

## US Utilities &amp; IPPs

## Latest Winter Storm Stress: Watching Texas as a Test Case

Industry Overview

## Texas under-forecasts load again: a new record in sight

Much of the United States power grid is being stressed by cold weather which raises investor memories of Winter Storms Uri (2021) and Elliott (2022). Fortunately to date, there have not been widespread reliability events. Most major utilities and grid operators have issued warnings of tight supply/demand conditions with some requesting conservation efforts. The Electric Reliability Council of Texas (ERCOT) projected record demand and issued conservation appeals for January 15 and 16<sup>th</sup>. ERCOT forecasted up to 86.9GW of demand on January 16<sup>th</sup> at 8AM local time with ~\$1,000/MWh day-ahead pricing. This would be a fresh all-time record and 10%+ higher than the 78.9GW peak forecasted in the Monthly Outlook for Resource Adequacy (MORA) for December under 'winter storm Elliott weather conditions'. See background here: [Texas Power Grid Remains Tight into Winter: Will Policy Change? The key risk, 27 November 2023](#)

## Supply performing decently but still important tests ahead

It generally appears that dispatchable supply performed reasonable with 10-15GW of unplanned/forced outages January 9-14 but unplanned outages rose to 17GW on January 15<sup>th</sup>. This is similar to Winter Storm Elliott (~15GW peak) but far less than ~30GW peak during Winter Storm Uri (in a smaller market at the time). We will be closely monitoring ERCOT's unplanned outage report which shows derates with a few days lag. Ahead of the event, there were small outages for NRG Energy (Cedar Bayou, San Jacinto), Vistra (Martin Lake, Oak Grove, DeCordova Storage, Wise, Coletto Creek, Brightside Solar, and Upton Solar+Storage), Talen Energy (Barney Davis), Avangrid (Baffin, Barton Chapel, Peñascal), AES Corp (Buffalo Gap), and Constellation Energy (Colorado Bend II). These were mostly short outages but came before the critical coldest periods. Outages are unfortunately normal and to be expected during particularly cold and hot periods.

## Texas power grid is increasingly vulnerable

Texas has been relying heavily on its new ERCOT Contingency Reserve Service (ECRS) ancillary product even grid conditions are normal. For example, on January 15<sup>th</sup> there was 1.4-1.7GW ECRS despite 6-11GW operating reserves. YTD 2024 average Texas power prices have been weak \$20/MWh, still with some negative pricing hours when wind/solar oversupply, but this masks the fragility of the market. Although ERCOT projects [48% average reserve margin 2025-2033 \(details here\)](#), this is almost entirely dependent on the buildout of solar with the grid increasingly reliant on non-dispatchable resources. *The question is if these increasingly frequent power events will strain the political will and lead to out-of-market subsidized natural gas generation via legislation or other.*

## Texas weather is an IPP risk and a utility opportunity

We continue to view extreme weather events more of a risk than an opportunity for independent power producers as most have obligations to deliver power via retail or hedges. There continue to be transmission constraints in these extreme weather events and resiliency (and economic) transmission investments will likely increase from the investor-owned utilities such as CenterPoint (CNP) and Sempra (SRE via Oncor).

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ERCOT: Electric Reliability Council of Texas  
MORA: Monthly Outlook for Resource Adequacy  
ECRS: ERCOT Contingency Reserve Service  
GW: Gigawatt | MW: Megawatt  
MWh: Megawatt-hour

## Watching the outages for the major generators

Below we show select outages that began in 2024 for Avangrid, NRG Energy, Constellation Energy, and Vistra/Luminant. This is not a comprehensive list and more data is available from ERCOT. Texas offers the highest transparency into its operating fleet, requiring power plants to disclose forced outage rates with just a few day lag. Output is available from the Nuclear Regulatory Commission (NRC) and most grid operators show nuclear output which should be stable. We maintain Buy on NRG, VST, CNP, and SRE which each have attractive relative risk-adjusted returns. In contrast, we maintain Underperform on AGR which is relatively expensive with Texas a small component of the portfolio. We maintain Neutral on shares of AES and CEG which have more balanced risk/return profiles.

As the data below shows, most of the outages are small 10-60MW but there are some 100MW+ events. Companies with excess capacity (ie unhedged or uncommitted) and strong performance can have excess profits; however, few investors we speak to capitalize any positive windfall. Outage updates will be critical to co-specific updates.

