Oncor Electric Delivery Company LLC
Recommended Capital Structure and Cost Rates for Ratemaking Purposes at December 31, 2021

Type Of Capital	Ratios (1)	Cost Rate		Weighted Cost Rate
Long-Term Debt	55.00%	4.39%	(1)	2.41%
Common Equity	45.00%	10.30%	(2)	4.64%
Total	100.00%			7.05%

Notes:

(1) Company-provided.
(2) From page 2 of this Exhibit.

Oncor Electric Delivery Company LLC
Brief Summary of Common Equity Cost Rate

Line No.	Principal Methods	Proxy Group of Fourteen Electric Companies
1.	Discounted Cash Flow Model (DCF) (1)	9.05%
2.	Risk Premium Model (RPM) (2)	10.84%
3.	Capital Asset Pricing Model (CAPM) (3)	12.15%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	12.60%
5.	Indicated Range of Common Equity Cost Rates	9.60% - 11.60%
6.	Recommended Common Equity Cost Rate	10.30%

Notes: (1) From Exhibit DWD-3.
(2) From page 1 of Exhibit DWD-4.
(3) From page 1 of Exhibit DWD-5.
(4) From page 1 of Exhibit DWD-9.

Proxy Group of Fourteen Electric Companies
CAPITALIZATION AND FINANCIAL STATISTICS (1)
2017 - 2021, Inclusive

	2021	2020	2019	2018	2017	
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$34,183.780	$31,746.146	$29,472 393	$27,131 517	$25,522 450	
SHORT-TERM DEBT	$1,152.131	$954.222	$985.672	$1,070.510	$977.275	
TOTAL CAPITAL EMPLOYED	$35,335 911	$32,700.368	$30,458 065	$28,202 027	$26,499.725	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	3.67 %	4.08 %	4.29 %	4.42 %	4.36 %	
PREFERRED STOCK	4.60	5 47	5 17	5 26	4 67	
CAPITAL STRUCTURE RATIOS						5 YEAR AVERAGE
BASED ON TOTAL PERMANENT CAPITAL·						
LONG-TERM DEBT	56.51 %	55.26 %	53.49 %	52.83 %	52.69 %	54.16 %
PREFERRED STOCK	0 61	0.78	0.91	0.91	0.96	0.83
COMMON EQUITY	42.88	43 96	45 60	46 26	46 35	45 01
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL·						
TOTAL DEBT, INCLUDING SHORT-TERM	57 78 %	56.42 %	54 62 %	54.17 %	54.42 %	55 48 %
PREFERRED STOCK	0 58	0.75	0.89	0.88	0.90	0.80
COMMON EQUITY	41 64	42.84	44 49	44.95	44.69	43.72
TOTAL	100.00 %	100.00 %	100.00 %	100 00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	5.38 %	4.15 %	5 43 %	4 84 %	4 62 %	4.88 %
MARKET / AVERAGE BOOK RATIO	190 71	186.80	196 49	191 32	199 93	193.05
DIVIDEND YIELD	3.59	3.65	3 42	3 71	3 48	3.57
DIVIDEND PAYOUT RATIO	71.08	84 32	63 09	69.23	89 30	75.40
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	10 05 %	7 87 %	10 46 %	8 70 %	8 66 %	9 15 %
TOTAL DEBT / EBITDA (3)	5.35 x	6.07 x	4.63 x	5.37 x	4.55 x	5.19 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	9 76 %	11.65 %	13.05 %	17.91 %	17.17 %	13 91 %
TOTAL DEBT / TOTAL CAPITAL	57 78 %	56 42 %	54.62 %	54.17 %	54.42 %	55 48 %

Notes.
(1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group, and are based upon financial statements as originally reported in each year
(2) Computed by relating actual total debt interest or preferred stock dividends booked to average of beginning and ending total debt or preferred stock reported to be outstanding.
(3) Total debt relative to EBITDA (Earnings before Interest, Income Taxes, Depreciation and Amortization)
(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) plus interest charges as a percentage of total debt.

Source of Information· Company Annual Forms 10-K

Capital Structure Based upon Total Permanent Capital for the
Proxy Group of Fourteen Electric Companies
2017 - 2021, Inclusive

	2021	2020	2019	2018	2017	5 YEAR AVERAGE
Alliant Energy Corporation						
Long-Term Debt	55.16 %	53.51 %	53.39 %	53.48 %	52.62 %	53.63 %
Preferred Stock	-	1.58	1.72	1.95	2.16	1.48
Common Equity	44.84	44.91	44.89	44.57	45.22	44.89
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Ameren Corporation						
Long-Term Debt	57.07 %	54.97 %	53.29 %	52.05 %	51.52 %	53.78 %
Preferred Stock	0.56	0.71	0.81	0.88	0.92	0.78
Common Equity	42.37	44.32	45.90	47.07	47.56	45.44
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
American Electric Power Company, Inc.						
Long-Term Debt	59.86 %	60.19 %	57.30 %	55.06 %	53.62 %	57.21 %
Preferred Stock	-	-	-	-	-	-
Common Equity	40.14	39.81	42.70	44.94	46.38	42.79
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Duke Energy Corporation						
Long-Term Debt	56.43 %	55.52 %	55.39 %	55.45 %	55.61 %	55.68 %
Preferred Stock	1.73	1.82	1.87	-	-	1.08
Common Equity	41.84	42.66	42.74	44.55	44.39	43.24
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Edison International						
Long-Term Debt	61.49 %	56.44 %	54.21 %	53.76 %	46.65 %	54.51 %
Preferred Stock	4.63	5.19	6.48	8.02	8.44	6.55
Common Equity	33.88	38.37	39.31	38 22	44.91	38.94
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Entergy Corporation						
Long-Term Debt	68.46 %	66.67 %	63.04 %	64.08 %	64.80 %	65.41 %
Preferred Stock	0.76	0.76	0.90	0.87	0.85	0.83
Common Equity	30.78	32.57	36.06	35.05	34.35	33.76
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Evergy, Inc.						
Long-Term Debt	51.17 %	52 48 %	51.77 %	42.70 %	49.60 %	49.54 %
Preferred Stock	-	-	-	-	-	-
Common Equity	48.83	47.52	48.23	57.30	50.40	50.46
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Eversource Energy						
Long-Term Debt	55.25 %	53.22 %	52.44 %	52.92 %	52.30 %	53.23 %
Preferred Stock	0.47	0.51	0.58	0.63	0.66	0.57
Common Equity	44.28	46.27	46.98	46.45	47.04	46.20
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Capital Structure Based upon Total Permanent Capital for the
Proxy Group of Fourteen Electric Companies
2017 - 2021, Inclusive

	2021	2020	2019	2018	2017	5 YEAR AVERAGE
IDACORP, Inc.						
Long-Term Debt	42.85 %	43.86 %	42.70 %	43.63 %	43.68 %	43.34 %
Preferred Stock	-	-	-	-	-	-
Common Equity	57.15	56.14	57.30	56.37	56.32	56.66
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
NorthWestern Corporation						
Long-Term Debt	52.09 %	52.72 %	52.27 %	51.98 %	50.26 %	51.86 %
Preferred Stock	-	-	-	-	-	-
Common Equity	47.91	47.28	47.73	48.02	49.74	48 14
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
OGE Energy Corporation						
Long-Term Debt	52.57 %	49.04 %	43.56 %	44.00 %	43.78 %	46.59 %
Preferred Stock	-	-	-	-	-	-
Common Equity	47.43	50 96	56.44	56 00	56 22	53.41
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Portland General Electric Company						
Long-Term Debt	54.82 %	53.83 %	50.06 %	49.72 %	50.10 %	51.71 %
Preferred Stock	-	-	-	-	-	-
Common Equity	45.18	46.17	49.94	50.28	49.90	48.29
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
The Southern Company						
Long-Term Debt	64.99 %	63.22 %	61.71 %	63.72 %	66.38 %	64.00 %
Preferred Stock	0.36	0.38	0.40	0 42	0.44	0.40
Common Equity	34.65	36.40	37.89	35.86	33 18	35.60
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Xcel Energy Inc.						
Long-Term Debt	58.91 %	57.93 %	57.77 %	57 01 %	56.66 %	57.66 %
Preferred Stock	-	-	-	-	-	-
Common Equity	41.09	42.07	42.23	42 99	43.34	42.34
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Fourteen Electric Companies						
Long-Term Debt	56.51 %	55.26 %	53.49 %	52.83 %	52.69 %	54.15 %
Preferred Stock	0.61	0.78	0.91	0.91	0.96	0.84
Common Equity	42.88	43.96	45.60	46.26	46.35	45.01
Total Capital	100.00 %	100 00 %	100.00 %	100.00 %	100.00 %	100.00 %

Source of Information
Annual Forms 10-K

Oncor Electric Delivery Company LLC
Operating Subsidiary Company Capital Structures of the
Proxy Group of Fourteen Electric Companies

Company Name	Parent Company Ticker	2021 Common Equity	Preferred Equity	Long-Term Debt	Total Capital
Interstate Power and Light Company	LNT	50.85%	0.00%	49.15%	100.00%
Wisconsin Power and Light Company	LNT	53.75%	0.00%	46.25%	100.00%
Ameren Illinois Company	AEE	55.73%	0.49%	43.78%	100.00%
Union Electric Company	AEE	51.68%	0.71%	47.61%	100.00%
AEP Texas Inc.	AEP	40.96%	0.00%	59.04%	100.00%
Appalachian Power Company	AEP	48.48%	0.00%	51.52%	100.00%
Indiana Michigan Power Company	AEP	46.57%	0.00%	53.43%	100.00%
Kentucky Power Company	AEP	44.22%	0.00%	55.78%	100.00%
Kingsport Power Company	AEP	NA	NA	NA	NA
Ohio Power Company	AEP	48.95%	0.00%	51.05%	100.00%
Public Service Company of Oklahoma	AEP	54.50%	0.00%	45.50%	100.00%
Southwestern Electric Power Company	AEP	48.13%	0.00%	51.87%	100.00%
Wheeling Power Company	AEP	NA	NA	NA	NA
Duke Energy Carolinas, LLC	DUK	51.68%	0.00%	48.32%	100.00%
Duke Energy Florida, LLC	DUK	48.57%	0.00%	51.43%	100.00%
Duke Energy Indiana, LLC	DUK	53.76%	0.00%	46.24%	100.00%
Duke Energy Kentucky, Inc.	DUK	NA	NA	NA	NA
Duke Energy Ohio, Inc.	DUK	58.26%	0.00%	41.74%	100.00%
Duke Energy Progress, LLC	DUK	49.82%	0.00%	50.18%	100.00%
Southern California Edison Company	EIX	42.65%	4.64%	52.71%	100.00%
Entergy Arkansas, LLC	ETR	47.23%	0.00%	52.77%	100.00%
Entergy Louisiana, LLC	ETR	42.99%	0.00%	57.01%	100.00%
Entergy Mississippi, LLC	ETR	45.77%	0.00%	54.23%	100.00%
Entergy New Orleans, LLC	ETR	44.76%	0.00%	55.24%	100.00%
Entergy Texas, Inc.	ETR	50.53%	0.80%	48.67%	100.00%
Evergy Kansas Central, Inc.	EVRG	53.60%	0.00%	46.40%	100.00%
Evergy Kansas South, Inc.	EVRG	NA	NA	NA	NA
Evergy Metro, Inc.	EVRG	50.81%	0.00%	49.19%	100.00%
Evergy Missouri West, Inc.	EVRG	NA	NA	NA	NA
Westar Energy (KPL)	EVRG	NA	NA	NA	NA
NSTAR Electric Company	ES	55.25%	0.48%	44.28%	100.00%
Public Service Company of New Hampshire	ES	48.95%	0.00%	51.05%	100.00%
The Connecticut Light and Power Company	ES	55.02%	1.21%	43.77%	100.00%
Idaho Power Company	IDA	55.19%	0.00%	44.81%	100.00%
NorthWestern Corporation	NWE	47.93%	0.00%	52.07%	100.00%
Oklahoma Gas and Electric Company	OGE	53.53%	0.00%	46.47%	100.00%
Portland General Electric Company	POR	45.18%	0.00%	54.82%	100.00%
Alabama Power Company	SO	51.79%	1.41%	46.80%	100.00%
Georgia Power Company	SO	55.81%	0.00%	44.19%	100.00%
Mississippi Power Company	SO	55.57%	0.00%	44.43%	100.00%
Northern States Power Company	XEL	52.88%	0.00%	47.12%	100.00%
Northern States Power Company	XEL	52.78%	0.00%	47.22%	100.00%
Public Service Company of Colorado	XEL	56.63%	0.00%	43.37%	100.00%
Southwestern Public Service Company	XEL	54.46%	0.00%	45.54%	100.00%
	Minimum	40.96%	0.00%	41.74%	100.00%
	Maximum	58.26%	4.64%	59.04%	100.00%

Source: S&P Global Market Intelligence

Oncor Electric Delivery Company LLC
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for the
Proxy Group of Fourteen Electric Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Proxy Group of Fourteen Electric Companies	Average Dividend Yield (1)	Value Line Projected Five Year Growth in EPS (2)	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth in EPS (3)	Adjusted Dividend Yield (4)	Indicated Common Equity Cost Rate (5)
Alliant Energy Corporation	2.88 %	4.50 %	6.10 %	6.10 %	5.57 %	2.96 %	8.53 %
Ameren Corporation	2.71	6.50	7.50	7.40	7.13	2.81	9.94
American Electric Power Company, Inc.	3.46	6.50	5.80	6.10	6.13	3.57	9.70
Duke Energy Corporation	3.82	7.00	6.10	5.85	6.32	3.94	10.26
Edison International	4.39	NMF	4.00	5.35	4.68	4.49	9.17
Entergy Corporation	3.70	3.00	1.00	6.00	3.33	3.76	7.09
Evergy, Inc	3.55	7.50	6.10	5.12	6.24	3.66	9.90
Eversource Energy	2.97	5.50	6.20	7.10	6.27	3.06	9.33
IDACORP, Inc.	2.76	4.00	4.30	4.40	4.23	2.82	7.05
NorthWestern Corporation	4.33	2.00	3.10	4.50	3.20	4.40	7.60
OGE Energy Corporation	4.36	6.50	3.50	1.90	3.97	4.45	8.42
Portland General Electric Company	3.29	7.00	4.60	4.60	5.40	3.38	8.78
The Southern Company	3.92	5.50	4.00	6.20	5.23	4.02	9.25
Xcel Energy Inc.	2.86	6.00	6.40	6.90	6.43	2.95	9.38
						Average	8.89 %
						Median	9.21 %
						Average of Mean and Median	9.05 %

NA= Not Available
NMF= Not Meaningful Figure

Notes.

(1) Indicated dividend at 03/18/2022 divided by the average closing price of the last 60 trading days ending 03/18/2022 for each company.
(2) From pages 2 through 15 of this Exhibit
(3) Average of columns 2 through 4 excluding negative growth rates.
(4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for Alliant Energy Corporation, 2.88% x (1+(1/2 x 5.57%)) = 2.96%
(5) Column 5 + column 6.

Source of Information.

Value Line Investment Survey
www.zacks.com Downloaded on 03/18/2022
www.yahoo com Downloaded on 03/18/2022

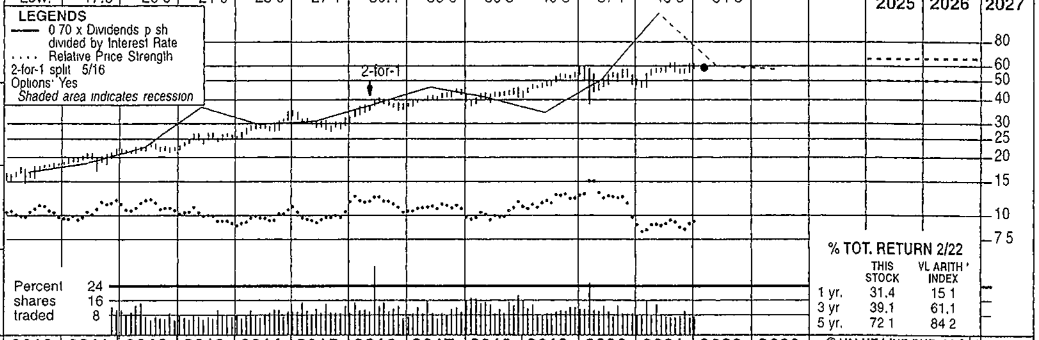
ALLIANT ENERGY NDQ-LNT

RECENT PRICE 58.40 | P/E RATIO 21.9 (Trailing: 22.3 Median: 20.0) | RELATIVE P/E RATIO 1.22 | DIV'D YLD 3.0% | VALUE LINE

TIMELINESS 3 Raised 10/29/21
SAFETY 2 Raised 9/28/07
TECHNICAL 3 Lowered 3/11/22
BETA .85 (1.00 = Market)

High	22.2	23.8	27.1	34.9	35.4	41.0	45.6	46.6	55.4	60.3	62.3	61.9
Low	17.0	20.9	21.9	25.0	27.1	30.4	36.6	36.8	40.8	37.7	46.0	54.8

LEGENDS
— 0.70 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 5/16
Options: Yes
Shaded area indicates recession



Target Price Range 2025 2026 2027

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$50-$78 $64 (10%)

2025-27 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(+10%)	6%
Low	50	(-15%)	Nil

Institutional Decisions

	2Q2021	3Q2021	4Q2021
to Buy	236	237	290
to Sell	237	232	244
Hld's(000)	191641	194869	195770

Percent shares traded 24 16 8

% TOT. RETURN 2/22

	THIS STOCK	VL ARITH.* INDEX
1 yr.	31.4	15.1
3 yr.	39.1	61.1
5 yr.	72.1	84.2

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	© VALUE LINE PUB. LLC	25-27
14.46	15.57	16.67	15.51	15.40	16.51	13.94	14.77	15.10	14.34	14.58	14.62	14.97	14.89	13.67	14.65	*15.55*	*16.10*	Revenues per sh	*17.75*
2.16	2.56	2.28	2.10	2.60	2.75	2.95	3.34	3.49	3.45	3.43	3.97	4.32	4.59	4.92	5.25	*5.55*	*5.90*	"Cash Flow" per sh	*7.00*
1.03	1.35	1.27	.95	1.38	1.38	1.53	1.65	1.74	1.69	1.65	1.99	2.19	2.33	2.47	2.63	*2.75*	*2.90*	Earnings per sh A	*3.25*
.58	.64	.70	.75	.79	.85	.90	.94	1.02	1.10	1.18	1.26	1.34	1.42	1.52	1.61	*1.71*	*1.81*	Div'd Decl'd per sh B ■ †	*2.15*
1.71	2.46	3.98	5.43	3.91	3.03	5.22	3.32	3.78	4.25	5.26	6.34	6.92	6.69	5.47	4.67	*5.90*	*5.90*	Cap'l Spending per sh	*6.25*
11.42	12.15	12.78	12.54	13.05	13.57	14.12	14.79	15.54	16.41	16.96	18.08	19.43	21.24	22.76	23.91	*25.00*	*26.15*	Book Value per sh C	*29.75*
232.25	220.72	220.90	221.31	221.79	222.04	221.97	221.89	221.87	226.92	227.67	231.35	236.06	245.02	249.87	250.47	*251.00*	*251.50*	Common Shs Outst'g D	*253.00*
16.8	15.1	13.4	13.9	12.5	14.5	14.5	15.3	16.6	18.1	22.3	20.6	19.1	21.2	21.2	21.2	*Bold figures are*		Avg Ann'l P/E Ratio	*18.0*
.91	.80	.81	.93	.80	.91	.92	.86	.87	.91	1.17	1.04	1.03	1.13	1.09	1.13	*Value Line*		Relative P/E Ratio	*1.00*
3.3%	3.1%	4.1%	5.7%	4.6%	4.3%	4.1%	3.7%	3.5%	3.6%	3.2%	3.1%	3.2%	2.9%	2.9%	2.9%	*estimates*		Avg Ann'l Div'd Yield	*3.7%*

CAPITAL STRUCTURE as of 12/31/21
Total Debt $7883 mill **Due in 5 Yrs** $2665 mill
LT Debt $6735 mill **LT Interest** $256 mill.
(LT interest earned. 3.2x)

Leases, Uncapitalized Annual rentals $2 mill.

