.13	5.66	5.35	5.43
EPS Change (YoY)	68.6%	48.9%	-44.2%	-4.8%	11.3%
Consensus EPS (Bloomberg)			5.54	(8.82)	NA
DPS	0	0	0	0	0
Common EPS (ArP)	26,978.73	91,053.39	145,046.81	138,069.34	153,715.79
Common DPS (ArP)	0	0	0	0	0
Valuation (Dec)					
P/E	5.1x	3.4x	6.1x	6.4x	5.8x
GAAP P/E	6.6x	3.8x	7.4x	7.8x	7.7x
EV / EBITDA*	78.1x	75.2x	68.1x	70.2x	67.7x
Free Cash Flow Yield*	0.7%	0.8%	0.3%	0.4%	0.5%
* For full definitions of <i>IQ</i> method SM measures, see page 5.					

>> Employed by a non-US affiliate of BofAS and is not registered/qualified as a research analyst under the FINRA rules.

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 6 to 9. Analyst Certification on page 4. Price
Objective Basis/Risk on page 4.

Timestamp: 07 March 2024 05:52AM EST

07 March 2024

Equity

Gustavo Faria >> Research Analyst Merrill Lynch (Brazil) +55 11 2188 4295 gustavo.faria@bofa.com

Arthur Pereira, CFA >> Research Analyst Merrill Lynch (Brazil) +55 11 2188 4157 arthur.pereira@bofa.com

Stock Data

Price (ADR / Common) 41.85 USD / 1.715.60 ARS Price Objective 62.00 USD / 5,580.00 ARS 7-Jan-2024 / 7-Jan-2024 Date Established Investment Opinion 26.86 USD - 52.17 USD 52-Week Range Market Value (mn) 57.062 USD Free Float Average Daily Value 6.00 USD Shares Outstanding (mn) 1.363.5 / 54.5 BofA Ticker / Exchange PAM / NYS BofA Ticker / Exchange PPENF / BUE Bloomherg / Reuters PAM US / PAM N ROE (2024E) 11.9% Net Dbt to Eqty (Dec-2023A) 146%

Refer to "Other Important Disclosures" for information on certain BofA Securities entities that take responsibility for the information herein in particular jurisdictions.

iQprofile[™] Pampa Energia

iQmethod [™] – Bus Performance*					
(US\$ Millions)	2022A	2023A	2024E	2025E	2026
Return on Capital Employed	9.8%	8.2%	6.9%	6.3%	6.3%
Return on Equity	22.5%	25.7%	11.9%	10.1%	10.2%
Operating Margin	48.8%	52.7%	57.7%	58.8%	59.4%
Free Cash Flow	416	480	179	233	267
iQmethod [™] – Quality of Earnings*					
(US\$ Millions)	2022A	2023A	2024E	2025E	2026
Cash Realization Ratio	1.9x	1.7x	1.5x	1.7x	1.6
Asset Replacement Ratio	2.1x	2.4x	1.2x	1.2x	1.23
Tax Rate	26.1%	22.2%	35.0%	35.0%	35.0%
Net Debt-to-Equity Ratio	40.0%	14.6%	7.6%	0.6%	-6.0%
Interest Cover	2.4x	1.7x	7.7x	6.4x	4.9
Income Statement Data (Dec)					
(US\$ Millions)	2022A	2023A	2024E	2025E	2026
Sales	1,829	1,792	1,740	1,704	1,714
% Change	21.3%	-2.0%	-2.9%	-2.1%	0.6%
Gross Profit	893	945	1,004	1,001	1,017
% Change	17.8%	5.9%	6.3%	-0.3%	1.6%
EBITDA	738	766	847	822	852
% Change	10.6%	3.9%	10.5%	-2.9%	3.7%
Net Interest & Other Income	(50)	293	(58)	(67)	(97
Net Income (Adjusted)	457	673	374	356	396
% Change	46.0%	47.3%	-44.4%	-4.8%	11.2%
Free Cash Flow Data (Dec)					
(US\$ Millions)	2022A	2023A	2024E	2025E	2026
Net Income from Cont Operations (GAAP)	352	609	308	292	296
Depreciation & Amortization	212	270	315	306	300
Change in Working Capital	552	150	(32)	47	40
Deferred Taxation Charge	NA	NA	NA	NA	N/
Other Adjustments, Net	(249)	91	(35)	(35)	(10
Capital Expenditure	(451)	(640)	(377)	(377)	(359
Free Cash Flow	416	480	179	233	267
% Change	188.6%	15.4%	-62.7%	30.1%	14.9%
Share / Issue Repurchase	NA	NA	NA	NA	N/
Cost of Dividends Paid	0	0	0	0	(
Change in Debt	174	45	(72)	(22)	237
Balance Sheet Data (Dec)					
(US\$ Millions)	2022A	2023A	2024E	2025E	2026
Cash & Equivalents	700	1,225	1,332	1,543	2,047
Trade Receivables	470	409	403	379	357
Other Current Assets	174	190	187	166	143
Property, Plant & Equipment	NA	NA	NA	NA	N/
Other Non-Current Assets	3,397	3,593	3,716	3,846	4,005
Total Assets	4,742	5,416	5,637	5,933	6,552
Short-Term Debt	273	0	0	0	(
Other Current Liabilities	358	398	355	357	44
Long-Term Debt	1,340	1,658	1,587	1,565	1,802
	107	384	345	306	202
Other Non-Current Liabilities	487				
Total Liabilities	2,458	2,440	2,287	2,227	2,450
Total Liabilities Total Equity	2,458 2,284	2,440 2,976	2,287 3,350	2,227 3,706	2,450 4,102
Total Liabilities	2,458	2,440	2,287	2,227	2,4