### Exhibit 1: Select 2024 Unplanned Texas Outages

Most outages are small but even small events warrant monitoring as these could be indicators of future risks

Resource Unit Code	Company	Fuel Type	Effective MW Outage	Actual Outage Start	Planned End Date	Actual End Date
BAFFIN_UNIT1	AVANGRID RENEWABLES LLC	Wind	44	Jan 9, 2024 3:44:00 PM	Jan 16, 2024 10:00:00 PM	Jan 12, 2024 6:35:00 PM
BAFFIN_UNIT1	AVANGRID RENEWABLES LLC	Wind	34	Jan 12, 2024 6:35:00 PM	Jan 16, 2024 10:00:00 PM	
BAFFIN_UNIT2	AVANGRID RENEWABLES LLC	Wind	32	Jan 9, 2024 3:46:00 PM	Jan 16, 2024 10:00:00 PM	Jan 12, 2024 6:36:00 PM
BAFFIN_UNIT2	AVANGRID RENEWABLES LLC	Wind	24	Jan 12, 2024 6:36:00 PM	Jan 16, 2024 10:00:00 PM	
BRTSW_BCW1	AVANGRID RENEWABLES LLC	Wind	52	Jan 12, 2024 8:34:00 AM	Jan 16, 2024 10:00:00 PM	Jan 12, 2024 6:06:00 PM
BRTSW_BCW1	AVANGRID RENEWABLES LLC	Wind	32	Jan 9, 2024 5:43:00 PM	Jan 16, 2024 10:00:00 PM	Jan 12, 2024 8:33:00 AM
BRTSW_BCW1	AVANGRID RENEWABLES LLC	Wind	34	Jan 12, 2024 6:06:00 PM	Jan 16, 2024 10:00:00 PM	Jan 14, 2024 9:59:00 AM
PENA_UNIT1	AVANGRID TEXAS RENEWABLES LLC	Wind	10	Jan 2, 2024 6:00:00 PM	Jan 16, 2024 8:00:00 PM	Jan 14, 2024 10:20:00 AM
PENA_UNIT2	AVANGRID TEXAS RENEWABLES LLC	Wind	17	Jan 10, 2024 6:30:00 PM	Jan 17, 2024 10:00:00 PM	
B_DAVIS_B_DAVIG2	BARNEY DAVIS LLC (NRG)	Natural Gas	105	Jan 6, 2024 12:01:00 AM	Jan 12, 2024 12:59:00 PM	Jan 12, 2024 12:59:00 PM
B_DAVIS_B_DAVIG2	BARNEY DAVIS LLC (NRG)	Natural Gas	105	Jan 12, 2024 1:00:00 PM	Jan 14, 2024 11:00:00 PM	Jan 14, 2024 11:00:00 AM
B_DAVIS_B_DAVIG3	BARNEY DAVIS LLC (NRG)	Natural Gas	55	Jan 6, 2024 12:01:00 AM	Jan 12, 2024 12:59:00 PM	Jan 12, 2024 12:59:00 PM
B_DAVIS_B_DAVIG3	BARNEY DAVIS LLC (NRG)	Natural Gas	55	Jan 12, 2024 1:00:00 PM	Jan 14, 2024 11:00:00 PM	Jan 14, 2024 11:00:00 AM
B_DAVIS_B_DAVIG4	BARNEY DAVIS LLC (NRG)	Natural Gas	55	Jan 6, 2024 12:01:00 AM	Jan 12, 2024 12:59:00 PM	Jan 12, 2024 12:59:00 PM
B_DAVIS_B_DAVIG4	BARNEY DAVIS LLC (NRG)	Natural Gas	55	Jan 12, 2024 1:00:00 PM	Jan 14, 2024 11:00:00 PM	Jan 14, 2024 11:00:00 AM
CBY_CBY_G1	NRG TEXAS POWER LLC	Natural Gas	745	Jan 12, 2024 8:53:00 PM	Jan 13, 2024 11:59:00 PM	Jan 13, 2024 2:37:00 PM