Pension Assets-12/21 $1011 mill
Oblig $1251 mill

Pfd Stock None

Common Stock 250,478,681 shs
as of 1/31/22
MARKET CAP: $15 billion (Large Cap)

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		25-27
3094.5	3276.8	3350.3	3253.6	3320.0	3382.2	3534.5	3647.7	3416.0	3669.0	*3900*	*4050*	Revenues ($mill)	*4500*
337.8	382.1	395.7	390.9	384.0	466.1	522.3	567.4	624.0	674.0	*695*	*730*	Net Profit ($mill)	*845*
21.5%	12.4%	10.1%	15.3%	13.4%	12.5%	8.4%	10.8%	10.8%	NMF	*4.0%*	*4.0%*	Income Tax Rate	*4.0%*
6.5%	8.1%	8.8%	9.4%	16.3%	10.7%	14.5%	16.3%	8.8%	3.7%	*4.0%*	*5.0%*	AFUDC % to Net Profit	*6.0%*
48.4%	46.1%	49.7%	47.3%	51.5%	47.8%	52.3%	50.6%	53.5%	52.9%	*55.0%*	*55.0%*	Long-Term Debt Ratio	*56.0%*
48.4%	50.8%	47.5%	50.0%	46.1%	49.8%	45.7%	47.6%	44.9%	47.1%	*45.0%*	*45.0%*	Common Equity Ratio	*44.0%*
6476.6	6461.0	7257.2	7446.3	8377.6	8392.8	10032	10938	12657	12725	*14000*	*14550*	Total Capital ($mill)	*17100*
7838.0	7147.3	6442.0	8970.2	9809.9	10798	12462	13527	14336	14987	*16000*	*17000*	Net Plant ($mill)	*19900*
6.3%	7.0%	6.5%	6.3%	5.6%	6.7%	6.3%	6.3%	5.9%	6.3%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.0%*
10.1%	11.0%	10.8%	10.0%	9.5%	10.6%	10.9%	10.5%	10.6%	11.3%	*11.0%*	*11.0%*	Return on Shr. Equity	*11.0%*
10.3%	11.3%	11.2%	10.2%	9.7%	10.9%	11.2%	10.7%	10.8%	11.0%	*11.0%*	*11.0%*	Return on Com Equity E	*11.0%*
3.9%	4.9%	4.6%	3.6%	2.8%	4.0%	4.4%	4.2%	4.2%	4.3%	*4.0%*	*4.0%*	Retained to Com Eq	*4.0%*
64%	57%	60%	66%	72%	64%	62%	61%	62%	62%	*62%*	*62%*	All Div'ds to Net Prof	*64%*

ELECTRIC OPERATING STATISTICS

	2019	2020	2021
% Change Retail Sales (KWH)	-2.2	-2.3	+3.7
Avg. Indust. Use (MWH)	11448	11134	NA
Avg. Indust. Revs. per KWH (¢)	6.98	7.55	7.64
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	5626	5496	5486
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr end)	+.6	+.6	+.8
Fixed Charge Cov. (%)	265	251	259

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '19-'21 to '25-'27
Revenues	-1.0%	-.5%	*3.5%*
"Cash Flow"	7.0%	7.5%	*6.0%*
Earnings	7.0%	8.0%	*4.5%*
Dividends	6.5%	6.5%	*6.0%*
Book Value	5.5%	7.0%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	987.2	790.2	990.2	880.1	3647.7
2020	915.7	763.1	920.0	817.2	3416.0
2021	901	817	1024	927	3669.0
2022	*1000*	*850*	*1075*	*975*	*3900*
2023	*1050*	*875*	*1125*	*1000*	*4050*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	.53	.40	.94	.46	2.33
2020	.72	.54	.94	.26	2.47
2021	.68	.57	1.02	.35	2.63
2022	*.70*	*.57*	*1.05*	*.43*	*2.75*
2023	*.75*	*.60*	*1.10*	*.45*	*2.90*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ † Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.335	.335	.335	.335	1.34
2019	.355	.355	.355	.355	1.42
2020	.38	.38	.38	.38	1.52
2021	.4025	.4025	.4025	.4025	1.61
2022	.4275				

BUSINESS: Alliant Energy Corporation (formerly Interstate Energy) is a holding company formed through the merger of WPL Holdings, IES Industries, and Interstate Power. Supplies electricity to 984,000 customers and gas to 423,000 customers in Wisconsin, Iowa, and Minnesota. Electric revenue by state: WI, 43%; IA, 56%; MN, 1%. Electric revenue: residential, 36%; commercial, 25%; industrial, 29%; wholesale, 8%; other, 2%. Generating sources: coal, 32%; gas, 32%; wind, 16%; other, 1%; purchased, 19%. Fuel costs: 25% of revs. '21 reported deprec. rates: 2.9%-6.1%. Has 3,300 employees. Chairman, President & CEO: John O. Larsen. Inc.: Wisconsin. Address: 4902 N. Biltmore Lane, Madison, Wisconsin 53718-2148. Tel.: 608-458-3311. Internet: www.alliantenergy.com.

Alliant Energy's utility subsidiary in Wisconsin received electric and gas rate increases at the start of 2022. Wisconsin Power and Light was granted hikes of $114 million for electricity and $15 million for gas. (The electric increase was above the initial settlement agreement of $70 million due to anticipated increases in fuel costs this year.) The allowed return on equity remained at 10% and the common-equity ratio was boosted from 52.5% to 53.8%. Note that WPL is operating under a mechanism that will share a portion of its earnings if its earned ROE is greater than 10.25%. Rate relief is a key factor in the earnings growth we expect this year. Our estimate is within Alliant Energy's targeted range of $2.67-$2.81 a share, up slightly from management's previous guidance of $2.65-$2.79 thanks to increased capital spending on solar power, which will be recovered through a rider (surcharge) on customers' bills.

We look for further profit growth in 2023. The additions of renewable capacity should help. Our earnings estimate would produce an increase of 5%, which is within the company's goal of 5%-7% annually.

Alliant Energy's utilities are seeking approval from the regulators in Wisconsin and Iowa to add renewable-energy projects. In the first half of 2022, WPL expects a ruling on its request for a certificate of need to add up to 414 megawatts of solar capacity. The utility also plans to ask the Wisconsin commission to approve up to an additional 300 mw of renewable capacity. In Iowa, the company expects a decision in the second half of 2022 on its proposed addition of up to 400 mw of solar capacity and 75 mw of battery storage.

The board of directors raised the dividend in the first quarter. The company had signaled that the increase would be $0.10 a share (6.2%) annually, and this is what occurred.

Alliant Energy stock is expensively priced. The dividend yield is below the utility average. The stock does not stand out for the next 18 months, and with the recent quotation well within our 2025-2027 Target Price Range, total return potential over that time frame is unspectacular.

Paul E. Debbas, CFA *March 11, 2022*

(A) Diluted EPS. Excl. nonrecurring losses: '11, 1¢; '12, 8¢. '20 & '21 EPS don't sum due to rounding. Next earnings report due early May. (B) Dividends historically paid in mid-Feb., May, Aug., and Nov. ■ Dividend reinvestment plan avail. † Shareholder investment plan avail. (C) Incl. deferred charges. In '21: $1980 mill., $7.91/sh. (D) In millions, adj. for split. (E) Rate base: Orig. cost. Rates all'd on com. eq. in IA in '20: various; in WI in '22: 10%; earned on avg. com. eq., '21: 11.3%. Regulatory Climate: Wisconsin Above Average, Iowa, Average.

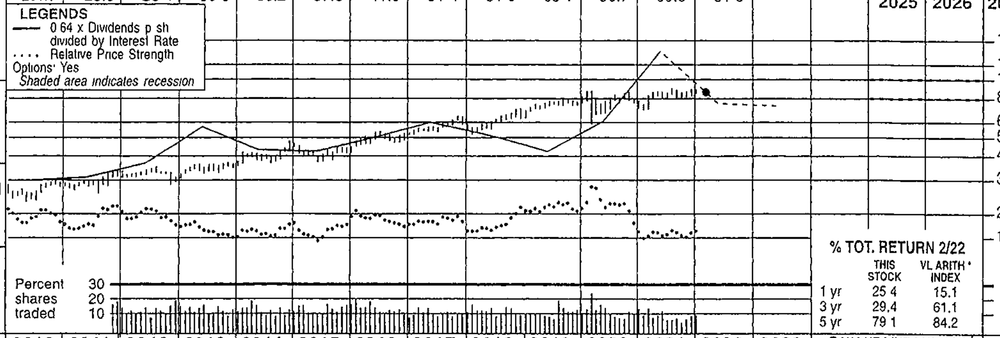
Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	65
Earnings Predictability	95

AMEREN NYSE-AEE

RECENT PRICE 85.95 | P/E RATIO 21.1 (Trailing: 22.4 / Median: 19.0) | RELATIVE P/E RATIO 1.18 | DIV'D YLD 2.8% | VALUE LINE

TIMELINESS 4 Lowered 12/10/21
SAFETY 1 Raised 9/10/21
TECHNICAL 2 Lowered 3/11/22
BETA .80 (1.00 = Market)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
High:	34 1	35 3	37 3	48.1	46 8	54 1	64 9	70 9	80 9	87 7	90 8	89.5			
Low:	25.5	28 4	30 6	35.2	37.3	41.5	51 4	51 9	63 1	58.7	69.8	81 8			



Target Price Range 2025 | 2026 | 2027

18-Month Target Price Range
Low-High: $75-$107 — Midpoint (% to Mid): $91 (5%)

2025-27 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	100	(+15%)	7%
Low	80	(-5%)	2%

Institutional Decisions

	2Q2021	3Q2021	4Q2021
to Buy	273	248	308
to Sell	226	246	227
Hld's(000)	194886	199566	198495

% TOT. RETURN 2/22

	THIS STOCK	VL ARITH.* INDEX
1 yr	25 4	15.1
3 yr	29.4	61.1
5 yr	79 1	84.2

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	© VALUE LINE PUB. LLC	25-27
33 30	36.23	36.92	29.87	31.77	31 04	28.14	24.06	24.95	25 13	25.04	25.46	25.73	24.00	22.87	24.81	*25.35*	*25.85*	Revenues per sh	*27.75*
6 02	6.76	6.44	6.06	6.33	5.87	5.87	5 25	5.77	6.08	6 59	6 80	7.64	7 83	8.08	8.89	*9.35*	*9.90*	"Cash Flow" per sh	*11.75*
2 66	2 98	2.88	2.78	2.77	2 47	2.41	2.10	2 40	2.38	2.68	2.77	3.32	3 35	3 50	3 84	*4.10*	*4.35*	Earnings per sh A	*5.25*
2.54	2.54	2.54	1.54	1 54	1 56	1.60	1.60	1.61	1 66	1.72	1.78	1 85	1.92	2.00	2.20	*2.36*	*2.52*	Div'd Decl'd per sh B ■	*3.10*
4.99	6.96	9 75	7.51	4.66	4.50	5 49	5.87	7.66	8.12	8.78	9.05	9.56	9 92	13.02	13.67	*12.90*	*12.55*	Cap'l Spending per sh	*13.00*
31.86	32.41	32.80	33.08	32.15	32.64	27.27	26.97	27.67	28.63	29.27	29.61	31.21	32.73	35.29	37.64	*40.25*	*42.90*	Book Value per sh C	*51.50*
206 60	208.30	212.30	237.40	240.40	242.60	242.63	242.63	242.63	242 63	242 63	242.63	244.50	246.20	253.30	257 70	*262.50*	*267.00*	Common Shs Outst'g D	*280.00*
19.4	17.4	14.2	9.3	9.7	11.9	13.4	16.5	16 7	17.5	18.3	20 6	18.3	22.1	22.2	21.4	*Bold figures are*		Avg Ann'l P/E Ratio	*17.5*
1.05	.92	.85	.62	.62	.75	.85	.93	.88	.88	.96	1.04	99	1 18	1 14	1 14	*Value Line*		Relative P/E Ratio	*.95*
4.9%	4.9%	6 2%	6.0%	5.8%	5.3%	5.0%	4.6%	4.0%	4 0%	3.5%	3.1%	3.0%	2.6%	2.6%	2.7%	*estimates*		Avg Ann'l Div'd Yield	*3.4%*
						6828.0	5838.0	6053.0	6098.0	6076 0	6177 0	6291 0	5910 0	5794 0	6394 0	*6650*	*6900*	Revenues ($mill)	*7800*
						589.0	518 0	593.0	585.0	659 0	683 0	821 0	834.0	877 0	995 0	*1080*	*1165*	Net Profit ($mill)	*1500*
						36.9%	37.5%	38 9%	38 3%	36 7%	38.2%	22.4%	17 9%	15 0%	13.6%	*12.0%*	*12.0%*	Income Tax Rate	*12.0%*
						6.1%	7.1%	5 7%	5.1%	4.1%	5.6%	6 9%	5 8%	5 5%	6 0%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*4.0%*
						49.5%	45.2%	47 2%	49.3%	47.7%	49.2%	50.3%	52 1%	55 0%	56 1%	*55.5%*	*53.5%*	Long-Term Debt Ratio	*51.0%*
						49.4%	53.7%	51 7%	49 7%	51.3%	49 8%	48.8%	47.1%	44.3%	43.3%	*44.0%*	*46.0%*	Common Equity Ratio	*48.5%*
						13384	12190	12975	13968	13840	14420	15632	17116	20158	22391	*23900*	*24950*	Total Capital ($mill)	*29600*
						16096	16205	17424	18799	20113	21466	22810	24376	26807	29261	*31250*	*33125*	Net Plant ($mill)	*38800*
						6.0%	5.6%	5.8%	5.3%	6.0%	6.0%	6.4%	6 0%	5.3%	5.3%	*5.5%*	*5.5%*	Return on Total Cap'l	*6.0%*
						8.7%	7 7%	8 7%	8.3%	9.1%	9.3%	10.6%	10 2%	9.7%	10 1%	*10.0%*	*10.0%*	Return on Shr. Equity	*10.5%*
						8.8%	7.8%	8 7%	8.3%	9.2%	9.4%	10.7%	10.3%	9 7%	10.2%	*10.0%*	*10.0%*	Return on Com Equity E	*10.5%*
						3.0%	1.9%	2.9%	2.5%	3.3%	3.4%	4.8%	4.4%	4 2%	4.4%	*4.5%*	*4.5%*	Retained to Com Eq	*4.5%*
						66%	76%	67%	70%	64%	64%	56%	57%	57%	57%	*57%*	*58%*	All Div'ds to Net Prof	*58%*

CAPITAL STRUCTURE as of 12/31/21
Total Debt $13612 mill. **Due in 5 Yrs** $2890 mill
LT Debt $12562 mill. **LT Interest** $436 mill
(LT interest earned. 3.8x)
Pension Assets-12/21 $5745 mill
Oblig $5457 mill.
Pfd Stock $129 mill. **Pfd Div'd** $5 mill
807,595 sh $3.50 to $5 50 cum (no par), $100 stated val , redeem. $102.176-$110/sh , 487,508 sh 4 00% to 5 16%, $100 par, redeem. $100-$104 30/sh
Common Stock 257,724,783 shs. as of 1/31/22
MARKET CAP: $22 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2019	2020	2021
% Change Retail Sales (KWH)	-3 5	-5.6	+2 1
Avg Indust Use (MWH)	NA	NA	NA
Avg Indust. Revs. per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr end)	NA	NA	NA
Fixed Charge Cov. (%)	307	291	325

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '19-'21 to '25-'27
Revenues	-2.5%	-1 0%	*2 5%*
"Cash Flow"	3 0%	6 0%	*6 0%*
Earnings	3.0%	7.5%	*6.5%*
Dividends	3 0%	4 0%	*7 0%*
Book Value	1.0%	4.5%	*6 5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	1556	1379	1659	1316	5910.0
2020	1440	1398	1628	1328	5794 0
2021	1566	1472	1811	1545	6394.0
2022	*1700*	*1500*	*1850*	*1600*	*6650*
2023	*1750*	*1550*	*1950*	*1650*	*6900*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	.78	.72	1.47	.38	3 35
2020	.59	.98	1.47	.46	3 50
2021	.91	80	1.65	.48	3.84
2022	*.90*	*.85*	*1.85*	*.50*	*4.10*
2023	*.95*	*.90*	*1.95*	*.55*	*4.35*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	4575	4575	4575	.475	1 85
2019	.475	.475	475	.495	1 92
2020	.495	.495	.495	.515	2.00
2021	.55	.55	.55	.55	2 20
2022	.59				

BUSINESS: Ameren Corporation is a holding company formed through the merger of Union Electric and CIPSCO Has 1.2 million electric and 127,000 gas customers in Missouri, 1 2 million electric and 813,000 gas customers in Illinois. Discontinued nonregulated power-generation operation in '13. Electric revenue breakdown residential, 49%; commercial, 34%, industrial, 8%; other, 9% Generating sources coal, 73%; nuclear, 11%; hydro & other, 9%, purchased, 7% Fuel costs. 25% of revenues '21 reported deprec rates: 3%-4% Has 9,100 employees Chairman Warner L Baxter President & CEO Martin J. Lyons, Jr. Inc.: Missouri Address: One Ameren Plaza, 1901 Chouteau Ave , P.O Box 66149, St. Louis, MO 63166-6149 Tel. 314-621-3222. Internet: www ameren.com

Ameren received rate orders in Missouri. The commission approved settlements that raised electric and gas rates by $220 million and $5 million, respectively. An allowed return on equity was not specified, but the common equity ratio for electric was set at 52%. New tariffs took effect on February 28th.