Company Sector

Electric Utilities

Company Description

Pampa Energia is an integrated Power Utility and E&P company with operations in power generation, Oil & Gas upstream and petrochemicals. Pampa also has the cocontrol stake of TGS (9,233km gas transport pipeline and NGL production) and Transener (21,697km power transmission lines - 86% of market share).

Investment Rationale

We expect Pampa to continue benefiting from its earnings growth momentum driven mostly by gas production business (with 9% EBITDA CAGR 2022-25). Another positive is its mixed business profile with >85% EBITDA linked to US Dollars, providing protection against macro uncertainty in Argentina. We thus rate Pampa Energia Buy.

Stock Data

Average Daily Volume	143,488
Shares / Common	25.00

Quarterly Earnings Estimates

	2023	2024
Q1	2.56A	1.70E
Q2	3.01A	1.59E
Q3	2.80A	2.23E
Q4	3.95A	1.34E

Key Changes		
(ArP)	Previous	Current
2024E EPS	144,961.06	145,046.81
2025E EPS	137,987.72	138,069.34
2026E EPS	153,624.91	153,715.79



* For full definitions of *IQ*methodSM measures, see page 5.

Pampa 4Q23 results

Exhibit 1: Pampa reported a US\$108mn EBITDA

Pampa consolidated results (US\$mn)

Consolidated (US\$mn)			4Q23A/		4Q23A/
	4Q23A	4Q23E	4Q23E	4Q22A	4Q22A
Net Revenues	362	423	-14%	448	-19%
Cost of Sales	-193	-233	-17%	-228	-15%
Gross Profit	169	190	-11%	220	-23%
Selling expenses	-15	-11	31%	-15	0%
Administrative expenses	-52	-34	55%	-37	41%
Exploration expenses	0	0	0%	0	0%
Other	6	-2	-363%	32	-81%
EBITDA	108	143	-25%	200	-46%
EBITDA Mg.	30%	34%		45%	
(-) D&A	-64	-62	3%	-52	23%
EBIT	44	81	-46%	148	-70%
Interest Income	1	2	-55%	-1	-200%
Interest Expenses	-81	0	0%	-73	11%
Other	166	177	-6%	133	25%
Financial Result	86	180	-52%	59	46%
EBT	130	261	-50%	207	-37%
			0%		0%
Taxes	-249	-91		-98	
Tax Rate (%)	-192%	-35%		-47%	
Equity Income	-36	20	-277%	5	-820%
Net Income	-155	190	-182%	114	-236%

Source: BofA Global Research estimates, company report

BofA GLOBAL RESEARCH

Exhibit 2: Pampa reported a US\$143mn EBITDA, -14% YoY but mostly in-line vs BofAe Pampa adjusted EBITDA (US\$mn)

Adj. EBITDA (US\$mn)			4Q23A/		4Q23A/
	4Q23A	4Q23E	4Q23E	4Q22A	4Q22A
Power Generation	94	74	26%	87	8%
Gas Upstream	50	62	-20%	72	-31%
PetChem	20	18	8%	15	33%
Holding / Eliminations	-21	-12	75%	-8	163%
Adj. EBITDA	143	143	0%	166	-14%
Reported EBITDA	72	163	-56%	205	-65%
(-) Equity Income	36	-20		-5	
(+/-) GenCo adj.	1	0		0	
(+/-) E&P adj.	35	0		3	
(+/-) Holding/other	-1	0		-37	
Adj. EBITDA	143	143	0%	166	-14%
(+) TGS (stake adj.)	-10	31		22	
(+) Transener (stake adj.)	-7	4		-2	
TGS & Transener EBITDA	-17	35	-148%	20	-185%
Adj. EBITDA (stake adj.)	126	178	-29%	186	-32%