CBY_CBY_G1	NRG TEXAS POWER LLC	Natural Gas	375	Jan 12, 2024 5:48:00 PM	Jan 12, 2024 9:00:00 PM	Jan 12, 2024 8:53:00 PM
SJS_SJS_G1	NRG TEXAS POWER LLC	Natural Gas	15	Jan 8, 2024 3:37:00 AM	Jan 31, 2024 11:59:00 PM	
CBECII_STG9	CONSTELLATION ENERGY GENERATION LLC	Natural Gas	71	Jan 9, 2024 11:50:00 PM	Mar 2, 2024 12:01:00 AM	
BRIGHTSD_UNIT1	LUMINANT ENERGY COMPANY LLC	Solar	2	Jan 1, 2024 11:03:00 AM	Jun 30, 2024 11:59:00 PM	
CASL_GAP_BATTERY1	LUMINANT ENERGY COMPANY LLC	N/A	2	Jan 2, 2024 1:41:00 PM	Jun 30, 2024 11:59:00 PM	
CASL_GAP_UNIT1	LUMINANT ENERGY COMPANY LLC	Solar	25	Jan 2, 2024 9:25:00 AM	Jun 30, 2024 11:59:00 PM	
COLETO_COLETOG1	LUMINANT ENERGY COMPANY LLC	Subbituminous Coal	15	Jan 7, 2024 5:57:00 PM	Jan 24, 2024 11:59:00 PM	
DCSES_BES4	LUMINANT ENERGY COMPANY LLC	Other	6	Jan 12, 2024 10:07:00 AM	Jan 19, 2024 3:59:00 PM	Jan 12, 2024 2:51:00 PM
DCSES_BES4	LUMINANT ENERGY COMPANY LLC	Other	2	Jan 12, 2024 2:51:00 PM	Jan 19, 2024 3:59:00 PM	Jan 14, 2024 2:05:00 PM
DCSES_BES4	LUMINANT ENERGY COMPANY LLC	Other	2	Jan 11, 2024 1:14:00 AM	Jan 12, 2024 3:59:00 PM	Jan 12, 2024 10:07:00 AM
MLSES_UNIT2	LUMINANT ENERGY COMPANY LLC	Lignite	30	Jan 11, 2024 9:11:00 PM	Jan 31, 2024 11:59:00 PM	Jan 14, 2024 9:57:00 AM
MLSES_UNIT2	LUMINANT ENERGY COMPANY LLC	Lignite	330	Jan 12, 2024 5:33:00 PM	Jan 12, 2024 9:00:00 PM	Jan 12, 2024 6:22:00 PM
OGSES_UNIT1A	LUMINANT ENERGY COMPANY LLC	Lignite	45	Jan 11, 2024 9:10:00 PM	Jan 18, 2024 8:00:00 AM	Jan 13, 2024 6:34:00 AM
OGSES_UNIT1A	LUMINANT ENERGY COMPANY LLC	Lignite	45	Jan 12, 2024 1:37:00 PM	Jan 15, 2024 7:59:00 PM	
OGSES_UNIT1A	LUMINANT ENERGY COMPANY LLC	Lignite	45	Jan 12, 2024 12:23:00 PM	Jan 12, 2024 7:59:00 PM	Jan 12, 2024 1:37:00 PM
OGSES_UNIT2	LUMINANT ENERGY COMPANY LLC	Lignite	345	Jan 12, 2024 3:00:00 PM	Jan 13, 2024 10:00:00 AM	Jan 13, 2024 6:40:00 AM
OGSES_UNIT2	LUMINANT ENERGY COMPANY LLC	Lignite	30	Jan 11, 2024 9:20:00 PM	Jan 18, 2024 8:00:00 AM	Jan 14, 2024 8:37:00 AM
OGSES_UNIT2	LUMINANT ENERGY COMPANY LLC	Lignite	40	Jan 12, 2024 1:12:00 PM	Jan 13, 2024 6:00:00 AM	Jan 13, 2024 4:13:00 AM
WCPP_CT1	LUMINANT ENERGY COMPANY LLC	Natural Gas	264	Jan 12, 2024 4:11:00 PM	Jan 12, 2024 6:00:00 PM	Jan 12, 2024 4:50:00 PM