Earnings will likely advance in 2022. The rate increases in Missouri will be a key factor. Also, growth in the utility's rate base will boost the company's earning power. Ameren's transmission business and electric operations in Illinois operate under formula rate plans. Ameren will pick up a few cents a share from having a full year of a gas rate hike that was granted in Illinois last year. These factors should outweigh the effects of higher operating and maintenance costs, depreciation, and average shares outstanding. We are sticking with our 2022 estimate of $4.10 a share, which is within management's targeted range of $3.95-$4.15

We expect further growth in 2023. Ameren will have a full year's effect of rate relief in Missouri and will continue to benefit from rate base growth. The company's goal for yearly profit growth is 6%-8%, and our estimate would produce an increase within this range.

There is a risk to the company's earning power. The Federal Energy Regulatory Commission (FERC) is considering the removal of a half percentage point incentive "adder" on the allowed ROE for electric transmission. This would cut Ameren's annual earning power by $0.05 a share. The timing of FERC's decision is unknown. Our estimates and projections are based on the utility maintaining its allowed ROE for transmission of 10.52%.

The board of directors raised the dividend in the first quarter. The hike was $0.04 a share (7.3%) quarterly. Dividend growth will likely be in line with profit growth. Ameren's target for the payout ratio is 55%-70%, and this figure is near the lower end of this range.

The dividend yield of this untimely but high-quality stock is below the utility mean. The equity's prospects for the next 18 months and the 3- to 5-year period are subpar. The recent quotation is within our 2025-2027 Target Price Range.

Paul E. Debbas, CFA — *March 11, 2022*

(A) Diluted EPS Excl nonrec gain (losses): '10, ($2 19), '11, (32¢), '12, ($6 42), '17 (63¢), gain (loss) from discontinued ops.. '13, (92¢), '15 21¢ Next earnings report due early May. (B) Div'ds paid late Mar , June, Sept , & Dec ■ Div'd reinvest plan avail. (C) Incl intang. In '21: $6.60/sh (D) In mill. (E) Rate base Orig cost depr Rate allowed on com. eq in MO in '22 elec & gas, none specified, in IL electric, varies, in '21. gas, 9 67%, earned on avg. com. eq , '21. 10 6% Regulatory Climate: MO, Average, IL, Below Average

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	75
Earnings Predictability	95

AMERICAN ELEC. PWR. NDQ-AEP

RECENT PRICE	90.65	P/E RATIO	17.9 (Trailing: 18.3) (Median: 17.0)	RELATIVE P/E RATIO	1.00	DIV'D YLD	3.6%	VALUE LINE

TIMELINESS **4** Lowered 3/4/22
SAFETY **1** Raised 3/17/17
TECHNICAL **2** Lowered 3/11/22
BETA .75 (1.00 = Market)

High:	41.7	45.4	51.6	63.2	65.4	71.3	78.1	81.1	96.2	105.0	91.5	91.7
Low:	33.1	37.0	41.8	45.8	52.3	56.8	61.8	62.7	72.3	65.1	74.8	84.2

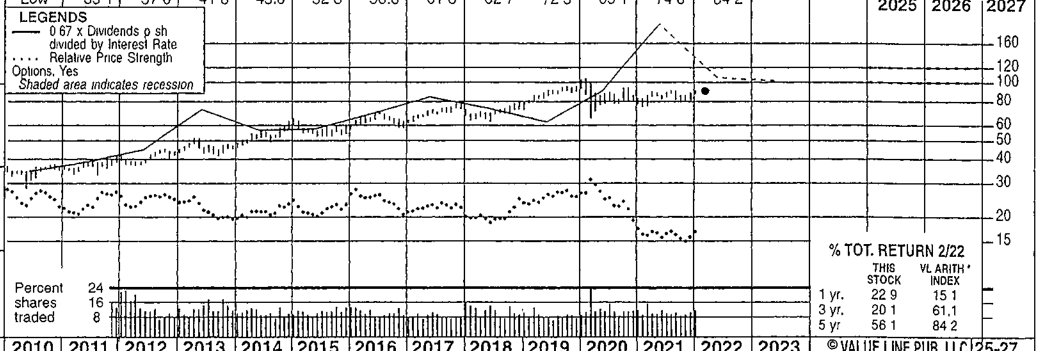
18-Month Target Price Range
Low-High Midpoint (% to Mid)
$76-$110 $93 (5%)

2025-27 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	120	(+30%)	10%
Low	100	(+10%)	6%

Institutional Decisions

	2Q2021	3Q2021	4Q2021
to Buy	605	561	636
to Sell	431	433	473
Hld's(000)	371285	373255	373909



% TOT. RETURN 2/22

	THIS STOCK	VL ARITH.* INDEX
1 yr.	22.9	15.1
3 yr.	20.1	61.1
5 yr.	56.1	84.2

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	© VALUE LINE PUB. LLC	25-27
31.82	33.41	35.56	28.22	30.01	31.27	30.77	31.48	34.78	33.51	33.31	31.35	32.84	31.49	30.04	33.30	*33.25*	*34.05*	Revenues per sh	*36.75*
6.67	6.80	6.84	6.32	6.29	6.83	6.92	7.02	7.57	7.98	8.47	7.95	8.77	9.35	10.28	10.98	*11.20*	*11.75*	"Cash Flow" per sh	*13.75*
2.86	2.86	2.99	2.97	2.60	3.13	2.98	3.18	3.34	3.59	4.23	3.62	3.90	4.08	4.42	4.96	*5.00*	*5.35*	Earnings per sh A	*6.50*
1.50	1.58	1.64	1.64	1.71	1.85	1.88	1.95	2.03	2.15	2.27	2.39	2.53	2.71	2.84	3.00	*3.17*	*3.35*	Div'd Decl'd per sh B ■	*4.00*
8.89	8.88	9.83	6.19	5.07	5.74	6.45	7.75	8.68	9.37	9.98	11.79	12.89	12.43	12.72	11.43	*15.35*	*14.15*	Cap'l Spending per sh	*14.00*
23.73	25.17	26.33	27.49	28.33	30.33	31.37	32.98	34.37	36.44	35.38	37.17	38.58	39.73	41.38	44.49	*47.05*	*50.05*	Book Value per sh C	*58.75*
396.67	400.43	406.07	478.05	480.81	483.42	485.67	487.78	489.40	491.05	491.71	492.01	493.25	494.17	496.60	504.21	*514.00*	*523.00*	Common Shs Outst'g D	*545.00*
12.9	16.3	13.1	10.0	13.4	11.9	13.8	14.5	15.9	15.8	15.2	19.3	18.0	21.4	19.6	17.1	*Bold figures are*	*Value Line*	Avg Ann'l P/E Ratio	*17.0*
.70	.87	.79	.67	.85	.75	.88	.81	.84	.80	.80	.97	.97	1.14	1.01	.91	*estimates*		Relative P/E Ratio	*.95*
4.1%	3.4%	4.2%	5.5%	4.9%	5.0%	4.6%	4.2%	3.8%	3.8%	3.5%	3.4%	3.6%	3.1%	3.3%	3.5%			Avg Ann'l Div'd Yield	*3.6%*

CAPITAL STRUCTURE as of 12/31/21
Total Debt $36069 mill **Due in 5 Yrs** $12120 mill
LT Debt $31301 mill **LT Interest** $1083 mill
Incl $603.5 mill securitized bonds Incl $500.7 mill finance leases.
(LT interest earned 3.2x)
Leases, Uncapitalized Annual rentals $119.6 mill.
Pension Assets-12/21 $5352.9 mill
Oblig $5187.0 mill.
Pfd Stock None

Common Stock 504,212,015 shs

MARKET CAP: $46 billion (Large Cap)

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	© VALUE LINE PUB. LLC	25-27
14945	15357	17020	16453	16380	15425	16196	15561	14919	16792	*17100*	*17800*	Revenues ($mill)	*20000*
1443.0	1549.0	1634.0	1763.4	2073.6	1783.2	1923.8	2019.0	2200.1	2488.1	*2555*	*2790*	Net Profit ($mill)	*3585*
33.9%	36.2%	37.8%	35.1%	26.8%	33.7%	5.8%	7%	1.9%	4.6%	*7.5%*	*7.5%*	Income Tax Rate	*7.5%*
11.2%	7.3%	9.0%	11.0%	8.0%	8.0%	10.7%	12.7%	9.7%	7.8%	*10.0%*	*9.0%*	AFUDC % to Net Profit	*7.0%*
50.6%	51.1%	49.0%	49.8%	50.0%	51.5%	53.2%	56.1%	58.5%	58.3%	*58.0%*	*58.5%*	Long-Term Debt Ratio	*57.5%*
49.4%	48.9%	51.0%	50.2%	50.0%	48.5%	46.8%	43.9%	41.5%	41.7%	*42.0%*	*41.5%*	Common Equity Ratio	*42.5%*
30823	32913	33001	35633	34775	37707	40677	44759	49537	53734	*57650*	*62825*	Total Capital ($mill)	*75700*
38763	40997	44117	46133	45639	50262	55099	60138	63902	66001	*70700*	*74725*	Net Plant ($mill)	*88000*
6.1%	6.0%	6.3%	6.1%	7.2%	5.9%	5.9%	5.6%	5.6%	5.6%	*5.5%*	*5.5%*	Return on Total Cap'l	*5.5%*
9.5%	9.6%	9.7%	9.9%	11.9%	9.8%	10.1%	10.3%	10.7%	11.1%	*10.5%*	*10.5%*	Return on Shr. Equity	*11.0%*
9.5%	9.6%	9.7%	9.9%	11.9%	9.8%	10.1%	10.3%	10.7%	11.1%	*10.5%*	*10.5%*	Return on Com Equity E	*11.0%*
3.5%	3.7%	3.8%	3.9%	5.5%	3.2%	3.5%	3.4%	3.8%	4.3%	*4.0%*	*4.0%*	Retained to Com Eq	*4.5%*
63%	62%	61%	60%	54%	67%	65%	67%	65%	61%	*65%*	*64%*	All Div'ds to Net Prof	*62%*

ELECTRIC OPERATING STATISTICS

	2019	2020	2021
% Change Retail Sales (KWH)	-2.2	--	+3.0
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+.3	+1.0	NA
Fixed Charge Cov. (%)	234	243	272

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '19-'21 to '25-'27
Revenues	.5%	-1.5%	*2.5%*
"Cash Flow"	4.5%	5.0%	*5.0%*
Earnings	4.5%	4.0%	*6.5%*
Dividends	5.0%	6.0%	*6.0%*
Book Value	4.0%	3.5%	*6.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	4056	3573	4315	3616	15561
2020	3747	3494	4066	3610	14918
2021	4281	3826	4623	4061	16792
2022	*4350*	*3900*	*4700*	*4150*	*17100*
2023	*4550*	*4050*	*4900*	*4300*	*17800*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	1.16	.93	1.48	.51	4.08
2020	1.00	1.05	1.50	.87	4.42
2021	1.15	1.15	1.59	1.07	4.96
2022	*1.20*	*1.15*	*1.65*	*1.00*	*5.00*
2023	*1.30*	*1.25*	*1.75*	*1.05*	*5.35*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.62	.62	.62	.67	2.53
2019	.67	.67	.67	.70	2.71
2020	.70	.70	.70	.74	2.84
2021	.74	.74	.74	.78	3.00
2022	.78				

BUSINESS: American Electric Power Company Inc. (AEP), through 10 operating utilities, serves 5.5 million customers in Arkansas, Kentucky, Indiana, Louisiana, Michigan, Ohio, Oklahoma, Tennessee, Texas, Virginia, & West Virginia. Has a transmission subsidiary. Electric revenue breakdown: residential, 43%; commercial, 23%; industrial, 18%; wholesale, 10%; other, 6%. Sold commercial barge operation in '15. Generating sources not available. Fuel costs 33% of revenues. '21 reported depreciation rates (utility): 2.6%-12.5%. Has 16,700 employees. Chairman, President & CEO: Nicholas K. Akins. COO: Lisa Barton. Incorporated: New York. Address: 1 Riverside Plaza, Columbus, Ohio 43215-2373. Telephone: 614-716-1000. Internet: www.aep.com.

American Electric Power's sale of its Kentucky Power subsidiary is likely to be completed in the second quarter. The sale would raise $1.45 billion after taxes and transaction costs, and would offset the company's expected equity needs for 2022. (The estimated rise in the share count this year is due to the conversion of $805 million of equity units.)

The company wants to sell its nonregulated contracted renewable-energy assets. The company would reinvest the proceeds in regulated wind and solar projects and allocate to its transmission business capital that otherwise would have been used for nonregulated renewable expansion. Any gains on these sales will be *included* in our earnings presentation, although we have not assumed any in our estimates. AEP already has a presence in regulated renewables, and will soon complete the third phase of a $2 billion, 1,484-megawatt wind project.

Some regulatory matters are pending or have been concluded. SWEPCO filed a case for $56 million in Arkansas, based on a 10.35% return on equity and a 51.3% common-equity ratio. An order is expected in the second quarter. The utility is trying to reach a settlement in Louisiana, where it had requested $73 million, based on a 10.35% ROE and a 50.8% common-equity ratio. The Texas commission granted SWEPCO $23 million, based on a 9.25% ROE and a 49.4% common-equity ratio. The Indiana commission approved a settlement for Indiana Michigan Power calling for a $61 million increase, based on a 9.7% ROE and a 50% common-equity ratio.

We estimate modest profit growth this year and a larger increase in 2023. The comparison with the 2021 tally is tough because mark-to-market accounting gains added $0.14 to share net. Our estimate is within the company's targeted range of $4.87-$5.07 a share. Management narrowed its goal for annual earnings growth from 5%-7% to 6%-7%, and our 2023 estimate is within this range. Rate relief and volume growth are key factors boosting AEP's earning power.

This untimely but high-quality stock has an average dividend yield for a utility. The issue doesn't stand out for the next 18 months or the 2025-2027 period.

Paul E. Debbas, CFA *March 11, 2022*

(A) Diluted EPS. Excl. nonrec. gains (losses): '06, (20¢); '07, (20¢); '08, 40¢; '10, (7¢); '11, 89¢; '12, (38¢); '13, (14¢); '16, ($2.99); '17, 26¢; '19, (20¢); gains (loss) from disc. ops.: '06, 2¢; '08, 3¢; '15, 58¢; '16, (1¢). Next earnings report due late April. (B) Div'ds paid early Mar., June, Sept., & Dec. ■ Div'd reinvestment plan avail. (C) Incl. intang. In '21: $17.04/sh. (D) In mill. (E) Rate base: various. Rates allowed on com. eq.: 9.3%-10.9%; earned on avg. com. eq., '21: 11.6%. Regulatory Climate: Average.

Company's Financial Strength	A+
Stock's Price Stability	100
Price Growth Persistence	60
Earnings Predictability	95

DUKE ENERGY NYSE-DUK

RECENT PRICE **105.06** | P/E RATIO **19.6** (Trailing: 27.1 Median: 18.0) | RELATIVE P/E RATIO **1.11** | DIV'D YLD **3.8%** | VALUE LINE

TIMELINESS 4 Raised 12/24/21
SAFETY 2 New 6/1/07
TECHNICAL 3 Raised 1/14/22
BETA .85 (1 00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
\$82-\$116	\$99 (-5%)

2025-27 PROJECTIONS

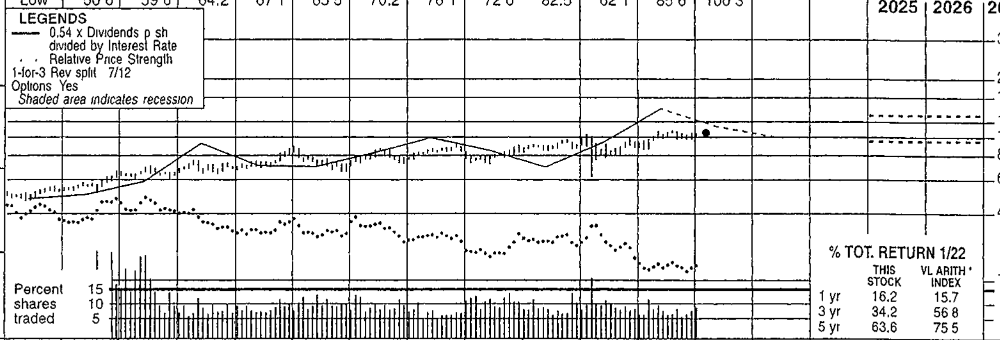
	Price	Gain	Ann'l Total Return
High	130	(+25%)	9%
Low	95	(-10%)	2%

Institutional Decisions

	1Q2021	2Q2021	3Q2021
to Buy	796	823	803
to Sell	681	623	615
Hld's(000)	483371	483062	481215

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
High	66 4	71 1	75 5	87 3	90 0	87 8	91 8	91 4	97 4	103 8	108.4	105 3
Low	50 6	59 6	64.2	67 1	65 5	70.2	76 1	72 0	82.5	62 1	85 6	100 3

LEGENDS
— 0.54 x Dividends p sh divided by Interest Rate
· · Relative Price Strength
1-for-3 Rev split 7/12
Options Yes
Shaded area indicates recession



Target Price Range 2025 | 2026 | 2027

% TOT. RETURN 1/22

	THIS STOCK	VL ARITH.* INDEX
1 yr	16.2	15.7
3 yr	34.2	56 8
5 yr	63.6	75 5

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	© VALUE LINE PUB. LLC	25-27
25.32	30.24	31.15	29.18	32.22	32.63	27.88	34.84	33.84	34.10	32.49	33.66	33.73	34.21	31.04	*32.40*	*33.30*	*34.30*	Revenues per sh	*37.50*
7.86	8.11	7.34	7.58	8.49	8.68	6.80	8.56	9.11	9.40	9.20	10.01	10.49	12.13	10.89	*12.40*	*13.30*	*14.00*	"Cash Flow" per sh	*16.50*
2.76	3.60	3.03	3.39	4 02	4 14	3 71	3.98	4 13	4 10	3.71	4.22	4 13	5 07	3 92	*4.95*	*5.45*	*5.80*	Earnings per sh A	*7.00*
--	2 58	2.70	2 82	2.91	2 97	3.03	3.09	3.15	3 24	3 36	3.49	3.64	3.75	3 82	3.90	*3.98*	*4.06*	Div'd Decl'd per sh B ■	*4.35*
8.07	7.43	10 35	9 85	10 84	9.80	7 81	7 83	7 62	9 83	11 29	11 50	12.91	15 17	12 88	*13.60*	*16.60*	*15.70*	Cap'l Spending per sh	*15.50*
62 30	50.40	49 51	49.85	50 84	51 14	58 04	58 54	57.81	57 74	58.62	59.63	60.27	61.20	59.82	*60.90*	*62.40*	*64.15*	Book Value per sh C	*71.00*
418 96	420 62	423 96	436.29	442.96	445 29	704.00	706 00	707 00	688 00	700.00	700 00	727.00	733 00	769.00	*770.00*	*770.00*	*770.00*	Common Shs Outst'g D	*770.00*
--	16.1	17 3	13.3	12.7	13 8	17.5	17.4	17.9	18.2	21.3	19.9	19.4	17.7	22.4	*20.1*	Bold figures are		Avg Ann'l P/E Ratio	*16.0*
--	.85	1.04	.89	.81	.87	1.11	.98	.94	.92	1.12	1.00	1.05	.94	1.15	*1.05*	Value Line		Relative P/E Ratio	*.90*
--	4 4%	5.2%	6.2%	5.7%	5.2%	4.7%	4.4%	4.3%	4.3%	4.3%	4.2%	4.5%	4.2%	4 4%	3 9%	estimates		Avg Ann'l Div'd Yield	*3.9%*