Source: BofA Global Research estimates, company report

BofA GLOBAL RESEARCH



Price objective basis & risk

Pampa Energia (PAM / PPENF)

Our US\$62 / AR\$5580 PO for Pampa is based on a DCF, discounting estimated free cash flow to equity at a 14.8% US nominal cost of equity. We apply a reasonable lower cost of equity versus other utilities companies given Pampa's cash-flow profile 85% linked to USD and protected against ARS devaluation. Our key assumptions are: 1) Natural gas production reaching 13.8mcmpd in 2025 according to company guidance, 2) Oil Brent in US\$80/bbl in 2023, US\$90/bbl in 2024 and US\$70/bbl in 2025 onwards and Pampa selling its production with an 10% average discount, 3) Petrochemicals EBITDA growth in-line with Gas Upstream business, 4) Power Generation "Legacy" contracts in-line with Argentina inflation. We assume a 2,280 ARS/USD in FY24.

Upside risks: 1) gas production increase above base-case with NK Pipeline 2nd stage operational start and new sales contracts with CAMMESA or industrials, 2) new power generation growth opportunities with attractive returns, 3) better funding conditions, 4) tariff adjustments for regulated businesses in subsidiaries (TGS and Transener), 5) higher remuneration for legacy generation projects.

Downside risks: 1) delays in start-up of new generation plants and expansion of the electricity transmission system, 2) dependence on gas supply to thermal power plants, 3) below inflation readjustments for legacy power generation contracts, 4) receivables delays in power generation contracts with CAMMESA.

Analyst Certification

We, Gustavo Faria and Arthur Pereira, CFA, hereby certify that the views each of us has expressed in this research report accurately reflect each of our respective personal views about the subject securities and issuers. We also certify that no part of our respective compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Latin America - Utilities Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Alupar	XDFCF	ALUP11 BZ	Arthur Pereira, CFA
	COPEL	ELP	ELP US	Arthur Pereira, CFA
	COPEL PN	XLPUF	CPLE6 BZ	Arthur Pereira, CFA
	Edenor	XEDTF	EDN AR	Gustavo Faria
	Edenor	EDN	EDN US	Gustavo Faria
	Eletrobras	CAIFF	ELET3 BZ	Arthur Pereira, CFA
	Eletrobras	EBR	EBR US	Arthur Pereira, CFA
	Eletrobras-Pref	EBRB	EBR/B US	Arthur Pereira, CFA
	Eletrobras-Pref	CAIGF	ELET6 BZ	Arthur Pereira, CFA
	Energisa S/A	XLXGF	ENGI11 BZ	Arthur Pereira, CFA
	Eneva	XZUMF	ENEV3 BZ	Arthur Pereira, CFA
	Equatorial	XKERF	EQTL3 BZ	Arthur Pereira, CFA
	Neoenergia	XGXGF	NEOE3 BZ	Arthur Pereira, CFA
	Pampa Energia	PPENF	PAMP AR	Gustavo Faria
	Pampa Energia	PAM	PAM US	Gustavo Faria
	SABESP	CSBJF	SBSP3 BZ	Arthur Pereira, CFA
	SABESP	SBS	SBS US	Arthur Pereira, CFA
	Serena Energia	XZQAF	SRNA3 BZ	Arthur Pereira, CFA
NEUTRAL				
	Auren Energia	XZMXF	AURE3 BZ	Arthur Pereira, CFA
	Cemig	CIG	CIG US	Arthur Pereira, CFA
	Cemig	CEMCF	CMIG4 BZ	Arthur Pereira, CFA
	Central Puerto	CEPU	CEPU US	Gustavo Faria
	Central Puerto	CEPUF	CEPU AR	Gustavo Faria
	COPASA	CSAOF	CSMG3 BZ	Arthur Pereira, CFA



Latin America - Utilities Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	TAESA	XTAEF	TAEE11 BZ	Arthur Pereira, CFA
UNDERPERFORM				
	AES Brasil	XDFDF	AESB3 BZ	Arthur Pereira, CFA
	CPFL Energia	XPFGF	CPFE3 BZ	Arthur Pereira, CFA
	CTEEP	XOOTF	TRPL4 BZ	Arthur Pereira, CFA
	Engie Brasil	XZDDF	EGIE3 BZ	Arthur Pereira, CFA
	Sanepar	XJALF	SAPR11 BZ	Arthur Pereira, CFA
RSTR				
	Ambipar	XAPEF	AMBP3 BZ	Arthur Pereira, CFA