Source: ERCOT

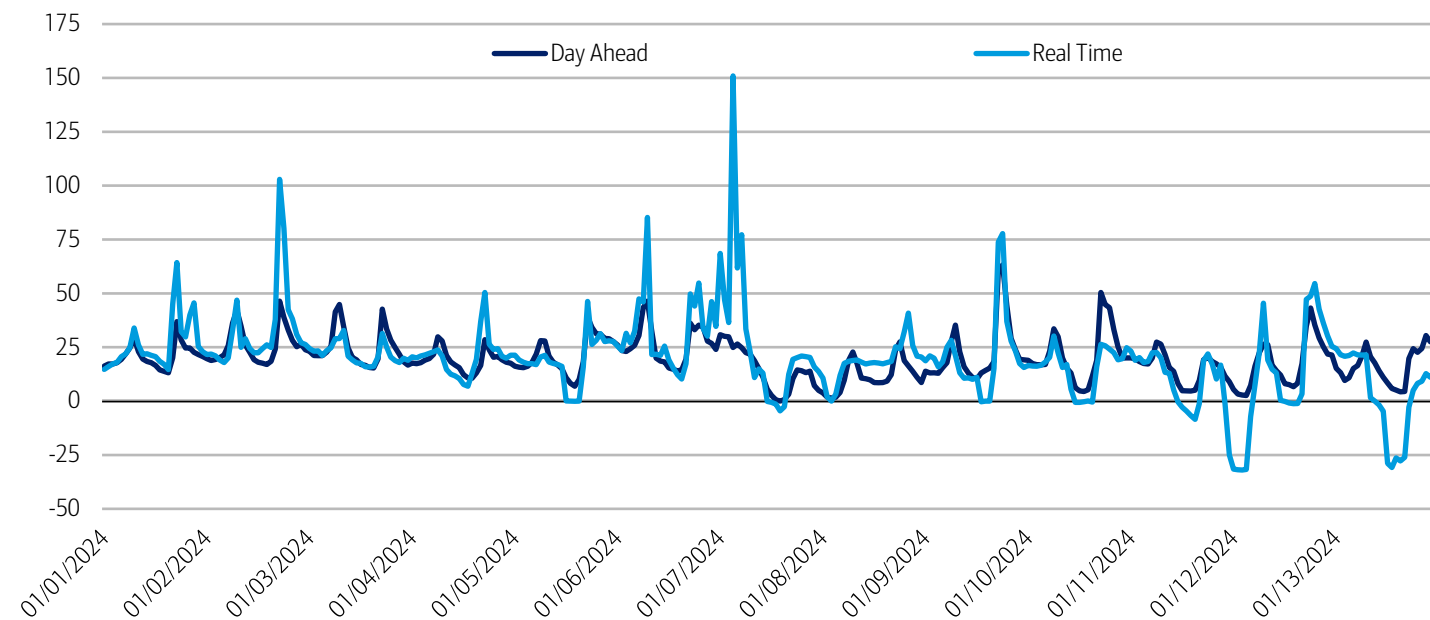


## Texas day-ahead vs real time settled power prices

In 2024, average Texas power prices have been low and under \$50/MWh at peak for most days. January 15+ will be important tests.

### Exhibit 2: Texas day-ahead vs real time settled power prices \$/MWh

Real time power prices will exceed day ahead when there is a positive supply demand imbalance (more demand than supply) and the converse is true as well



Source: ERCOT

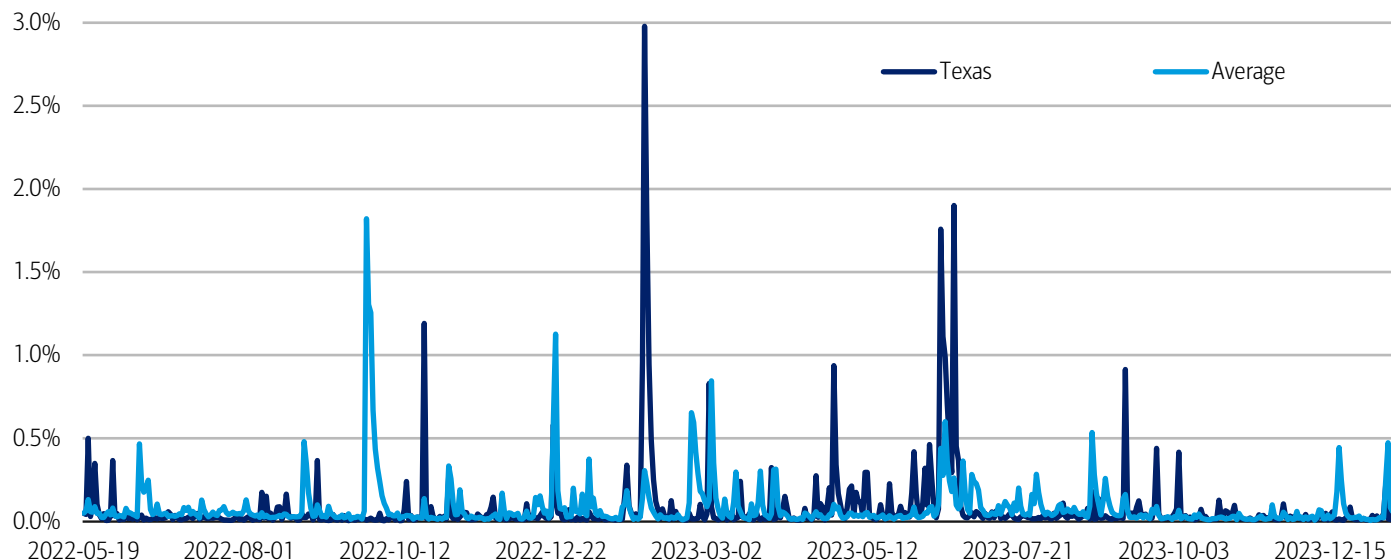
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### Putting performance in perspective: limited customer outages