CAPITAL STRUCTURE as of 9/30/21
Total Debt \$64900 mill. Due in 5 Yrs \$19594 mill
LT Debt \$57929 mill LT Interest \$2211 mill
Incl \$845 mill finance leases
(LT interest earned. 2.1x)
Leases, Uncapitalized Annual rentals \$229 mill
Pension Assets-12/20 \$9337 mill.
Oblig \$8634 mill.
Pfd Stock \$1962 mill Pfd Div'd \$107 mill
40 mill. shs 5.75%, cum , \$25 liq value, redeemable at \$25.50 prior to 6/15/24, 1 mill shs 4 875%, cum , \$1000 liq value
Common Stock 769,343,372 shs. as of 10/31/21
MARKET CAP: \$81 billion (Large Cap)

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		25-27
19624	24598	23925	23459	22743	23565	24521	25079	23868	*24950*	*25650*	*26400*	Revenues (\$mill)	*28850*
2136 0	2813 0	2934 0	2854 0	2560 0	2963.0	2928 0	3755 0	2996 0	*3910*	*4320*	*4565*	Net Profit (\$mill)	*5415*
30.2%	32.6%	30 6%	32.2%	31 0%	30 4%	14 2%	12 7%	4 9%	*7.5%*	*7.0%*	*7.0%*	Income Tax Rate	*7.0%*
22 3%	8.8%	7.2%	9.2%	11 7%	12.3%	13.0%	7 9%	8.9%	*8.0%*	*7.0%*	*7.0%*	AFUDC % to Net Profit	*6.0%*
47.0%	48 0%	47 7%	48.6%	52 6%	54 0%	53 8%	54 0%	53.7%	*54.5%*	*54.5%*	*55.0%*	Long-Term Debt Ratio	*55.0%*
52 9%	52.0%	52 3%	51 4%	47 4%	46 0%	46 2%	44 1%	44.4%	*44.0%*	*43.5%*	*43.5%*	Common Equity Ratio	*43.5%*
77307	79482	78088	77222	86609	90774	94940	101807	103589	*106950*	*110075*	*113525*	Total Capital (\$mill)	*125600*
68558	69490	70046	75709	82520	86391	91694	102127	106782	*111500*	*118275*	*124025*	Net Plant (\$mill)	*138800*
3 6%	4.6%	4.8%	4.8%	4.0%	4.3%	4.2%	4 8%	3 9%	*4.5%*	*5.0%*	*5.0%*	Return on Total Cap'l	*5.5%*
5 2%	6.8%	7 2%	7 2%	6 2%	7.1%	6 7%	8 0%	6.2%	*8.0%*	*8.5%*	*9.0%*	Return on Shr. Equity	*9.5%*
5 2%	6 8%	7 2%	7.2%	6.2%	7.1%	6.7%	8.3%	6.3%	*8.0%*	*9.0%*	*9.0%*	Return on Com Equity E	*9.5%*
.9%	1.5%	1.7%	1.5%	.6%	1.2%	1.0%	2.4%	.4%	*1.5%*	*2.5%*	*2.5%*	Retained to Com Eq	*3.5%*
82%	78%	76%	79%	91%	83%	84%	71%	94%	*79%*	*73%*	*71%*	All Div'ds to Net Prof	*64%*

ELECTRIC OPERATING STATISTICS

	2018	2019	2020
% Change Retail Sales (KWH)	+3 9	- 9	-2 3
Avg Indust Use (MWH)	2953	2934	NA
Avg Indust Revs per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (avg)	+1 4	+1.5	NA
Fixed Charge Cov (%)	218	233	183

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '25-'27
Revenues	.5%	-1 0%	*2.0%*
"Cash Flow"	3 5%	4 5%	*5 5%*
Earnings	2 5%	1.5%	*7 0%*
Dividends	3 0%	3.5%	*2 0%*
Book Value	2 0%	1.0%	*2.5%*

Cal-endar	QUARTERLY REVENUES (\$ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	6163	5873	6940	6103	25079
2020	5949	5421	6721	5777	23868
2021	6150	5758	6951	*6091*	*24950*
2022	*6350*	*5900*	*7150*	*6250*	*25650*
2023	*6550*	*6050*	*7130*	*6450*	*26400*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	1.24	1 12	1.82	.89	5 07
2020	1 24	1 08	1 74	d.13	3 92
2021	1.25	.96	1.79	*.95*	*4.95*
2022	*1.35*	*1.15*	*1.90*	*1.05*	*5.45*
2023	*1.45*	*1.25*	*2.00*	*1.10*	*5.80*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	89	.89	.9275	.9275	3 64
2019	9275	.9275	945	945	3 75
2020	.945	.945	965	.965	3 82
2021	.965	.965	.985	985	3 90
2022	.985				

BUSINESS: Duke Energy Corporation is a holding company for utilities with 7.6 mill elec. customers in NC, FL, IN, SC, OH. & KY, and 1 6 mill gas customers in OH, KY, NC, SC, and TN Owns independent power plants & has 25% stake in National Methanol in Saudi Arabia Acq'd Progress Energy 7/12; Piedmont Natural Gas 10/16, discontinued most int'l ops in '16 Elec rev breakdown residential, 45%; commercial, 28%; industrial, 13%, other, 14% Generating sources. gas, 31%; nuclear, 30%; coal, 18%, other, 2%, purchased, 19% Fuel costs. 27% of revs '20 reported deprec. rate. 3 0% Has 27,500 employees. Chairman, President & CEO· Lynn J Good Inc DE. Address 550 South Tryon St, Charlotte, NC 28202-1803 Tel 704-382-3853 Internet: www duke-energy com.

Duke Energy's earnings will likely advance significantly in 2022. The comparison shouldn't be difficult, especially in the June quarter, when the company took an \$0.18-a-share charge for a workforce realignment in 2021 Duke will benefit from increased rates A \$67 million hike took effect in Florida at the start of 2022 Piedmont Natural Gas received a \$67 million increase on November 1st Duke received a small gas hike in Kentucky at the start of 2022. The company should get a partial year of rate relief in Ohio (see below) Duke also obtains revenues every year from riders (surcharges) on customers' bills. Finally, the utility is benefiting from healthy growth in volume (especially from the industrial sector) and customers Management put forth its expectations for the current year shortly before this report went to press.

An electric rate case is pending in Ohio. Duke is seeking an increase of \$55 million (3.3%), based on a 10.3% return on equity. An order is expected this summer.

We look for another year of solid profit growth in 2023. Duke will get the next phase of multiyear rate relief (\$49 million) in Florida at the start of the year. The company will benefit from a full year of rate relief in Ohio. We estimate a bottom-line increase of 6%, within management's annual target of 5%-7%

Duke is awaiting regulatory outcomes in North Carolina. This involves performance-based ratemaking and securitization for coal-fired assets that will be retired early Developments from the state commission should come forth as the year progresses

Duke entered into a cooperation agreement with Elliott Investment Management. This involves the addition of two board members and a standstill agreement through November 13, 2022 (the one-year anniversary of the cooperation agreement). Elliott had been critical of Duke's management. There is some speculative interest for stockholders once the cooperation agreement expires.

The untimely stock has a dividend yield that is a bit above the utility mean. But, dividend growth potential is low, and the stock lacks appeal for the next 18 months and the 2025-2027 period.

Paul E. Debbas, CFA *February 11, 2022*

(A) Dil EPS Excl nonrec. losses '12, 70¢, '13 24¢; '14, 67¢, '17, 15¢, '18, 41¢, '20, \$2 21. losses on disc. ops.: '14, 80¢, '16, 60¢. '20 EPS don't sum due to rounding. Next egs due early May. (B) Div'ds paid mid-Mar., June, Sept., & Dec. ■ Div'd reinv. plan avail (C) Incl. intang In '20 \$41 25/sh (D) In mill., adj for rev split (E) Rate base Net orig. cost Rate all'd on com eq. in '21 in NC· 9.6%, in '19 in SC. 9 5%, in '20 in FL: 9 5%-11.5%, in '20 in IN. 9.7%, earn on avg com. eq , '20 9.9% Reg Clim NC, SC Avg , OH, IN Above Avg.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	35
Earnings Predictability	85

EDISON INTERNAT'L NYSE-EIX

RECENT PRICE 65.64 | P/E RATIO 34.0 (Trailing: 32.2, Median: 15.0) | RELATIVE P/E RATIO 1.78 | DIV'D YLD 4.3% | VALUE LINE

TIMELINESS 3 Raised 9/17/21
SAFETY 3 Lowered 11/23/18
TECHNICAL 2 Raised 1/21/22
BETA .95 (1.00 = Market)

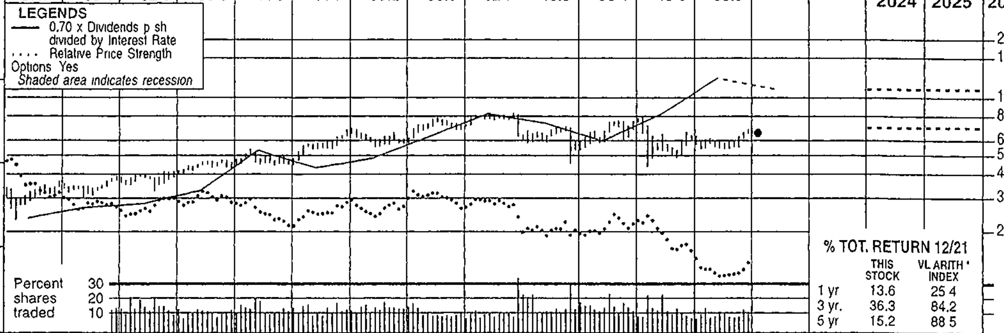
High	39.4	41.6	48.0	54.2	68.7	69.6	78.7	83.4	71.0	76.4	78.9	68.6
Low	30.4	32.6	39.6	44.3	44.7	55.2	58.0	62.7	45.5	53.4	43.6	53.9

Target Price Range 2024 | 2025 | 2026

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$53-$87 $70 (5%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	110	(+70%)	17%
Low	70	(+5%)	6%



Institutional Decisions

	1Q2021	2Q2021	3Q2021
to Buy	289	320	298
to Sell	261	249	263
Hld's(000)	330900	330984	332161

% TOT. RETURN 12/21

	THIS STOCK	VL ARITH.* INDEX
1 yr	13.6	25.4
3 yr.	36.3	84.2
5 yr	15.2	88.5

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
36.38	38.74	40.25	43.31	37.98	38.09	39.16	36.41	38.61	41.17	35.37	36.43	37.81	38.85	34.11	35.83	38.95	39.25	Revenues per sh	44.25
6.99	7.25	7.60	8.08	7.96	8.41	9.03	9.63	8.80	9.95	10.35	10.43	11.03	4.69	9.15	7.94	7.95	10.95	"Cash Flow" per sh	12.50
3.34	3.28	3.32	3.68	3.24	3.35	3.23	4.55	3.78	4.33	4.15	3.94	4.51	d1.26	3.98	1.72	1.60	4.50	Earnings per sh A	5.25
1.02	1.10	1.18	1.23	1.25	1.27	1.29	1.31	1.37	1.48	1.73	1.98	2.23	2.43	2.48	2.58	2.69	2.84	Div'd Decl'd per sh B ■	3.35
5.73	7.78	8.67	8.67	10.07	13.94	14.76	12.73	11.05	11.99	12.97	11.46	11.75	13.84	13.47	14.47	14.30	15.90	Cap'l Spending per sh	17.50
20.30	23.66	25.92	29.21	30.20	32.44	30.86	28.95	30.50	33.64	34.89	36.82	35.82	32.10	36.75	37.08	36.40	38.45	Book Value per sh C	43.75
325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	361.99	378.91	385.00	390.00	Common Shs Outst'g D	390.00
11.7	13.0	16.0	12.4	9.7	10.3	11.8	9.7	12.7	13.0	14.8	17.9	17.2	--	16.7	34.9	37.1		Avg Ann'l P/E Ratio	17.0
.62	.70	.85	.75	.65	.66	.74	.62	.71	.68	.75	.94	.87	--	.89	1.79	2.00		Relative P/E Ratio	.95
2.6%	2.6%	2.2%	2.7%	4.0%	3.7%	3.4%	3.0%	2.8%	2.6%	2.8%	2.8%	2.9%	3.8%	3.7%	4.3%	4.5%		Avg Ann'l Div'd Yield	3.7%

CAPITAL STRUCTURE as of 9/30/21
Total Debt $27160 mill **Due in 5 Yrs** $11170 mill.
LT Debt $23342 mill **LT Interest** $948 mill
(LT interest earned 1.5x)
Leases, Uncapitalized Annual rentals $39 mill
Pension Assets-12/20 $4171 mill. Oblig $4476 mill
Pfd Stock $3136 mill. **Pfd Div'd** $172 mill
350,000 sh. 6.25%, $1000 liq. value, 638,020 sh 5.0%-5.75%, $2500 liq. value; 1,250,000 sh 5.375%, $1000 liq. value, all cumulative
Common Stock 379,908,256 shs as of 10/26/21
MARKET CAP: $25 billion (Large Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
12760	11862	12581	13413	11524	11869	12320	12657	12347	13578	15000	15300	Revenues ($mill)	17250
1112.0	1594.0	1344.0	1539.0	1480.0	1422.0	1603.0	d290.0	1477.0	775.0	770	1915	Net Profit ($mill)	2200
25.7%	14.3%	25.2%	22.4%	6.6%	11.1%	5.0%	--	--	--	5.0%	5.0%	Income Tax Rate	5.0%
14.8%	8.5%	7.8%	5.8%	8.0%	6.8%	7.2%	--	11.1%	22.5%	23.0%	9.0%	AFUDC % to Net Profit	8.0%
55.3%	45.2%	45.7%	44.1%	45.0%	41.8%	45.6%	53.6%	53.5%	55.2%	54.5%	55.0%	Long-Term Debt Ratio	58.0%
40.6%	46.2%	46.2%	47.2%	46.7%	49.2%	45.8%	38.3%	39.9%	39.5%	35.5%	35.5%	Common Equity Ratio	34.0%
24773	20422	21516	23216	24352	24362	25506	27284	33360	35581	39475	42025	Total Capital ($mill)	50000
32116	30273	30455	32981	35085	37000	39050	41348	44285	47839	50900	54575	Net Plant ($mill)	64900
6.0%	8.9%	7.3%	7.7%	7.1%	6.9%	7.3%	.1%	5.6%	3.4%	3.0%	5.5%	Return on Total Cap'l	5.5%
10.0%	14.2%	11.5%	11.9%	11.1%	10.0%	11.6%	NMF	9.5%	4.9%	4.5%	10.0%	Return on Shr. Equity	10.5%
10.5%	15.9%	12.5%	13.0%	12.0%	10.8%	12.7%	NMF	10.2%	4.6%	4.5%	11.0%	Return on Com Equity E	12.0%
6.3%	11.4%	8.1%	8.8%	7.2%	5.6%	6.6%	NMF	4.1%	NMF	NMF	4.0%	Retained to Com Eq	4.5%
43%	32%	40%	37%	44%	53%	52%	NMF	63%	NMF	NMF	66%	All Div'ds to Net Prof	67%

ELECTRIC OPERATING STATISTICS

	2018	2019	2020
% Change Retail Sales (KWH)	-.4	-2.7	+.7
Avg. Indust. Use (MWH)	667	657	589
Avg. Indust. Revs. per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	23766	22009	23133
Annual Load Factor (%)	48.0	49.6	46.7
% Change Customers (yr end)	+.6	+.5	+.6
Fixed Charge Cov. (%)	NMF	172	NMF

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	-1.0%	-1.0%	3.5%
"Cash Flow"	-1.0%	-5.5%	9.5%
Earnings	-8.0%	-18.5%	NMF
Dividends	7.0%	10.5%	5.0%
Book Value	1.5%	1.5%	3.5%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	2564	2815	4269	3009	12657
2019	2824	2812	3741	2970	12347
2020	2790	2987	4644	3157	13578
2021	2960	3315	5299	3426	15000
2022	3100	3450	5300	3450	15300

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.82	.84	1.57	d4.49	d1.26
2019	.64	1.57	1.35	.45	3.98
2020	.50	.85	d.76	1.13	1.72
2021	.68	.84	d.90	.98	1.60
2022	.80	1.05	1.60	1.05	4.50

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.605	.605	.605	.605	2.42
2019	.6125	.6125	.6125	.6125	2.45
2020	.6375	.6375	.6375	.6375	2.55
2021	.6625	.6625	.6625	.6625	2.65
2022	.70				

BUSINESS: Edison International (formerly SCECorp) is a holding company for Southern California Edison Company (SCE), which supplies electricity to 5.2 mill. customers in a 50,000-sq.-mi. area in central, coastal, & southern CA (excl. Los Angeles & San Diego). Edison Energy is an energy svcs. co. Disc. Edison Mission Energy (independent power producer) in '12. Elec. rev. breakdown: residential 42%; commercial, 40%; industrial, 4%; other, 14%. Generating sources: nuclear, 8%; gas, 5%; hydro, 4%, purchased, 83%. Fuel costs: 36% of revs. '20 reported depr. rate: 3.6%. Has 13,400 empls. Chairman: William P. Sullivan. Pres. & CEO: Pedro J. Pizzaro. Inc.: CA. Address: 2244 Walnut Grove Ave., P.O. Box 976, Rosemead, CA 91770. Tel.: 626-302-2222. Web: www.edison.com.

Edison International and its Southern California Edison utility subsidiary have increased the estimated liability stemming from wildfires and mudslides in 2017 and 2018. Previously, this figure was $6.2 billion, with $1.4 billion yet to be resolved. Now, the utility has raised this to $7.5 billion, with $2.2 billion yet to be resolved. Accordingly, the company took an aftertax charge of $899 million ($2.37 a share) against September-quarter results, part of which is for fines and penalties stemming from the wildfires. As is the case with previous charges, we *included* this in our earnings presentation. Thus, we slashed our 2021 share-earnings estimate from $4.15 to $1.60. We are not assuming any more charges in our 2022 estimate of $4.50 a share.