IQmethodSM Measures Definitions

Business Performance	Numerator	Denominator
Return On Capital Employed	NOPAT = (EBIT + Interest Income) × (1 - Tax Rate) + Goodwill Amortization	Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill
		Amortization
Return On Equity	Net Income	Shareholders' Equity
Operating Margin	Operating Profit	Sales
Earnings Growth	Expected 5 Year CAGR From Latest Actual	N/A
Free Cash Flow	Cash Flow From Operations – Total Capex	N/A
Quality of Earnings	Numerator	Denominator
Cash Realization Ratio	Cash Flow From Operations	Net Income
Asset Replacement Ratio	Capex	Depreciation
Tax Rate	Tax Charge	Pre-Tax Income
Net Debt-To-Equity Ratio	Net Debt = Total Debt - Cash & Equivalents	Total Equity
Interest Cover	EBIT	Interest Expense
Valuation Toolkit	Numerator	Denominator
Price / Earnings Ratio	Current Share Price	Diluted Earnings Per Share (Basis As Specified)
Price / Book Value	Current Share Price	Shareholders' Equity / Current Basic Shares
Dividend Yield	Annualised Declared Cash Dividend	Current Share Price
Free Cash Flow Yield	Cash Flow From Operations – Total Capex	Market Cap = Current Share Price × Current Basic Shares
Enterprise Value / Sales	EV = Current Share Price × Current Shares + Minority Equity + Net Debt +	Sales
	Other LT Liabilities	
EV / EBITDA	Enterprise Value	Basic EBIT + Depreciation + Amortization

Remethod 3* is the set of BofA Global Research standard measures that serve to maintain global consistency under three broad headings: Business Performance, Quality of Earnings, and validations. The key features of iQmethod are: A consistently structured, detailed, and transparent methodology. Guidelines to maximize the effectiveness of the comparative valuation process, and to identify some common pitfalls.

Ratatabase is our real-time global research database that is sourced directly from our equity analysts' earnings models and includes forecasted as well as historical data for income statements, balance sheets, and cash flow statements for companies covered by BofA Global Research.

*IQ*profile SM, *IQ*method SM are service marks of Bank of America Corporation. *IQ*database ® is a registered service mark of Bank of America Corporation.



Disclosures

Important Disclosures

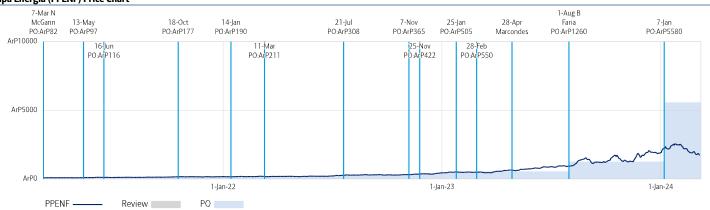
Pampa Energia (PAM) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Pampa Energia (PPENF) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Equity Investment Rating Distribution: Utilities Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	72	46.45%	Buy	52	72.22%
Hold	45	29.03%	Hold	32	71.11%
Sell	38	24.52%	Sell	21	55.26%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

R1 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 stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.



FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. VOLATILITY RISK RATINGS, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. INVESTMENT RATINGS reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

Investment rating Total return expectation (within 12-month period of date of initial rating) Ratings dispersion guidelines for coverage cluster^{R2}

 Buy
 ≥ 10%
 ≤ 70%

 Neutral
 ≥ 0%
 ≤ 30%

 Underperform
 N/A
 ≥ 20%

INCOME RATINGS, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8 - same/lower (dividend not considered to be secure) and 9 - pays no cash dividend. Coverage Cluster is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Global Research report referencing the stock.

Price Charts for the securities referenced in this research report are available on the Price Charts website, or call 1-800-MERRILL to have them mailed.

BofAS or one of its affiliates acts as a market maker for the equity securities recommended in the report: Pampa Energia.

BofAS or one of its affiliates is willing to sell to, or buy from, clients the common equity of the issuer on a principal basis: Pampa Energia.

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.

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.

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.

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. 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.

Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:

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 Prudential 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.bofaml.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 (Hong Kong): Merrill (Hong Kong): Merr (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch (Canada): Merrill Lynch (Canada): Merrill Lynch (Mexico): Merrill Ly 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): Merrill Lynch (Israel): 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 HKSFC; 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 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



R2 Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

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.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned herein. Investors in such securities and instruments, including ADRs, 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 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 inform

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.



BofA GLOBAL RESEARCH

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.