As of 8PM January 15<sup>th</sup>, there was limited outages in Texas (~13k of 13Mn+) and there were below average 0.9% customers out January 12-15 despite the challenging physical conditions. To the extent that there are not major power outages, this would be positive for the Texas market construct. Expect IPPs to react constructively on the back of the grid integrity so far into Tuesday trading: especially VST.

### Exhibit 3: Average Daily Percentage of Customer Outages: Texas vs US Average

Texas has more outages than average in Winter Storm Elliott in late 2022 but below average in January 2024



Source: Generac

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## BofA Global Research Reports

## Title: Subtitle

[US Utilities & Clean Tech: ERCOT: A tale of moderating demand and material solar delays](#)  
[US Electric Utilities & IPPs: Texas Power Grid Remains Tight into Winter: Will Policy Change? The key risk](#)  
[US Electric Utilities & IPPs: ERCOT: Revisiting ancillaries and market monitor report](#)  
[US Utilities & IPPs: August brought the heat, but couldn't take down the fleet – ERCOT outage report](#)  
[US Utilities & IPPs: ERCOT Dive: Lone Star State eyes big build cycle, potential repowerings, too](#)

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 18 September 2023  
 24 July 2023

## Exhibit 4: Primary stocks mentioned in this report

Prices and ratings for primary stocks mentioned in this report

BofA Ticker	Bloomberg ticker	Company name	Price	Rating
NRG	NRG US	NRG Energy	US\$ 50.72	B-1-7
VST	VST US	Vistra Energy	US\$ 39.22	B-1-7
CEG	CEG US	Constellation Energy	US\$ 112.91	B-2-7
SRE	SRE US	Sempra Energy	US\$ 75.41	B-1-7
CNP	CNP US	CenterPoint Energy	US\$ 28.57	B-1-7
AES	AES US	AES Corp	US\$ 18.44	B-2-7
AGR	AGR US	Avangrid	US\$ 32.83	A-3-7

Source: BofA Global Research

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## Price objective basis &amp; risk

## AES (AES)

Our price objective is \$18 and is based on a sum of the parts analysis applying a blended valuation approach which is the summation of: 1) EV/EBITDA approach for US Renewable Generation using a 10.0x 2025E base for US peers 2.) NPV approach for DevCo using a 15% discount on 5.0GW+ of annual renewables beyond '25, 3.) EV/EBITDA approach for Legacy Southland (US), 4.) NPV for Warrior Run (US) 5.) P/E approach for US Utilities using a 14.9x 2025E base for US peers plus a premium/discount, 6.) EV/EBITDA approach for LATAM non-public subsidiaries, 7.) MTM value of publicly listed LATAM subsidiaries, 8.) Asia Generation is marked to carrying value while the Asian LNG import facility is valued on EPS accretion relative to total build cost. We also credit the company with its investment in Uplight and Fluence.

Risks are: 1) regulatory, legislative, and political changes, 2) international currencies devaluing against the US dollar, 3) changes in value of Fluence (FLNC) subsidiary stock, 4) overall inability to execute on the renewables plan, 5) ability to control costs, 6) financing needs, and 7) tax policies. Upside risk from declining rates & improved commodity backdrop enabling robust divestment values on infra biz. Downside risk principally tied to timely execution of renewable execution ramp.

## Avangrid (AGR)

Our \$31 PO is based on a 2026 sum of the parts analysis. The core utilities are valued on by applying discounts to the base sector P/E of 14.1x/14.2x for electric/gas due to below average growth and regulatory jurisdictions. Both electric and gas peer P/Es are grossed up +5% to reflect capital appreciation across the sector. The renewables are valued at approximately 10x EV/EBITDA, consistent with peers while offshore wind is valued using discounted cash flows at a 15% discount rate. Future potential value creation from the renewable development 'DevCo' is provided as well. Lastly

parent/HoldCo financing offsets are netted-out.