The utility has increased its capital spending plans. SCE intends to add some $900 million of battery storage in 2022. This will probably necessitate some debt and equity issuances. The amount, timing, and form of the new equity are to be determined. Note that SCE issued $2 billion of preferred equity last year, so additional preferred issuances would come as no surprise.

A cost-of-capital application is pending. Based on a provision in the current cost-of-capital mechanism, SCE's allowed return on equity for 2022 will be reduced from 10.3% to 9.72%, reducing revenues by $179 million. However, the utility argues that the provision should not apply due to the interest-rate cuts stemming from the government's reaction to the coronavirus. SCE has two counterproposals, one of which would result in no revenue loss and the other that would lower revenues by $50 million. When this matter will be resolved is unknown.

The board of directors raised the dividend. The move occurred in early December, effective with the payment in January. The increase was $0.15 a share (5.7%) annually.

This stock has an above-average dividend yield, even for a utility. This reflects the wildfire-related uncertainties that the company faces. Total return potential is unspectacular for the next 18 months but decent for the 3- to 5-year period.

Paul E. Debbas, CFA *January 21, 2022*

(A) Dil. EPS. Excl. nonrec. gains (losses): '09, (64¢); '10, 54¢, '11, ($3.33), '13, ($1.12), '15, ($1.18); '17, ($1.37), '18, (15¢); '19, (21¢); '20, 25¢; gains (loss) from disc. ops.: '12, ($5.11), '13, 11¢, '14, 57¢; '15, 11¢; '18, 10¢. '19 EPS don't sum due to change in shs. Next earnings report due late Feb. (B) Div'ds paid late Jan., Apr., July, & Oct. ■ Div'd reinv. plan avail. (C) Incl. def'd chgs. In '20: $18.79/sh. (D) In mill. (E) Rate base: net orig. cost. Rate all'd on com. eq. in '20: 10.3%; earned on avg. com. eq., '20: 4.7%. Regulatory Climate: Average

Company's Financial Strength	B++
Stock's Price Stability	75
Price Growth Persistence	40
Earnings Predictability	5

ENTERGY CORP. NYSE-ETR

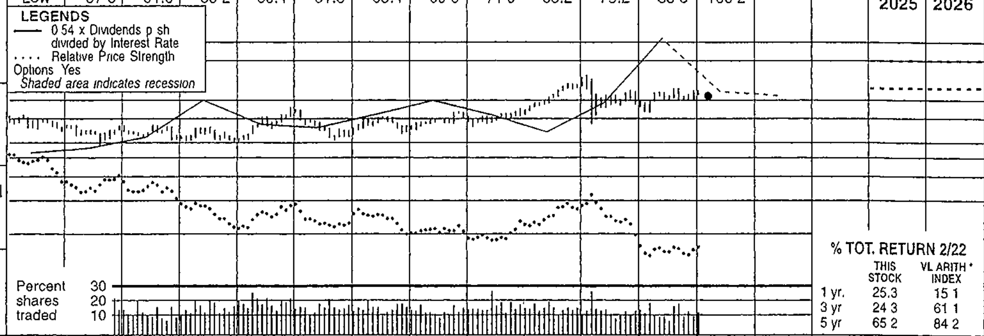
RECENT PRICE 105.21 | P/E RATIO 15.4 (Trailing: 15.3 Median: 14.0) | RELATIVE P/E RATIO 0.86 | DIV'D YLD 3.9% | VALUE LINE

TIMELINESS 4 Lowered 12/10/21
SAFETY 2 Raised 12/13/19
TECHNICAL 2 Raised 3/4/22
BETA .95 (1.00 = Market)

High.	74.5	74 5	72 6	92 0	90.3	82 1	87.9	90 8	122.1	135 5	115 0	113 1
Low	57 6	61.6	60 2	60.4	61.3	65.4	69 6	71 9	83.2	75.2	85 8	100 2

LEGENDS
— 0 54 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options Yes
Shaded area indicates recession

Target Price Range 2025 | 2026 | 2027



18-Month Target Price Range
Low-High Midpoint (% to Mid)
$88-$132 $110 (5%)

2025-27 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	160	(+50%)	14%
Low	115	(+10%)	6%

Institutional Decisions

	2Q2021	3Q2021	4Q2021
to Buy	306	264	352
to Sell	273	275	244
Hld's(000)	174484	183072	182168

% TOT. RETURN 2/22

	THIS STOCK	VL ARITH.* INDEX
1 yr.	25.3	15 1
3 yr	24 3	61 1
5 yr	65 2	84 2

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	© VALUE LINE PUB. LLC	25-27
53.94	59.47	69.15	56.82	64 27	63 67	57 94	63.86	69.71	64.54	60.55	61.35	58.23	54.63	50.51	57.95	*54.85*	*55.00*	Revenues per sh	*59.25*
10 69	11.73	12 89	13.29	16.54	17 53	15 98	16.25	17.68	17.71	18.72	16.70	16.50	17.19	18.21	17.90	*17.75*	*18.50*	"Cash Flow" per sh	*21.25*
5.36	5 60	6.20	6 30	6.66	7.55	6.02	4.96	5.77	5 81	6 88	5.19	5 88	6.30	6 90	6 87	*6.30*	*6.70*	Earnings per sh A	*8.00*
2.16	2.58	3.00	3.00	3.24	3.32	3 32	3.32	3.32	3 34	3.42	3.50	3.58	3.66	3.74	3.86	*4.09*	*4.30*	Div'd Decl'd per sh B ■ †	*5.10*
9.44	10.29	13.92	12 99	13 33	15.21	18 18	15.73	14.82	16.79	17 28	22.07	22 45	21.72	24 52	30 86	*18.15*	*19.00*	Cap'l Spending per sh	*19.75*
40.45	40.71	42.07	45 54	47.53	50.81	51.73	54.00	55 83	51 89	45.12	44 28	46 78	51.34	54.56	57.42	*60.20*	*63.45*	Book Value per sh C	*73 00*
202.67	193 12	189.36	189.12	178.75	176.36	177.81	178 37	179.24	178 39	179.13	180 52	189.06	199 15	200.24	202.65	*206.00*	*209.00*	Common Shs Outst'g D	*214.00*
14 3	19.3	16 6	12.0	11.6	9 1	11.2	13 2	12.9	12.5	10.9	15.0	13.8	16.5	15 3	15.0	*Bold figures are*		Avg Ann'l P/E Ratio	*17.0*
77	1.02	1 00	.80	.74	.57	71	.74	.68	.63	.57	.75	.75	.88	.79	.80	*Value Line*		Relative P/E Ratio	*.95*
2.8%	2 4%	2 9%	4.0%	4.2%	4.9%	4.9%	5 1%	4.5%	4 6%	4.6%	4.5%	4.4%	3.5%	3.6%	3.7%	*estimates*		Avg Ann'l Div'd Yield	*3.7%*

CAPITAL STRUCTURE as of 12/31/21
Total Debt $27082 mill. **Due in 5 Yrs** $10975 mill
LT Debt $24842 mill **LT Interest** $780 0 mill
Incl $83.6 mill of securitization bonds.
(LT interest earned 3.0x)
Leases, Uncapitalized Annual rentals $65.3 mill
Pension Assets-12/21 $6993 1 mill
Oblig $8409 6 mill.
Pfd Stock $254.4 mill **Pfd Div'd** $18 3 mill
200,000 shs 6.25%-7 5%, $100 par, 250,000 shs 8 75%, 1 4 mill. shs. 5 375%, all cum , without sinking fund
Common Stock 203,027,662 shs **as of 1/31/22**
MARKET CAP: $21 billion (Large Cap)

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		25-27
10302	11391	12495	11513	10846	11074	11009	10879	10114	11743	*11300*	*11500*	Revenues ($mill)	*12700*
1091 9	904.5	1060 0	1061.2	1249 8	950.7	1092 1	1258.2	1406.7	1402 8	*1320*	*1420*	Net Profit ($mill)	*1735*
13 0%	26 7%	37.8%	2.2%	11 3%	1 8%	NMF	NMF	NMF	16 1%	*23.0%*	*23.0%*	Income Tax Rate	*23.0%*
11 9%	10 1%	9.3%	7.4%	8 1%	14 7%	17 5%	16 7%	12.2%	7 1%	*8.0%*	*8.0%*	AFUDC % to Net Profit	*8.0%*
55 8%	55 1%	54.9%	57.8%	63 6%	63.6%	63 2%	62 0%	65 5%	67 6%	*66.5%*	*66.5%*	Long-Term Debt Ratio	*66.5%*
42 9%	43.6%	43 8%	40.8%	35 5%	35 5%	35.9%	37 1%	33 7%	31 7%	*32.5%*	*33.0%*	Common Equity Ratio	*33.0%*
21432	22109	22842	22714	22777	22528	24602	27557	32386	36733	*38025*	*40175*	Total Capital ($mill)	*47000*
27299	27882	28723	27824	27921	29664	31974	35183	38853	42244	*43675*	*45250*	Net Plant ($mill)	*49900*
6.4%	5.4%	6.0%	6 0%	6.9%	5.7%	5.8%	5 9%	5.6%	4.8%	*4.5%*	*4.5%*	Return on Total Cap'l	*5.0%*
11.5%	9.1%	10 3%	11 1%	15.1%	11 6%	12 0%	12 0%	12.6%	11 6%	*10.5%*	*10.5%*	Return on Shr. Equity	*11.0%*
11 6%	9 2%	10.4%	11.2%	15.2%	11 7%	12.2%	12 1%	12.7%	11 9%	*10.5%*	*10.5%*	Return on Com Equity E	*11.0%*
5 2%	3 0%	4.4%	4.8%	7.7%	3.9%	4.9%	5.2%	5.9%	5.2%	*3.5%*	*4.0%*	Retained to Com Eq	*4.0%*
56%	68%	58%	58%	50%	68%	61%	58%	55%	57%	*65%*	*64%*	All Div'ds to Net Prof	*64%*

ELECTRIC OPERATING STATISTICS

	2019	2020	2021
% Change Retail Sales (KWH)	-1.4	-4 1	+3 2
Avg Indust. Use (MWH)	1070	1017	1015
Avg Indust Revs oer KWH(¢)	5 24	4.95	5 91
Capacity at Peak (Mw)	23887	25665	NA
Peak Load, Summer (Mw)	21598	21340	NA
Annual Load Factor (%)	64	62	NA
% Change Customers (yr end)	+.8	+1 0	+1.0
Fixed Charge Cov (%)	165	202	243

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '19-'21 to '25-'27
Revenues	-1 0%	-3 5%	*1 5%*
"Cash Flow"	1 0%	- 5%	*3 0%*
Earnings	- -	1 5%	*3.0%*
Dividends	1 5%	2.0%	*5 0%*
Book Value	1 5%	1 5%	*5 0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	2610	2666	3141	2462	10879
2020	2427	2413	2904	2370	10114
2021	2845	2822	3353	2723	11743
2022	*2700*	*2700*	*3200*	*2700*	*11300*
2023	*2750*	*2750*	*3250*	*2750*	*11500*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	1 32	1.22	1.82	1 94	6 30
2020	59	1.79	2.59	1.93	6 90
2021	1.66	1.30	2.63	1.28	6.87
2022	*1.25*	*1.60*	*2.70*	*.75*	*6.30*
2023	*1.35*	*1.70*	*2.85*	*.80*	*6.70*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ † Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	89	89	.89	.91	3.58
2019	.91	91	.91	93	3 66
2020	.93	.93	.93	.95	3.74
2021	95	95	.95	1.01	3 86
2022	1.01				

BUSINESS: Entergy Corporation supplies electricity to 3 million customers through subsidiaries in Arkansas, Louisiana, Mississippi, Texas, and New Orleans (regulated separately from Louisiana) Distributes gas to 206,000 customers in Louisiana. Has a nonutility subsidiary that owns one nuclear unit (scheduled to be sold after shutdown in 5/22) Electric revenue breakdown. residential, 37%; commercial, 24%, industrial, 27%, other, 12% Generating sources gas, 46%, nuclear, 30%; coal, 6%; purchased, 18%. Fuel costs 32% of revenues '21 reported depreciation rate 2.7% Has 12,400 employees Chairman & CEO Leo P Denault. Incorporated· Delaware. Address· 639 Loyola Avenue, P O Box 61000, New Orleans, Louisiana 70161. Tel. 504-576-4000 Internet www entergy com

Entergy is seeking to recover costs associated with severe storms in 2020 and 2021. In 2020, three hurricanes caused more than $2 billion of damage in Louisiana and Texas. Hurricane Ida last year resulted in restoration costs of $2 7 billion, above the previous estimate of $2 1 billion-$2.5 billion In the coming months, Entergy will issue more than $3 billion of securitized bonds, which includes $1 billion for Hurricane Ida. The utility will seek recovery from the regulatory commissions in Louisiana and New Orleans (regulated separately from the rest of the state) for the remainder of the costs from Hurricane Ida. However, Entergy received criticism last year in New Orleans for its performance following the hurricane, which might affect the regulatory process

The company's exit from the merchant power business should be completed by mid-2022. Entergy has closed and sold its nonregulated nuclear units over the past few years. Its last nonutility nuclear plant, Palisades in Michigan, will be shut down in May. The sale of the plant is expected to close in midyear. (The point of these deals is that the buyer gets the nuclear decommissioning trust at a sizable discount and the seller is relieved of the responsibility of decommissioning the facility.) Entergy's business risk has lessened as the company winds down its presence in nonregulated power generation

An earnings decline is likely in 2022, followed by improvement in 2023. Entergy's nonutility subsidiary contributed $0.61 to share net last year, so this income will likely be less this year. Another negative factor will be an increase in average shares outstanding. Our 2022 estimate is at the midpoint of Entergy's targeted range of $6.15-$6.45 a share Even so, Entergy's industrial sector is experiencing an economic recovery, and the company is benefiting from rate relief in several jurisdictions (much of which comes via formula rate plans). We think profits will advance to $6 70 a share in 2023. Management's guidance for next year is $6.55-$6.85.

This untimely stock has a dividend yield that is slightly above the utility average. Total return prospects are subpar for the next 18 months and don't stand out for the 3- to 5-year period.

Paul E. Debbas, CFA *March 11, 2022*

(A) Diluted EPS Excl nonrec. losses· '12, $1 26 '13, $1.14, '14, 56¢, '15, $6.99, '16, $10 14, '17, $2.91, '18, $1 25; '21, S1 33 Next earnings report due early May. (B) Div'ds historically paid in early Mar , June, Sept , & Dec ■ Div'd reinvestment plan avail † Shareholder investment plan avail. (C) Incl. deferred charges In '21. $35.95/sh (D) In mill. (E) Rate base: Net original cost. Allowed ROE (blended) 9.95%, earned on avg. com eq , '21· 12 1% Regulatory Climate Average

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	40
Earnings Predictability	70

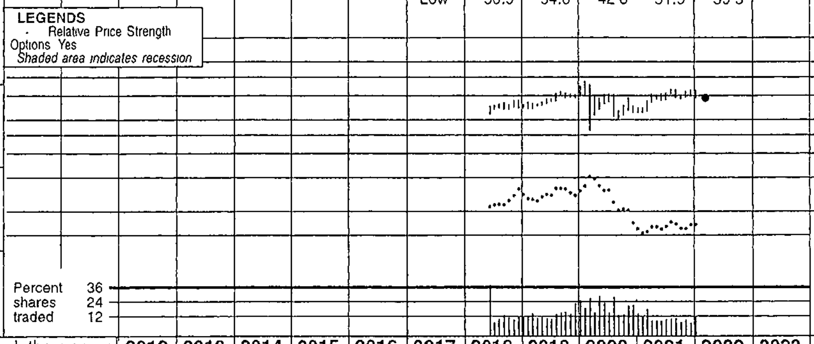
EVERGY, INC. NYSE-EVRG

RECENT PRICE 62.41 | P/E RATIO 17.9 (Trailing: 16.3 Median: NMF) | RELATIVE P/E RATIO 1.00 | DIV'D YLD 3.8% | VALUE LINE

TIMELINESS 5 Lowered 12/31/21
SAFETY 2 New 9/14/18
TECHNICAL 2 Lowered 3/11/22
BETA .95 (1.00 = Market)

	2018	2019	2020	2021	2022
High:	61 1	67.8	76 6	69 4	68 9
Low	50.9	54.6	42 0	51.9	59 5

LEGENDS
· Relative Price Strength
Options Yes
Shaded area indicates recession



Target Price Range
2025 | 2026 | 2027
128
96
80
64
48
40
32
24
16
12

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$50-$73 $62 (0%)

2025-27 PROJECTIONS	Price	Gain	Ann'l Total Return
High	95	(+50%)	14%
Low	70	(+10%)	7%

Institutional Decisions

	2Q2021	3Q2021	4Q2021
to Buy	291	262	308
to Sell	220	240	237
Hld's(000)	198932	204443	206094

Percent shares traded 36 24 12

% TOT. RETURN 2/22

	THIS STOCK	VL ARITH.* INDEX
1 yr	26.4	15 1
3 yr.	29 7	61 1
5 yr	—	84 2

Evergy, Inc. was formed through the merger of Great Plains Energy and Westar Energy in June of 2018. Great Plains Energy holders received .5981 of a share of Evergy for each of their shares, and Westar Energy holders received one share of Evergy for each of their shares. The merger was completed on June 4, 2018. Shares of Evergy began trading on the New York Stock Exchange one day later.

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	© VALUE LINE PUB. LLC	25-27
--	--	--	--	--	--	16.75	22.71	21.66	24.36	*23.05*	*23.70*	Revenues per sh	*26.50*
--	--	--	--	--	--	4.89	7 18	7.06	8 18	*8.05*	*8.45*	"Cash Flow" per sh	*10.00*
--	--	--	--	--	--	2.50	2 79	2 72	3.83	*3.55*	*3.80*	Earnings per sh A	*4.75*
--	--	--	--	--	--	1.74	1.93	2.05	2.18	*2.33*	*2.48*	Div'd Decl'd per sh B ■	*3.05*
--	--	--	--	--	--	4.19	5 34	6.88	8.60	*8.60*	*9.20*	Cap'l Spending per sh	*9.50*
--	--	--	--	--	--	39 28	37 82	38.50	40.32	*41.45*	*42.75*	Book Value per sh C	*47.75*
--	--	--	--	--	--	255 33	226 64	226.84	229.30	*230.00*	*230.00*	Common Shs Outst'g D	*230.00*
--	--	--	--	--	--	22.7	21.8	21.7	16.2	*Bold figures are*		Avg Ann'l P/E Ratio	*17.5*
--	--	--	--	--	--	1.23	1 16	1 11	.87	*Value Line*		Relative P/E Ratio	*.95*
--	--	--	--	--	--	3 1%	3.2%	3 5%	3 5%	*estimates*		Avg Ann'l Div'd Yield	*3.7%*
--	--	--	--	--	--	4275.9	5147.8	4913 4	5586 7	*5300*	*5450*	Revenues ($mill)	*6100*
--	--	--	--	--	--	535.8	669.9	618 3	879 7	*835*	*895*	Net Profit ($mill)	*1130*
--	--	--	--	--	--	9.8%	12.6%	14.1%	11.7%	*10.0%*	*10.0%*	Income Tax Rate	*10.0%*
--	--	--	--	--	--	2 5%	2.5%	5.5%	5 0%	*5.0%*	*6.0%*	AFUDC % to Net Profit	*5.0%*
--	--	--	--	--	--	40.0%	50 6%	51.3%	50.1%	*51.5%*	*51.5%*	Long-Term Debt Ratio	*53.0%*
--	--	--	--	--	--	60.0%	49 4%	48.7%	49 9%	*48.5%*	*48.5%*	Common Equity Ratio	*47.0%*
--	--	--	--	--	--	16716	17337	17924	18542	*19675*	*20200*	Total Capital ($mill)	*23400*
--	--	--	--	--	--	18952	19346	20106	21150	*22100*	*23150*	Net Plant ($mill)	*26300*
--	--	--	--	--	--	4.0%	4.8%	4 5%	5 7%	*5.0%*	*5.5%*	Return on Total Cap'l	*6.0%*
--	--	--	--	--	--	5 3%	7.8%	7.1%	9.5%	*8.5%*	*9.0%*	Return on Shr. Equity	*10.0%*
--	--	--	--	--	--	5.3%	7.8%	7 1%	9.5%	*8.5%*	*9.0%*	Return on Com Equity E	*10.0%*
--	--	--	--	--	--	.6%	2 4%	1.8%	4.1%	*3.0%*	*3.0%*	Retained to Com Eq	*4.0%*
--	--	--	--	--	--	89%	69%	75%	57%	*64%*	*64%*	All Div'ds to Net Prof	*62%*

CAPITAL STRUCTURE as of 12/31/21
Total Debt $11166 mill. **Due in 5 Yrs** $4100.3 mill.
LT Debt $9297.9 mill **LT Interest** $332.8 mill
Incl $40 9 mill. finance leases
(LT interest earned 3.8x)

Leases, Uncapitalized Annual rentals $18 8 mill

Pension Assets-12/21 $1714.7 mill
Oblig $2561.7 mill.

Pfd Stock None

Common Stock 229,311,689 shs
as of 2/18/22
MARKET CAP: $14 billion (Large Cap)

ELECTRIC OPERATING STATISTICS	2019	2020	2021
% Change Retail Sales (KWH)	NA	-3 9	+3 1
Avg. Indust Use (MWH)	NA	NA	NA
Avg Indust Revs per KWH (¢)	7 25	7.14	6 94
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	NA	NA	NA
Fixed Charge Cov (%)	305	286	350

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '19-'21 to '25-'27
Revenues	--	--	*2 5%*
"Cash Flow"	--	--	*5 0%*
Earnings	--	--	*7 5%*
Dividends	--	--	*7 0%*
Book Value	--	--	*3.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	1217	1222	1578	1131	5147.8
2020	1117	1185	1517	1094	4913.4
2021	1612	1236	1617	1122	5586.7
2022	*1250*	*1250*	*1650*	*1150*	*5300*
2023	*1300*	*1300*	*1700*	*1150*	*5450*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	.39	.57	1.56	.28	2.79
2020	31	59	1.60	.22	2.72
2021	84	81	1.95	.23	3.83
2022	*.55*	*.85*	*1.85*	*.30*	*3.55*
2023	*.60*	*.90*	*2.00*	*.30*	*3.80*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.40	.40	.46	.475	1.74
2019	.475	.475	475	.505	1.93
2020	.505	.505	.505	.535	2 05
2021	.535	.535	535	.5725	2.18
2022	.5725				

BUSINESS: Evergy, Inc was formed through the merger of Great Plains Energy and Westar Energy in June of 2018. Through its subsidiaries (now doing business under the Evergy name), provides electric service to 1 6 million customers in Kansas and Missouri including the greater Kansas City area Electric revenue breakdown· residential, 34%, commercial, 30%, industrial, 11%, wholesale, 13%, other, 12% Generating sources· coal, 54%, nuclear, 17%; purchased, 29% Fuel costs 28% of revenues. '21 reported deprec rate: 3% Has 4,900 employees Chairman: Mark A Ruelle President & CEO. David A. Campbell COO. Kevin E. Bryant Inc.: Missouri Address 1200 Main Street, Kansas City, Missouri 64105 Tel · 816-556-2200 Internet. www.evergy com

Evergy's utilities in Missouri have filed general rate cases. The company's Missouri Metro utility requested an increase of $43.9 million (5.2%), based on a return on equity of 10% and a common-equity ratio of 51.2%. Its Missouri West utility filed for a hike of $27.7 million (3.8%), based on a 10% ROE and a 51.8% common-equity ratio. These are the first rate cases Evergy has filed since the company was formed through a merger in June of 2018. Capital additions and updated depreciation rates are driving the petitions, partly offset by reductions in operating and maintenance expenses. New tariffs are expected to take effect on December 6th, 11 months after the filing date. This will be too late to have a significant effect on earnings in 2022. Note that the company plans to file rate applications in Kansas in 2023.

The earnings decline that is probable for 2022 should not be troubling for investors. Last year, a cold spell in the Gulf Coast region in February was a boon for Evergy's energy-marketing subsidiary. This boosted pretax income by $86.6 million in the first quarter. We expect no repeat of these auspicious conditions this year A return to normal weather patterns would also be negative for the year-to-year comparison, as favorable weather boosted share net by $0 08 in 2021. Still, there should be some positive factors, including increased income from the company's transmission system We are sticking with our 2022 earnings estimate of $3.55 a share, which is within Evergy's targeted range of $3.43-$3.63.

We expect earnings to improve in 2023. Rate relief in Missouri should be a key factor. Modest growth in kilowatt-hour sales should help, as well. Our estimate of $3.80 a share would produce an increase of 7%. This is within Evergy's annual goal of 6%-8%.

This untimely stock has a dividend yield that is about average for a utility. Total return potential is subpar for the next 18 months and somewhat below average for the 3- to 5-year period. A standstill agreement with two investors expires after the 2022 annual meeting (normally held in the first week of May), so there is some speculative appeal.

Paul E. Debbas, CFA *March 11, 2022*

(A) Diluted earnings. '19 EPS don't sum to full-year total due to rounding Next earnings report due early May (B) Dividends paid in mid-March, June, September, and December ■ Dividend reinvestment plan available (C) Incl. intangibles. In '21 $4327.7 mill, $18 87/sh. (D) In millions (E) Rate base Original cost depreciated. Rate allowed on common equity in Missouri in '18: none specified; in Kansas in '18. 9 3% Earned on average common equity, '21 9 8%. Regulatory Climate· Average.

Company's Financial Strength	B++
Stock's Price Stability	80
Price Growth Persistence	NMF
Earnings Predictability	NMF

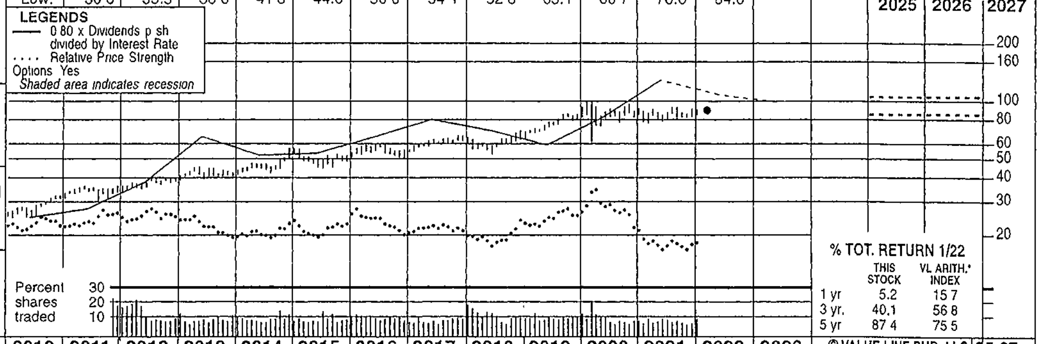
EVERSOURCE ENERGY NYSE-ES

RECENT PRICE 89.49 | P/E RATIO 22.8 (Trailing: 26.0 Median: 19.0) | RELATIVE P/E RATIO 1.29 | DIV'D YLD 2.9% | VALUE LINE

TIMELINESS 3 Raised 1/14/22
SAFETY 1 Raised 5/22/15
TECHNICAL 2 Lowered 2/11/22
BETA .90 (1.00 = Market)

High:	36 5	40 9	45 7	56 7	56 8	60 4	66 1	70 5	86 6	99 4	92 7	90 9
Low:	30 0	33.5	38 6	41 3	44.6	50 0	54 1	52 8	63.1	60 7	76.6	84.0

Target Price Range 2025 | 2026 | 2027



18-Month Target Price Range
Low-High Midpoint (% to Mid)
$72-$121 $97 (10%)

2025-27 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	105	(+15%)	7%
Low	85	(-5%)	2%

Institutional Decisions

	1Q2021	2Q2021	3Q2021
to Buy	331	360	328
to Sell	369	326	308
Hld's(000)	266387	266114	272358

% TOT. RETURN 1/22

	THIS STOCK	VL ARITH.* INDEX
1 yr	5.2	15 7
3 yr.	40.1	56 8
5 yr	87 4	75 5

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	© VALUE LINE PUB. LLC	25-27
44.64	37.27	37 22	30.97	27.76	25.21	19.98	23 16	24.42	25.08	24.11	24.46	26.66	25.85	25 96	*28.45*	*28.80*	*29.50*	Revenues per sh	*32.25*
3.69	4 82	6.16	4.96	5.68	4.88	4.03	5.22	4.56	4 94	5 46	5 84	6 64	6.65	6.89	*6.80*	*7.55*	*7.85*	"Cash Flow" per sh	*9.25*
.82	1.59	1 86	1 91	2.10	2.22	1.89	2 49	2.58	2.76	2.96	3.11	3 25	3.45	3.55	*3.45*	*4.05*	*4.25*	Earnings per sh A	*5.00*
.73	.78	.83	.95	1.03	1.10	1 32	1 47	1 57	1 67	1.78	1 90	2.02	2.14	2.27	2.41	*2.56*	*2.72*	Div'd Decl'd per sh B ■	*3.20*
5.49	7 14	8 06	5.17	5.41	6.08	4.69	4.62	5.06	5.44	6.24	7.41	7.96	8.83	8 58	*10.25*	*10.20*	*10.10*	Cap'l Spending per sh	*8.50*
18 14	18.65	19 38	20.37	21.60	22.65	29.41	30.49	31.47	32.64	33.80	34.99	36.25	38.29	41.01	*42.20*	*44.05*	*46.00*	Book Value per sh C	*52.25*
154.23	156.22	155.83	175.62	176.45	177.16	314.05	315.27	316.98	317.19	316.89	316.89	316.89	329.88	342.95	*344.30*	*347.00*	*351.00*	Common Shs Outst'g D	*360.00*
27.1	18.7	13.7	12 0	13.4	15.4	19.9	16 9	17 9	18 1	18.7	19 5	18 7	22 1	24.3	*24.8*	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	*19.5*
1.46	.99	.82	.80	.85	.97	1 27	.95	.94	.91	.98	.98	1.01	1 18	1 25	*1.35*			Relative P/E Ratio	*1.10*
3.3%	2.6%	3.2%	4.2%	3 6%	3.2%	3.5%	3.5%	3 4%	3 3%	3 2%	3.1%	3.3%	2 8%	2.6%	2 8%			Avg Ann'l Div'd Yield	*3.3%*
						6273 8	7301.2	7741 9	7954 8	7639.1	7752 0	8448.2	8526 5	8904.4	*9800*	*10000*	*10350*	Revenues ($mill)	*11650*
						533 0	793.7	827 1	886 0	949.8	995.5	1040.5	1121.0	1212 7	*1195*	*1405*	*1485*	Net Profit ($mill)	*1800*
						34 0%	35 0%	36 2%	37 9%	36 9%	36.8%	21 7%	19 7%	22 2%	*24.5%*	*20.0%*	*20.0%*	Income Tax Rate	*20.0%*
						2 3%	1 4%	2 4%	2 9%	3 9%	4.7%	6 1%	6 3%	5 4%	*5.0%*	*5.0%*	*4.0%*	AFUDC % to Net Profit	*4.0%*
						43 7%	44 3%	45 9%	45 6%	44 8%	51.2%	52 4%	52 8%	52.4%	*55.0%*	*55.5%*	*55.5%*	Long-Term Debt Ratio	*57.0%*
						55 4%	54.8%	53.2%	53 6%	54 4%	48.2%	46 9%	46 6%	47 1%	*44.5%*	*44.0%*	*44.0%*	Common Equity Ratio	*42.5%*
						16675	17544	18738	19313	19697	23018	24474	27097	29842	*32700*	*34675*	*36825*	Total Capital ($mill)	*44000*
						16605	17576	18647	19892	21351	23617	25610	27585	30883	*33400*	*35875*	*38300*	Net Plant ($mill)	*43900*
						4.2%	5.5%	5 3%	5.5%	5 8%	5 2%	5 2%	5.1%	5.0%	*5.0%*	*5.0%*	*5.0%*	Return on Total Cap'l	*5.0%*
						5.7%	8.1%	8.2%	8.4%	8.7%	8.9%	8 9%	8.8%	8.5%	*8.5%*	*9.0%*	*9.0%*	Return on Shr. Equity	*9.5%*
						5 7%	8.2%	8 2%	8 5%	8 8%	8.9%	9.0%	8 8%	8.6%	*8.5%*	*9.0%*	*9.0%*	Return on Com Equity E	*9.5%*
						1 6%	3.4%	3.5%	3 4%	3 5%	3.5%	3 4%	3 6%	3.3%	*2.5%*	*3.5%*	*3.5%*	Retained to Com Eq	*3.5%*
						72%	59%	58%	61%	60%	61%	62%	60%	62%	*70%*	*64%*	*64%*	All Div'ds to Net Prof	*64%*

CAPITAL STRUCTURE as of 9/30/21
Total Debt $19427 mill **Due in 5 Yrs** $7090 6 mill
LT Debt $17874 mill **LT Interest** $619 8 mill
(LT interest earned 3 7x)
Leases, Uncapitalized Annual rentals $11 4 mill
Pension Assets-12/20 $5409 2 mill
Oblig $7045 3 mill
Pfd Stock $155 6 mill. **Pfd Div'd** $7 6 mill
Incl 2,324,000 shs $1.90-$3.28 rates ($50 par) not subject to mandatory redemption, call. at $50.50-$54 00, 430,000 shs 4.25%-4 78% not subject to mandatory redemption, call. at $102 80-$103.63.
Common Stock 343,805,812 shs. as of 10/31/21
MARKET CAP: $31 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2018	2019	2020
% Change Retail Sales (KWH)	+2 2	-3 3	-2 7
Avg Indust Use (MWH)	NA	NA	NA
Avg. Indust. Revs per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Winter (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr end)	+ 5	+ 7	+.8
Fixed Charge Cov (%)	319	319	345

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '25-'27
Revenues	-2.0%	1.5%	*3 0%*
"Cash Flow"	2 0%	6.5%	*4.5%*
Earnings	5 5%	5 5%	*5.5%*
Dividends	8.5%	6 5%	*6 0%*
Book Value	6 5%	4 0%	*4 5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	2415	1884	2175	2050	8526 5
2020	2373	1953	2343	2233	8904 4
2021	2826	2122	2461	*2391*	*9800*
2022	*2850*	*2200*	*2550*	*2400*	*10000*
2023	*2950*	*2250*	*2650*	*2500*	*10350*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	.97	.74	.98	.76	3.45
2020	1.01	.75	1 01	.78	3 55
2021	1.06	.77	.82	*.80*	*3.45*
2022	*1.17*	*.87*	*1.08*	*.93*	*4.05*
2023	*1.25*	*.90*	*1.13*	*.97*	*4.25*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.505	.505	.505	.505	2.02
2019	.535	.535	.535	.535	2.14
2020	.5675	.5675	.5675	.5675	2.27
2021	.6025	.6025	.6025	.6025	2 41
2022					

BUSINESS: Eversource Energy (formerly Northeast Utilities) is the parent of utilities with 3 2 mill electric, 881,000 gas, 216,000 water customers Supplies power to most of Connecticut and gas to part of Connecticut, supplies power to 3/4 of New Hampshire's population, supplies power to western Massachusetts and parts of eastern MA & gas to central & eastern MA, supplies water to CT, MA, & NH Acq'd NSTAR 4/12, Aquarion 12/17; Columbia Gas 10/20. Electric rev breakdown residential, 56%; commercial, 33%, industrial, 5%, other, 6% Fuel costs: 34% of revs '20 reported deprec rate: 3 0% Has 9.300 employees Chairman: James J Judge President & CEO: Joe Nolan. Inc MA Address 300 Cadwell Drive, Springfield, MA 01104 Tel: 413-785-5871. Internet www.eversource.com

Eversource Energy will likely post a significant earnings increase in 2022. The comparison is easy In 2021, the company took a charge of $0.07 a share in the first quarter for a service-related penalty in Connecticut (stemming from an outage in August of 2020) and a charge of $0.17 a share in the third period to reflect bill credits and assistance In addition, costs associated with the acquisition of a gas utility lowered the bottom line by $0 05 a share in the first nine months of 2021. Besides the absence of these costs, Eversource should continue to benefit from investments in its electric transmission system The utility will have a full year's benefit from a gas rate hike in Massachusetts that took effect on November 1, 2021 and a partial year of an increase taking effect on November 1, 2022 All told, we figure profits will exceed $4.00 a share.
We look for further growth in 2023. Ongoing transmission investment should be a factor, although we note that there is some lingering uncertainty about transmission rates. Our estimate would produce an increase of 5%, within Eversource's annual goal of 5%-7%.
The board of trustees will probably increase the dividend soon. This is the usual timing of the board's announcement. We estimate an increase of $0.15 a share (6 2%) annually. Eversource's target for yearly dividend growth is 5%-7%, the same as for profit growth.
Eversource has several significant projects in various stages of development. Most notably, the company is planning to add 1,758 megawatts of offshore wind through a joint venture with Orsted, a European company, by 2025. This is expected to enhance its annual earnings growth rate, but also entails construction risk The company also wants to add advanced meters in Connecticut at an expected cost of $475 million and in Massachusetts at an expected cost of $575 million. NSTAR Gas and Yankee Gas are replacing old gas mains. All of this will result in debt and equity financing.
This high-quality stock's dividend yield is below the mean for the electric utility industry. Total return potential does not stand out for the next 18 months or the 3- to 5-year period
Paul E. Debbas, CFA *February 11, 2022*

(A) Diluted EPS Excl nonrecurring gain (losses) 08, (19¢), '10, 9¢, '19, (64¢) Next earnings report due late Feb (B) Div'ds historically paid late Mar , June, Sept , & Dec ■ Div'd reinvestment plan avail (C) Incl deferred charges In '20 $9939.3 mill , $28 98/sh (D) In mill. (E) Rate allowed on com. eq in MA (elec.) '18, 10.0%, (gas) '20, 9.7%-9 9%, in CT (elec.) '18, 9 25%; (gas) '18, 9.3%; in NH '21, 9 3%; earned on avg. com eq., '20: 9 0% Regulatory Climate CT, Below Average NH, Average, MA, Above Average.