Upside and downside risks to achievement of the PO and estimates are 1) earned ROEs and capital expenditures at the utilities, 2) utility capital expenditure forecasts, 3) regulatory/political/legislative outcomes, 4) equity and debt needs, 5) renewables construction - primarily offshore wind, 6) Iberdrola owns over 80% of AGR common stock, limiting float and presenting a potential for governance conflicts, despite the BoD being majority unaffiliated with Iberdrola, 7) natural disasters, 8) commodity and interest rate fluctuations, and 9) management changes.

### **CenterPoint Energy (CNP)**

Our CenterPoint Energy PO is \$30 using a 2025E sum-of-the-parts methodology. We apply the 14.0x electric and 14.7x gas base multiples. The base multiples are grossed-up +5% to reflect sector capital appreciation, a consistent approach across the coverage universe. We apply a 15% (2.5x) premium due to above-average growth and constructive jurisdictions.

Risks to achievement of the Price Objective are changes in 1) legislative, regulatory, and political outcomes, 2) capital expenditure forecasts and deployments, 3) earned return on equity, 4) asset sales, 5) capital markets access, costs, and needs, 6) interest rates, 7) weather and natural disasters, 8) management changes, and 9) inflation.

### **Constellation Energy Corp (CEG)**

Our \$125 Price Objective is based on a 10.7% 2026E equity Free Cash Flow yield (FCF yield) on blended basis. The 10.7% FCF yield represents a weighted average of 9.6% (first quartile) for the support FCF and 13.0% (third quartile) for merchant FCF, utilizing energy comparables. We discount to 2026 the benefit of the Illinois Carbon Mitigation Credit (CMC) in 2028 back to 2025 at a 10% discount rate: this represents \$10/sh of value. We include \$1/Sh to CEG from the publicly disclosed ownership of NetPower (NPWR).

Risks to achievement of the Price Objective and rating are: 1) changes in energy & capacity prices, 2) retail margins, renewals, win rate, & overall market share, 3) operating, capital, and fuel costs, 4) capital allocation decisions including M&A, growth, and share repurchases, 5) nuclear operational performance, incidents, or accidents, 6) legislative, judicial, and regulatory changes, 7) nuclear fuel costs & availability, 8) change in environmental standards for generation assets, 9) management turnover, 10) pension & nuclear decommissioning trust returns, 11) credit rating agency requirements, 12) interest rates, and 13) NetPower ownership.

### **NRG Energy (NRG)**

Our \$56 price objective is based on our 2025E sum-of-the-parts analysis. We value NRG in six parts based on approximately EV/FCF: (1) 6.5x Legacy Retail, (2) 6.0x Direct Energy, (3) 7.0x Vivint, (4) 5.5x Gas, and (5) 2.0x Coal plus Hedges. The debt and preferred stock obligations are reductions from equity value.

We value Legacy Retail at a slight premium to peers given strong competitive positioning. We value Direct Energy in line with the Legacy Retail portfolio. For Vivint, our target multiple is a discount to NRG's other retail platforms given lower free cash flow conversion. Gas value reflects fair near-term profitability opportunity but limited long-term visibility. Last, our subdued Coal value is driven by limited terminal value for the assets.

Risks to the price objective are changes in 1) commodity prices, 2) operating cost, 3) environmental requirements, 4) cost of capital, 5) retail margins and customer counts, 6) natural disasters, 7) regulatory, legislative, and political changes, 8) customer acquisition



costs, 9) retail competition, 10) pension and nuclear decommissioning trust assets/liabilities, and 11) interest rates.

### **Sempra Energy (SRE)**

Our \$82 PO is based on a sum of the parts valuation of 2025E earnings. The US utilities are valued using the electric (16.3x) and gas (16.2x) average P/E that we grossed-up +5% to account for sector growth. We apply a -2x discounted valuation to the California gas utility (SoCal Gas) for concerns about long-term use of natural gas. We apply a -1x discounted valuation to the California electric utility (SDG&E) to reflect the wildfire risk exposure. We apply a +2x premium to the TX utility (Oncor) for above average growth and high visibility into rider recovery. The Infrastructure segment (SIP) is valued at 10x EV/EBITDA, an implied premium to the Mexican market (5.5x) and select premium US midstream comparable (Williams and TC Energy at approximately 9-10x) on EV/EBITDA due to its long duration contracted cash flows. The parent drag is treated on a balanced blend of P/E and HoldCo debt and cash netting.