Company's Financial Strength	A
Stock's Price Stability	85
Price Growth Persistence	65
Earnings Predictability	100

IDACORP, INC. NYSE-IDA

RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD
112.66	23.3	(Trailing: 22.8 Median: 17.0)	1.22	2.7%

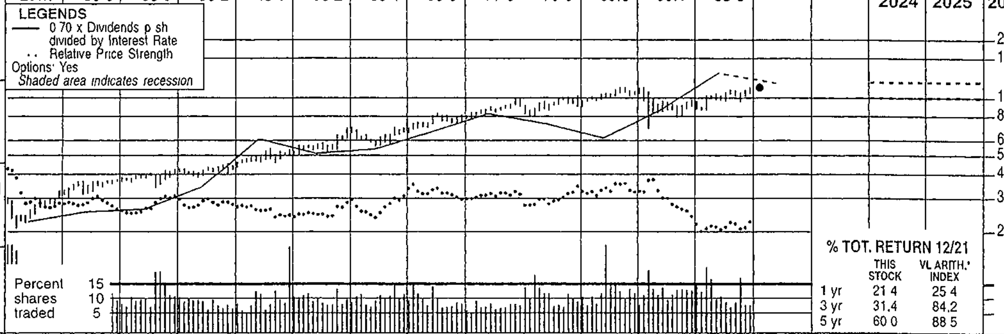
VALUE LINE

TIMELINESS 4 Lowered 8/13/21
SAFETY 1 Raised 1/22/21
TECHNICAL 3 Raised 1/7/22
BETA .80 (1 00 = Market)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
High:	37.8	42 7	45 7	54 7	70 1	70 5	83.4	100.0	102 4	114 0	113 6	113 8
Low.	30 0	33 9	38 2	43 1	50 2	55 4	65 0	77 5	79 6	89.3	69.1	85 3

Target Price Range
2024 | 2025 | 2026

LEGENDS
— 0 70 x Dividends p sh divided by Interest Rate
.. Relative Price Strength
Options: Yes
Shaded area indicates recession



18-Month Target Price Range
Low-High Midpoint (% to Mid)
$92-$140 $116 (5%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	120	(+5%)	5%
Low	100	(-10%)	Nil

Institutional Decisions

	1Q2021	2Q2021	3Q2021
to Buy	183	145	163
to Sell	156	186	145
Hld's(000)	39645	39928	39867

Percent shares traded 15 10 5

% TOT. RETURN 12/21

	THIS STOCK	VL ARITH.* INDEX
1 yr	21 4	25 4
3 yr	31.4	84.2
5 yr	60 0	88 5

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
20 15	21.23	19.51	20.47	21.92	20.97	20.55	21.55	24.81	25.51	25.23	25.04	26.76	27 19	26.70	26.77	*28.95*	*29.75*	Revenues per sh	*32.75*
3.87	4 58	4.11	4.27	5.07	5.35	5.84	5 93	6 29	6.58	6.70	6.86	7.50	7.85	8.07	8.19	*8.50*	*8.80*	"Cash Flow" per sh	*10.00*
1 75	2.35	1.86	2.18	2.64	2.95	3.36	3 37	3 64	3.85	3 87	3 94	4.21	4.49	4.61	4.69	*4.90*	*5.10*	Earnings per sh A	*5.75*
1.20	1 20	1.20	1.20	1 20	1 20	1.20	1.37	1.57	1.76	1 92	2.08	2 24	2.40	2.56	2 72	2 88	*3.05*	Div'd Decl'd per sh B ■ †	*3.70*
4 53	5.16	6.39	5.19	5.26	6.85	6.76	4 78	4.68	5.45	5.84	5.89	5.66	5.51	5.53	6.16	*7.25*	*7.70*	Cap'l Spending per sh	*10.00*
24 04	25.77	26.79	27 76	29.17	31 01	33.19	35.07	36.84	38.85	40.88	42.74	44.65	47.01	48.88	50 73	*52.80*	*54.85*	Book Value per sh C	*61.25*
42 66	43 63	45.06	46.92	47.90	49 41	49.95	50 16	50.23	50.27	50 34	50 40	50.42	50 42	50 42	50.46	*50.45*	*50.45*	Common Shs Outst'g D	*50.45*
16 7	15 1	18.2	13.9	10.2	11.8	11.5	12.4	13.4	14 7	16.2	19.1	20.6	20 5	22.3	19.9	*20.6*		Avg Ann'l P/E Ratio	*19.0*
.89	.82	.97	.84	.68	.75	.72	.79	.75	.77	.82	1.00	1.04	1.11	1 19	1.02	*1.10*		Relative P/E Ratio	*1.05*
4.1%	3.4%	3 5%	4 0%	4.5%	3.4%	3.1%	3.3%	3.2%	3.1%	3 1%	2.8%	2.6%	2.6%	2.5%	2.9%	2.9%		Avg Ann'l Div'd Yield	*3.4%*

CAPITAL STRUCTURE as of 9/30/21
Total Debt $2000 6 mill. **Due in 5 Yrs** $144 7 mill
LT Debt $2000 6 mill **LT Interest** $83 4 mill
(LT interest earned 3 9x)

Pension Assets-12/20 $871 6 mill
Oblig $1337 4 mill

Pfd Stock None

Common Stock 50,516,479 shs
as of 10/22/21

MARKET CAP: $5.7 billion (Large Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
1026 8	1080 7	1246 2	1282 5	1270.3	1262 0	1349.5	1370 8	1346 4	1350 7	*1460*	*1500*	Revenues ($mill)	*1650*
166 9	168.9	182 4	193 5	194.7	198.3	212 4	226 8	232.9	237 4	*250*	*255*	Net Profit ($mill)	*290*
- -	13 4%	28 3%	8 0%	19 0%	15 5%	18 6%	7 1%	9 5%	10 8%	*10.5%*	*10.5%*	Income Tax Rate	*10.5%*
23.3%	20 3%	12 3%	13 6%	16 3%	16 3%	13 9%	15 2%	16 2%	17 3%	*17.0%*	*17.0%*	AFUDC % to Net Profit	*17.0%*
45.6%	45 5%	46 6%	45 3%	45 6%	44 8%	43 7%	43 6%	41 3%	43 9%	*44.5%*	*44.5%*	Long-Term Debt Ratio	*49.0%*
54 4%	54 5%	53 4%	54.7%	54 4%	55 2%	56 3%	56 4%	58 7%	56 1%	*55.5%*	*55.5%*	Common Equity Ratio	*51.0%*
3045 2	3225.4	3465.9	3567.6	3783.3	3898 5	3997.5	4205.1	4201.3	4560.4	*4815*	*4990*	Total Capital ($mill)	*6025*
3406.6	3536.0	3665.0	3833.5	3992.4	4172.0	4283.9	4395.7	4531.5	4709.5	*4895*	*5095*	Net Plant ($mill)	*6000*
6.8%	6.5%	6.4%	6 6%	6.2%	6.1%	6.3%	6 4%	6.5%	6.1%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.0%*
10 1%	9 6%	9.9%	9.9%	9.5%	9 2%	9.4%	9.6%	9 4%	9.3%	*9.5%*	*9.5%*	Return on Shr. Equity	*9.5%*
10.1%	9.6%	9.9%	9 9%	9.5%	9.2%	9.4%	9.6%	9.4%	9.3%	*9.5%*	*9.5%*	Return on Com Equity E	*9.5%*
6.5%	5.7%	5.6%	5.4%	4.8%	4.3%	4.4%	4.4%	4.2%	3.9%	*4.0%*	*3.5%*	Retained to Com Eq	*3.5%*
36%	41%	43%	46%	50%	53%	53%	54%	56%	58%	*59%*	*60%*	All Div'ds to Net Prof	*64%*

ELECTRIC OPERATING STATISTICS

	2018	2019	2020
% Change Retail Sales (KWH)	+ 1	- 3	+2 0
Avg Indust. Use (MWH)	NA	NA	NA
Avg. Indust Revs per KWH (¢)	5.64	5 32	5 38
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	3392	3242	3392
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+2 3	+2 5	+2 7
Fixed Charge Cov (%)	309	307	313

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	2.5%	1 5%	*3.5%*
"Cash Flow"	5 0%	4.5%	*3 5%*
Earnings	6.0%	4 0%	*4 0%*
Dividends	8.0%	8 0%	*6 5%*
Book Value	5.0%	4.5%	*4.0%*

Cal-endar	QUARTERLY REVENUES($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	310.1	340.0	408 8	311.9	1370.8
2019	350.3	316 9	386 3	292 9	1346 4
2020	291 0	318.8	425.3	315.6	1350.7
2021	316 1	360.1	446 9	*336.9*	*1460*
2022	*330*	*355*	*465*	*350*	*1500*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	72	1 23	2.02	.52	4.49
2019	84	1 05	1.78	.93	4.61
2020	.74	1.19	2.02	.74	4.69
2021	89	1.38	1 93	*.70*	*4.90*
2022	*.95*	*1.25*	*2.10*	*.80*	*5.10*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ † Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.59	59	.59	.63	2 40
2019	63	63	63	67	2 56
2020	.67	67	67	71	2.72
2021	.71	.71	.71	75	2 88
2022					

BUSINESS: IDACORP, Inc is a holding company for Idaho Power Company, a regulated electric utility that serves 583,000 customers throughout a 24,000-square-mile area in southern Idaho and eastern Oregon (population 1 2 million). Most of the company's revenues are derived from the Idaho portion of its service area. Revenue breakdown: residential, 42%; commercial, 22%; industrial, 14%; irrigation, 12%, other, 10% Generating sources: hydro, 39%; coal, 21%; gas, 12%; purchased, 28% Fuel costs 32% of revenues '20 reported depreciation rate 2 9% Has 1,900 employees Chairman: Richard J Dahl President & CEO Lisa Grow Incorporated: Idaho. Address 1221 W. Idaho St., Boise, Idaho 83702. Telephone: 208-388-2200 Internet www idacorpinc com

The year that just ended was a good one for IDACORP, and we look for further growth in 2022. We think earnings in 2021 reached the upper end of the company's targeted range of $4.80-$4.90 a share This would provide a 4% profit increase over the 2020 tally, which also was a solid year. The company's utility subsidiary, Idaho Power, is benefiting from strong customer growth. This metric was 2 9% for the 12-month period that ended on September 30th. The utility is also seeing the addition of large customers in its service area. A cobalt mine is expected to begin operations in mid-2022, Shell is adding a renewable natural gas facility, and a data center that is expected to use more than 20 megawatts is on the drawing board. In addition, management is controlling operating and maintenance expenses effectively O&M costs in 2021 probably approximated the 2020 level, even in the face of inflationary pressures All told, we think the bottom line will advance another 4%, to $5.10 a share, in 2022. IDACORP will likely provide earnings guidance for this year when the company reports its financial results in mid-February

The utility's integrated resource plan (IRP) is indicative of its accelerating growth in demand. Filed in late 2021, the IRP projects 2.6% annual growth in retail kilowatt-hour sales over the next five years The previous IRP, filed two years earlier, projected 1.3% yearly growth Idaho Power has put out a request for proposals seeking 80 mw of dispatchable capacity by mid-2023 in order to meet its expected peak demand. If the company winds up building this capacity, the utility might have to file a rate case. This has not occurred since 2011 because Idaho Power has been earning its allowed return on equity.

This high-quality but untimely stock has a lofty valuation for a utility. This reflects the market's view of IDACORP's consistency, financial health (Financial Strength rating: A+), and solid dividend growth prospects The dividend yield is nearly a percentage point below the utility average The equity does not stand out for the next 18 months. The recent quotation is well within our 3- to 5-year Target Price Range, so total return potential is low

Paul E. Debbas, CFA *January 21, 2022*

(A) Diluted EPS Excl nonrecurring gain (loss): '05 (24¢), '06, 17¢. '19 earnings don't sum due to rounding Next earnings report due mid-February (B) Dividends historically paid in late Feb., May, Aug., and Nov ■ Dividend reinvestment plan available † Shareholder investment plan available. (C) Incl intangibles In '20: $1495 5 mill, $26.31/sh (D) In millions. (E) Rate base: Net original cost Rate allowed on common equity in '12 10% (imputed), earned on avg com. eq., '20: 9.5% Regulatory Climate: Above Average.

Company's Financial Strength	A+
Stock's Price Stability	100
Price Growth Persistence	70
Earnings Predictability	100

NORTHWESTERN NDQ-NWE

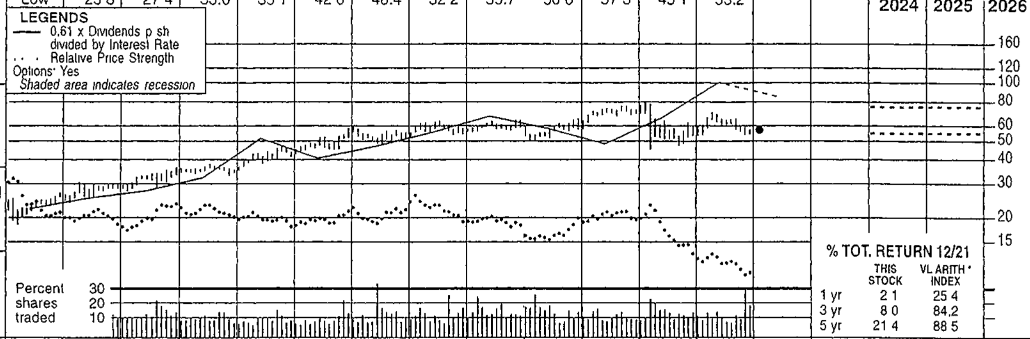
RECENT PRICE 57.09 | P/E RATIO 17.1 (Trailing: 15.4 Median: 17.0) | RELATIVE P/E RATIO 0.90 | DIV'D YLD 4.4% | VALUE LINE

TIMELINESS 5 Lowered 12/24/21
SAFETY 2 Raised 7/27/18
TECHNICAL 4 Raised 1/14/22
BETA 95 (1 00 = Market)

High	30 6	36 6	38 0	47 2	58 7	59 7	63 8	64 5	65 7	76 7	80 5	70 8
Low	23 8	27 4	33.0	35 1	42 6	48.4	52 2	55.7	50 0	57 3	45 1	53.2

Target Price Range 2024 | 2025 | 2026

LEGENDS
— 0.61 x Dividends p sh divided by Interest Rate
. . . Relative Price Strength
Options: Yes
Shaded area indicates recession



18-Month Target Price Range
Low-High Midpoint (% to Mid)
$48-$79 $64 (10%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(+30%)	11%
Low	55	(-5%)	4%

Institutional Decisions

	1Q2021	2Q2021	3Q2021
to Buy	114	118	121
to Sell	130	125	112
Hld's(000)	47776	47852	49375

Percent shares traded 30 20 10

% TOT. RETURN 12/21

	THIS STOCK	VL ARITH.* INDEX
1 yr	2 1	25 4
3 yr	8 0	84.2
5 yr	21 4	88 5

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
32.57	31.49	30.79	35.09	31.72	30.66	30.80	28.76	29.80	25.68	25.21	26.01	26 45	23 81	24.93	23.70	*24.75*	*22.50*	Revenues per sh	*24.25*
4.00	3 62	3.70	4.40	4.62	4.76	5 42	5.18	5.45	5 39	5.92	6 74	6.76	6.96	7.07	6.72	*7.05*	*6.55*	"Cash Flow" per sh	*7.50*
1 71	1.31	1.44	1.77	2.02	2 14	2 53	2.26	2.46	2 99	2.90	3.39	3.34	3.40	3.53	3.06	*3.65*	*3.35*	Earnings per sh A	*3.75*
1.00	1.24	1.28	1.32	1 34	1.36	1 44	1.48	1.52	1.60	1.92	2 00	2 10	2.20	2.30	2.40	2.48	*2.52*	Div'd Decl'd per sh B ■ †	*2.65*
2 26	2.81	3.00	3 47	5.26	6.30	5 20	5 89	5.95	5.76	5.89	5.96	5 60	5.64	6 26	8 02	*8.70*	*9.70*	Cap'l Spending per sh	*6.75*
20.60	20 65	21 12	21.25	21.86	22.64	23.68	25 09	26 60	31.50	33.22	34.68	36 44	38 60	40 42	41.10	*42.95*	*44.80*	Book Value per sh C	*48.00*
35 79	35.97	38.97	35.93	36.00	36.23	36.28	37.22	38.75	46.91	48.17	48.33	49.37	50 32	50 45	50.59	*54.50*	*60.00*	Common Shs Outst'g D	*62.00*
17.1	26 0	21.7	13.9	11 5	12 9	12.6	15 7	16 9	16 2	18.4	17.2	17.8	16.8	19.9	19.5	*16.7*		Avg Ann'l P/E Ratio	*17.5*
.91	1 40	1.15	.84	.77	82	79	1 00	.95	85	.93	90	.90	91	1 06	1.00	*.90*		Relative P/E Ratio	*.95*
3.4%	3.6%	4 1%	5.4%	5.7%	4.9%	4.5%	4.2%	3.7%	3.3%	3.6%	3 4%	3 5%	3.9%	3 3%	4 0%	4.1%		Avg Ann'l Div'd Yield	*4.0%*

CAPITAL STRUCTURE as of 9/30/21
Total Debt $2519 5 mill **Due in 5 Yrs** $782 2 mill
LT Debt $2516 7 mill. **LT Interest** $87.8 mill.
Incl $13.4 mill. finance leases
(LT interest earned 3 0x)