Risks to achievement to our price objective are: 1) Wildfire and other natural disasters/catastrophic events, 2) regulatory outcomes, 3) interest rates, 4) equity needs, 5) earned returns and operating costs, 6) LNG development, 7) ability to deploy capital, and 8) environmental, social, & governance [ESG] profile.

### **Vistra Energy (VST)**

Our \$44 price objective is based on a 2025E SOTP valuation. For Vistra Vision, we arrive at a 7.7x blended EV/EBITDA. We apply a 9.0x EV/FCF multiple to nuclear (10.5x for Texas), which we believe fairly represents the risk/reward profile of the assets. For Renewables and Storage, we apply a 12.0x EV/FCF multiple given the accelerating nature of the end markets. For Retail, we apply a 7.0x EV/FCF multiple, consistent with peers. For Vistra Tradition, we arrive at a 4.8x blended EV/EBITDA multiple. We apply a 5.5x EV/FCF multiple to Gas Generation (7.5x for Texas) given favorable spark spreads and end market demand dynamics and a 1.5x EV/FCF multiple to Coal Generation (5.5x for Texas) which we believe appropriately captures the limited long-term value of the assets.

Downside risks to our PO are 1) changes to regulatory, political, or legislative standards, 2) wholesale power, natural gas, & capacity prices, 3) competitive & regulatory change to retail businesses, principally in Texas, 4) operational performance, 5) development of new renewables and storage assets, 6) natural disasters, 7) interest rates, 8) nuclear fuel access/cost, and 9) retail market attrition.

## **Analyst Certification**

We, Julien Dumoulin-Smith and Paul Zimbardo, 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.



## North America - Utilities and Alt Energy Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
<b>BUY</b>				
	Alliant Energy Corporation	LNT	LNT US	Julien Dumoulin-Smith
	Array Technologies	ARRY	ARRY US	Julien Dumoulin-Smith
	Atlantica Sustainable Infrastructure	AY	AY US	Julien Dumoulin-Smith
	Atmos Energy Corporation	ATO	ATO US	Julien Dumoulin-Smith
	CenterPoint Energy	CNP	CNP US	Julien Dumoulin-Smith
	Cheniere Energy Inc	LNG	LNG US	Julien Dumoulin-Smith
	Clearway Energy	CWENA	CWEN/A US	Julien Dumoulin-Smith
	Clearway Energy	CWEN	CWEN US	Julien Dumoulin-Smith
	CMS Energy	CMS	CMS US	Julien Dumoulin-Smith
	Consolidated Edison	ED	ED US	Julien Dumoulin-Smith
	DTE Energy	DTE	DTE US	Julien Dumoulin-Smith
	Duke Energy	DUK	DUK US	Julien Dumoulin-Smith
	Enlight Renewable Energy Ltd	ENLT	ENLT US	Julien Dumoulin-Smith
	Enlight Renewable Energy Ltd	XENLF	ENLT IT	Julien Dumoulin-Smith
	Entergy	ETR	ETR US	Paul Zimbardo
	First Solar, Inc.	FSLR	FSLR US	Julien Dumoulin-Smith
	Fluence Energy	FLNC	FLNC US	Julien Dumoulin-Smith
	Hannon Armstrong	HASI	HASI US	Julien Dumoulin-Smith
	Hydro One	YH	H CN	Dariusz Lozny, CFA
	MDU Resources Group, Inc.	MDU	MDU US	Dariusz Lozny, CFA
	Nextacker Inc	NXT	NXT US	Julien Dumoulin-Smith
	NiSource Inc	NI	NI US	Julien Dumoulin-Smith
	NorthWestern Corporation	NWE	NWE US	Julien Dumoulin-Smith
	NRG Energy	NRG	NRG US	Julien Dumoulin-Smith
	PG&E Corporation	PCG	PCG US	Julien Dumoulin-Smith
	PNM Resources Inc.	PNM	PNM US	Julien Dumoulin-Smith
	Portland General Electric Company	POR	POR US	Julien Dumoulin-Smith
	PPL Corporation	PPL	PPL US	Paul Zimbardo
	Public Service Enterprise Group	PEG	PEG US	Julien Dumoulin-Smith
	Sempra Energy	SRE	SRE US	Julien Dumoulin-Smith
	Sunnova Energy	NOVA	NOVA US	Julien Dumoulin-Smith
	SunRun	RUN	RUN US	Julien Dumoulin-Smith
	TPI Composites	TPIC	TPIC US	Julien Dumoulin-Smith
	Vistra Energy	VST	VST US	Julien Dumoulin-Smith
	Xcel Energy Inc	XEL	XEL US	Julien Dumoulin-Smith
<b>NEUTRAL</b>				
	AES	AES	AES US	Julien Dumoulin-Smith
	Algonquin Power & Utilities Corp	AQN	AQN US	Dariusz Lozny, CFA
	Algonquin Power & Utilities Corp	YAQN	AQN CN	Dariusz Lozny, CFA
	AltaGas	YALA	ALA CN	Dariusz Lozny, CFA
	Ameren Corporation	AEE	AEE US	Julien Dumoulin-Smith
	Ameresco	AMRC	AMRC US	Julien Dumoulin-Smith
	American Electric Power	AEP	AEP US	Julien Dumoulin-Smith
	Bloom Energy	BE	BE US	Julien Dumoulin-Smith
	ChargePoint Holdings	CHPT	CHPT US	Cameron Lochridge
	Constellation Energy Corp	CEG	CEG US	Paul Zimbardo
	Emera Inc	YEMA	EMA CN	Dariusz Lozny, CFA
	Essential Utilities	WTRG	WTRG US	Julien Dumoulin-Smith
	Evergy, Inc	EVRG	EVRG US	Julien Dumoulin-Smith
	Exelon	EXC	EXC US	Paul Zimbardo
	Generac Holdings Inc.	GNRC	GNRC US	Julien Dumoulin-Smith
	Idacorp	IDA	IDA US	Paul Zimbardo
	Maxeon Solar Technologies	MAXN	MAXN US	Julien Dumoulin-Smith
	New Fortress Energy	NFE	NFE US	Cameron Lochridge
	NextEra Energy	NEE	NEE US	Julien Dumoulin-Smith
	NextEra Energy Partners	NEP	NEP US	Julien Dumoulin-Smith
	OGE Energy Corp	OGE	OGE US	Julien Dumoulin-Smith
	Ormat Technologies	ORA	ORA US	Julien Dumoulin-Smith
	Pinnacle West	PNW	PNW US	Julien Dumoulin-Smith
	Southern Company	SO	SO US	Julien Dumoulin-Smith
	Southwest Gas Holdings	SWX	SWX US	Julien Dumoulin-Smith
	TransAlta Corp	TAC	TAC US	Dariusz Lozny, CFA
	TransAlta Corporation	YTA	TA CN	Dariusz Lozny, CFA

## North America - Utilities and Alt Energy Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
<b>UNDERPERFORM</b>				
	Allete Inc	ALE	ALE US	Julien Dumoulin-Smith
	American Water Works	AWK	AWK US	Julien Dumoulin-Smith
	Avangrid	AGR	AGR US	Paul Zimbardo
	Avista	AVA	AVA US	Julien Dumoulin-Smith
	Black Hills Corporation	BKH	BKH US	Julien Dumoulin-Smith
	Dominion Energy	D	D US	Paul Zimbardo
	Edison International	EIX	EIX US	Paul Zimbardo
	Enphase Energy	ENPH	ENPH US	Julien Dumoulin-Smith
	Eversource Energy	ES	ES US	Paul Zimbardo
	FirstEnergy	FE	FE US	Julien Dumoulin-Smith
	Fortis	YFTS	FTS CN	Julien Dumoulin-Smith
	Fortis Inc	FTS	FTS US	Julien Dumoulin-Smith
	FREYR Battery	FREY	FREY US	Julien Dumoulin-Smith
	FTC Solar	FTCI	FTCI US	Julien Dumoulin-Smith
	Hawaiian Electric Industries	HE	HE US	Julien Dumoulin-Smith
	MGE Energy	MGEE	MGEE US	Julien Dumoulin-Smith
	New Jersey Resources Corp	NJR	NJR US	Julien Dumoulin-Smith
	ONE Gas, Inc.	OGS	OGS US	Julien Dumoulin-Smith
	SolarEdge Technologies	SEDG	SEDG US	Julien Dumoulin-Smith
	Spire	SR	SR US	Julien Dumoulin-Smith
	Stem, Inc.	STEM	STEM US	Julien Dumoulin-Smith
	SunPower Corp.	SPWR	SPWR US	Julien Dumoulin-Smith
	UGI Corp.	UGI	UGI US	Julien Dumoulin-Smith
	WEC Energy Group Inc	WEC	WEC US	Julien Dumoulin-Smith

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## Important Disclosures

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

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	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 <sup>R1</sup>	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%

<sup>R1</sup> 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.



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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster <sup>R2</sup>
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

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