Pension Assets-12/20 $688 5 mill Oblig $821 0 mill

Pfd Stock None

Common Stock 52,653,671 shs as of 10/22/21

MARKET CAP: $3.0 billion (Mid Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
1117 3	1070 3	1154.5	1204.9	1214.3	1257 2	1305.7	1198.1	1257 9	1198.7	*1350*	*1350*	Revenues ($mill)	*1500*
92.6	83 7	94 0	120.7	138 4	164 2	162.7	171 1	179 3	155 2	*195*	*190*	Net Profit ($mill)	*230*
9 8%	9 6%	13 2%	- -	13.7%	- -	7.6%	- -	1.6%	- -	*Nil*	*5.0%*	Income Tax Rate	*12.0%*
3 3%	9 4%	8 7%	8 9%	9.8%	4 3%	5 2%	3 4%	4 6%	6 3%	*7.0%*	*13.0%*	AFUDC % to Net Profit	*4.0%*
52 2%	53 8%	53 5%	53 4%	53.1%	52 0%	50.2%	52 2%	52.5%	52 8%	*50.5%*	*47.5%*	Long-Term Debt Ratio	*47.0%*
47 8%	46 2%	46 5%	46 6%	46 9%	48 0%	49 8%	47 8%	47 5%	47 2%	*49.5%*	*52.5%*	Common Equity Ratio	*53.0%*
1797.1	2020 7	2215.7	3168.0	3408.6	3493 9	3614 5	4064 6	4289 8	4409 1	*4745*	*5145*	Total Capital ($mill)	*5625*
2213.3	2435.6	2690 1	3758 0	4059 5	4214.9	4358.3	4521 3	4700 9	4952 9	*5235*	*5615*	Net Plant ($mill)	*6400*
7.0%	5.5%	5.5%	4.8%	5 2%	5 9%	5 6%	5 2%	5 2%	4.5%	*5.0%*	*4.5%*	Return on Total Cap'l	*5.0%*
10.8%	9 0%	9.1%	8.2%	8.6%	9.8%	9 0%	8.8%	8.8%	7.5%	*8.0%*	*7.0%*	Return on Shr. Equity	*7.5%*
10.8%	9.0%	9 1%	8.2%	8.6%	9 8%	9.0%	8 8%	8.8%	7.5%	*8.0%*	*7.0%*	Return on Com Equity E	*7.5%*
4.7%	3.2%	3.5%	3.8%	3.0%	4.1%	3 4%	3 2%	3.1%	1.7%	*2.5%*	*1.5%*	Retained to Com Eq	*2.0%*
56%	65%	61%	54%	65%	58%	62%	64%	64%	78%	*68%*	*75%*	All Div'ds to Net Prof	*71%*

ELECTRIC OPERATING STATISTICS

	2018	2019	2020
% Change Retail Sales (KWH)	+2 9	+4 6	-4 4
Avg. Indust Use (MWH)	34573	37808	33526
Avg Indust Revs. per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Winter (Mw)	2173	2237	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1 2	+1 2	+1 2
Fixed Charge Cov (%)	275	284	237

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	-3 0%	-2 0%	*Nil*
"Cash Flow"	4 0%	4 5%	*1 5%*
Earnings	5 5%	3 5%	*2 0%*
Dividends	5 5%	6 5%	*2.5%*
Book Value	6.0%	5 5%	*3 0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	341.5	261.8	279.9	314.9	1198.1
2019	384 2	270 7	274 8	328 2	1257.9
2020	335.3	269.4	280 6	313 4	1198.7
2021	400.8	298 2	326 0	*325*	*1350*
2022	*390*	*300*	*325*	*335*	*1350*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	1.18	.61	56	1.06	3 40
2019	1.44	.49	42	1.18	3.53
2020	1.00	43	.58	1.06	3.06
2021	1 24	72	68	*1.01*	*3.65*
2022	*1.15*	*.50*	*.60*	*1.10*	*3.35*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ † Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.55	.55	.55	.55	2.20
2019	575	575	.575	575	2 30
2020	.60	60	.60	.60	2.40
2021	62	.62	62	.62	2 48
2022					

BUSINESS: NorthWestern Corporation (doing business as NorthWestern Energy) supplies electricity & gas in the Upper Midwest and Northwest, serving 449,000 electric customers in Montana and South Dakota and 294,000 gas customers in Montana (85% of gross margin), South Dakota (14%), and Nebraska (1%) Electric revenue breakdown: residential, 39%; commercial, 47%, industrial, 4%; other, 10% Generating sources hydro, 33%, coal, 22%; wind, 7%; other, 3%, purchased, 35% Fuel costs: 25% of revenues. '20 reported deprec rate 2 8% Has 1,500 employees Chairman. Dana J Dykhouse CEO Robert C. Rowe President & COO. Brian B Bird Inc DE Address 3010 West 69th Street, Sioux Falls, SD 57108. Tel. 605-978-2900 Internet: www.northwesternenergy.com

NorthWestern's share earnings will probably decline in 2022. The main reason is the equity issuances the company made in 2021 and expects to make in 2022. NorthWestern issued $200 million last year, and has effected a forward sale for an additional $300 million that management expects to settle this year. This is being done to finance the company's capital budget and strengthen its balance sheet. The dilutive effect of the additional shares is expected to reduce share net by about $0.25 in 2022. In our October report, we had not anticipated an equity issuance in 2022 Thus, we have reduced our share-net estimate from $3.75 to $3.35. Our revised estimate is within NorthWestern's preliminary guidance of $3.20-$3.40.

The reduced earnings expectation will affect dividend growth in 2022. NorthWestern's target for the payout ratio is 60%-70% However, the payout ratio will be above this range this year, based on the company's guidance. Management suggested that the disbursement will be raised to $2 50-$2.54 a share annually. We estimate an increase to $2.52 a share (1.6%). NorthWestern's long-term goal is for annual dividend growth in line with annual profit growth of 3%-6%.

NorthWestern is planning to file an electric rate case in Montana. The utility is underearning its allowed return on equity Any rate relief won't come in time to help boost the company's earning power until 2023, however

The company is adding generating capacity. A 60 megawatt gas-fired facility in South Dakota is expected to begin commercial operation soon at a cost of $80 million. NorthWestern also plans to add 175 mw of gas-fired generation in Montana by late 2023 at a cost of $275 million. Note that the utility has not obtained a certificate of need from the state commission because this would have delayed the start of construction and raised the cost of the project

The price of this untimely stock fell slightly in 2021. We think this is due to the probable earnings decline in 2022 and the deceleration of earnings growth. The dividend yield is about one percentage point above the utility average. Total return potential to 2024-2026 is respectable.

Paul E. Debbas, CFA *January 21, 2022*

(A) Diluted EPS Excl. gain (loss) on disc ops: '05 (6¢), '06, 1¢, nonrec. gains. '12, 39¢ net; '15. 27¢; '18, 52¢; '19, 45¢. '18 '20 EPS don't sum due to rounding. Next earnings report due early Feb (B) Div'ds historically paid in late Mar., June, Sept. & Dec ■ Div'd reinvest. plan avail (C) Incl def'd charges In '20: $20 93/sh. (D) In mill (E) Rate base: Net orig cost. Rate allowed on com eq in MT in '19 (elec.): 9.65%; in '17 (gas) 9 55%, in SD in '15 none spec., in NE in '07 10 4%, earned on avg. com. eq, '20. 7 5%. Reg Climate Below Avg

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	45
Earnings Predictability	90

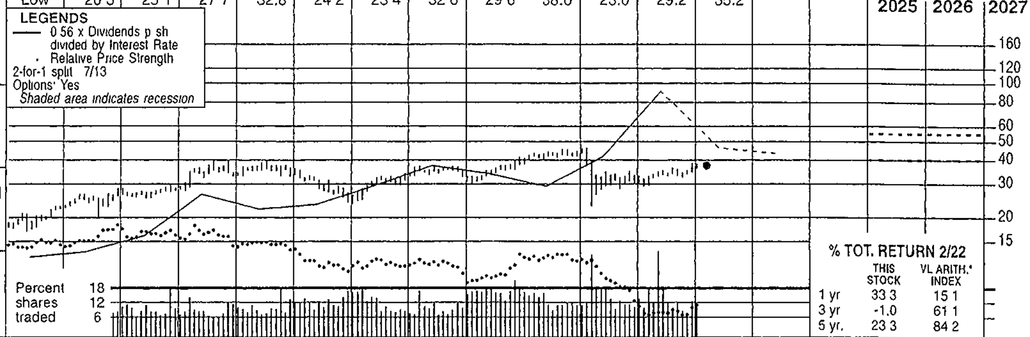
OGE ENERGY CORP. NYSE-OGE

RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD
37.55	15.2	(Trailing: 16.0 / Median: 17.0)	0.85	4.4%

VALUE LINE

TIMELINESS 4 Lowered 12/17/21
SAFETY 2 Lowered 12/18/15
TECHNICAL 2 Lowered 3/11/22
BETA 1 05 (1 00 = Market)

High:	28.6	30 1	40 0	39.3	36 5	34.2	37 4	41 8	45 8	46 4	38 6	38 5
Low:	20 3	25 1	27 7	32.8	24 2	23 4	32 6	29 6	38.0	23.0	29.2	35.2



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$27-$43	$35 (-5%)

2025-27 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(+45%)	13%
Low	40	(+5%)	6%

Institutional Decisions

	2Q2021	3Q2021	4Q2021
to Buy	165	188	230
to Sell	229	157	150
Hld's(000)	125366	126167	128749

% TOT. RETURN 2/22

	THIS STOCK	VL ARITH.* INDEX
1 yr	33 3	15 1
3 yr	-1.0	61 1
5 yr.	23 3	84 2

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	© VALUE LINE PUB. LLC	25-27
21 96	20.68	21.77	14.79	19.04	19.96	18.58	14.45	12.30	11.00	11.31	11.32	11 37	11.15	10.61	18.26	*14.00*	*15.00*	Revenues per sh	*18.25*
2.23	2 39	2 40	2.69	3.01	3 31	3 69	3 46	3 40	3 23	3.31	3.34	3.74	4 02	4 03	4.44	*4.70*	*4.95*	"Cash Flow" per sh	*6.25*
1.23	1.32	1.25	1 33	1.50	1.73	1 79	1 94	1.98	1.69	1 69	1.92	2.12	2.24	2 08	2 36	*2.50*	*2.65*	Earnings per sh A	*3.25*
67	.68	70	71	.73	.76	.80	85	.95	1.05	1.16	1.27	1.40	1.51	1.58	1.63	*1.66*	*1.70*	Div'd Decl'd per sh B ■	*1.85*
2.67	3.04	4.01	4.37	4.36	6 48	5 85	4 99	2 86	2.74	3 31	4.13	2.87	3 18	3 25	3.89	*4.75*	*4.75*	Cap'l Spending per sh	*4.75*
8.79	9.16	10 14	10.52	11.73	13 06	14.00	15.30	16 27	16.66	17.24	19.28	20.06	20 69	18 15	20 27	*21.10*	*22 05*	Book Value per sh C	*25.75*
182.40	183.60	187.00	194 00	195 20	196 20	197 60	198.50	199 40	199 70	199.70	199.70	199.70	200 10	200.10	200.10	*200.10*	*200.10*	Common Shs Outst'g D	*200.10*
13.7	13.8	12.4	10 8	13.3	14.4	15.2	17.7	18.3	17.7	17.7	18.3	16.5	19.0	16 2	14 3	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*14.0*
.74	.73	.75	.72	.85	.90	.97	.99	.96	.89	.93	.92	.89	1.01	.83	.76			Relative P/E Ratio	*.80*
4 0%	3.8%	4 5%	5.0%	3 7%	3.1%	2.9%	2.5%	2.6%	3.5%	3.9%	3.6%	4.0%	3.5%	4.7%	4.8%			Avg Ann'l Div'd Yield	*4.0%*

CAPITAL STRUCTURE as of 12/31/21
Total Debt $4983 3 mill Due in 5 Yrs $1486 9 mill
LT Debt $4496 4 mill LT Interest $158 7 mill.
(LT interest earned 4.4x)

Leases, Uncapitalized Annual rentals $5 7 mill

Pension Assets-12/21 $486 0 mill.
Oblig $502 9 mill

Pfd Stock None

Common Stock 200,201,818 shs
as of 1/31/22
MARKET CAP: $7.5 billion (Large Cap)

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		25-27
3671.2	2867.7	2453 1	2196.9	2259.2	2261 1	2270 3	2231 6	2122 3	3653 7	*2800*	*3000*	Revenues ($mill)	*3650*
355 0	387 6	395 8	337 6	338.2	384.3	425 5	449 6	415 9	472 5	*500*	*530*	Net Profit ($mill)	*660*
26 0%	24 9%	30 4%	29.2%	30.5%	32 5%	14.5%	7 4%	13 2%	11.5%	*12.0%*	*12.0%*	Income Tax Rate	*12.0%*
2 7%	2 6%	1 7%	3.7%	6.4%	15.0%	8 3%	1 6%	1 6%	2.2%	*2.0%*	*2.0%*	AFUDC % to Net Profit	*2.0%*
50 7%	43 1%	45.9%	44 3%	41 1%	41 7%	42 0%	43 6%	49 0%	52 6%	*47.5%*	*53.0%*	Long-Term Debt Ratio	*50.5%*
49 3%	56 9%	54.1%	55.7%	58.9%	58 3%	58 0%	56.4%	51 0%	47.4%	*52.5%*	*47.0%*	Common Equity Ratio	*49.5%*
5615 8	5337 2	5999.7	5971 6	5849.6	6600.7	6902 0	7334 7	7126 2	8552 7	*8020*	*9360*	Total Capital ($mill)	*10375*
8344.8	6672 8	6979 9	7322 4	7696.2	8339 9	8643.8	9044 6	9374 6	9832.9	*10345*	*10830*	Net Plant ($mill)	*12075*
7 7%	8.6%	7 8%	6 9%	7.0%	7 0%	7 3%	7.1%	6.9%	6.4%	*7.5%*	*6.5%*	Return on Total Cap'l	*7.5%*
12.8%	12 8%	12 2%	10 2%	9.8%	10 0%	10.6%	10 9%	11.5%	11 6%	*12.0%*	*12.0%*	Return on Shr. Equity	*13.0%*
12.8%	12 8%	12 2%	10 2%	9 8%	10 0%	10 6%	10 9%	11 5%	11.6%	*12.0%*	*12.0%*	Return on Com Equity E	*13.0%*
7 2%	7 3%	6.5%	4.0%	3 3%	3.5%	3.8%	3.6%	2.8%	3.6%	*4.0%*	*4.5%*	Retained to Com Eq	*5.5%*
44%	43%	47%	61%	67%	64%	64%	67%	76%	69%	*66%*	*64%*	All Div'ds to Net Prof	*56%*

ELECTRIC OPERATING STATISTICS

	2019	2020	2021
% Change Retail Sales (KWH)	+1.1	-4 9	+2.6
Avg. Indust. Use (MWH)	NA	NA	NA
Avg Indust Revs. oer KWH (¢)	4 69	4 40	7 68
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	6817	6437	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1 0	+1.1	+1 4
Fixed Charge Cov (%)	335	326	336

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '19-'21 to '25-'27
Revenues	-3.0%	3 0%	*5.5%*
"Cash Flow"	3.5%	4 5%	*7 0%*
Earnings	4 0%	4.5%	*6 5%*
Dividends	8 0%	8.5%	*3 0%*
Book Value	5.5%	3 5%	*4.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	490.0	513.7	755.4	472.5	2231.6
2020	431 3	503.5	702 1	485 4	2122 3
2021	1630.6	577.4	864.4	581.3	3653 7
2022	*600*	*650*	*900*	*650*	*2800*
2023	*650*	*700*	*950*	*700*	*3000*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	.24	.50	1 25	.26	2 24
2020	.23	.51	1.04	30	2.08
2021	.26	.56	1.26	.27	2.36
2022	*.27*	*.60*	*1.33*	*.30*	*2.50*
2023	*.30*	*.65*	*1.40*	*.30*	*2.65*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.3325	.3325	.3325	.365	1.36
2019	365	.365	365	388	1 48
2020	3875	.3875	3875	4025	1 57
2021	4025	.4025	4025	.41	1 62
2022	.41				

BUSINESS: OGE Energy Corp is a holding company for Oklahoma Gas and Electric Company (OG&E), which supplies electricity to 879,000 customers in Oklahoma (84% of electric revenues) and western Arkansas (8%), wholesale is (8%) Owns 3% of Energy Transfer's limited partnership units Electric revenue breakdown residential, 44%, commercial, 25%, industrial, 11%, oilfield, 10%, other, 10% Generating sources gas, 25%; coal, 21%; wind, 6%; purchased, 48% Fuel costs 58% of revenues. '21 reported depreciation rate (utility) 2 6% Has 2,200 employees Chairman, President and Chief Executive Officer: Sean Trauschke Incorporated Oklahoma Address: 321 North Harvey, P O. Box 321, Oklahoma City, OK 73101-0321 Tel 405-553-3000 Internet www oge com

OGE Energy's utility subsidiary filed a general rate case in Oklahoma. Oklahoma Gas and Electric requested a hike of $163.5 million, based on a 10.2% return on equity and a 53.4% common-equity ratio. The utility is seeking to place capital spending from the past three years into the rate base and asking the commission for a performance-based ratemaking plan, similar to what gas utilities have in the state. An order is expected in time for new tariffs to take effect in mid-2022.

A rate matter is pending in Arkansas. OG&E reached a settlement calling for a $4 2 million increase on April 1st under the state's formula rate plan The utility also requested a five-year extension to this plan, and expects a decision in April.

The company wants to sell its stake in Energy Transfer. OGE Energy owns 95 million units (valued at $931 million) of the master limited partnership, which completed the acquisition of Enable Midstream Partners in December. OGE Energy booked an aftertax gain of $264 8 million ($1.32 a share) on the transaction, which we *excluded* from our earnings presentation as a nonrecurring item. The company plans to use the proceeds from the unit sales to reinvest in OG&E The sale process will be gradual and might not be completed until 2023.

Our earnings estimates require an explanation. We are including equity income from OGE Energy's stake in Energy Transfer until the units are sold. Management is giving earnings guidance only for its OG&E subsidiary. The utility earned $1.80 a share last year, and the company's guidance for 2022 is $1.87-$1.97. The service area's economy is healthy, and customer growth is accelerating. OG&E's long-term earnings growth rate target is 5%-7% annually Dividend hikes will lag profit growth for a while because the payout ratio is higher than OGE Energy wants Note that the steep revenue decline likely this year is not a concern because a surge in gas and power prices, passed through to customers, caused a big jump in the top line in the first quarter of 2021.

This stock is untimely, but has an attractive dividend yield. Total return prospects are below the median for the 18-month span and the 3- to 5-year period.

Paul E. Debbas, CFA *March 11, 2022*

(A) Diluted EPS Excl. nonrecurring gains (losses): '15, (33¢), '17, $1.18; '19, (8¢); '20, ($2 95), '21, $1.32, gain on discont ops '06, 20¢ '19 & '21 EPS don't sum due to rounding Next earnings report due early May (B) Div'ds historically paid in late Jan , Apr , July, & Oct ■ Div'd reinvestment plan avail (C) Incl deferred charges In '21: $6.15/sh (D) In mill , adj for split (E) Rate base: Net original cost Rate allowed on com. eq in OK in '19 9 5%, in AR in '18: 9 5%; earned on avg. com. eq., '21: 12 7% Regulatory Climate Average

Company's Financial Strength	A
Stock's Price Stability	85
Price Growth Persistence	25
Earnings Predictability	90

PORTLAND GENERAL NYSE-POR

RECENT PRICE	P/E RATIO	RELATIVE P/E RATIO	DIV'D YLD
53.17	18.9 (Trailing: 20.8 Median: 18.0)	0.99	3.4%

VALUE LINE

TIMELINESS 3 Raised 9/10/21
SAFETY 2 Raised 10/22/21
TECHNICAL 3 Raised 1/7/22
BETA .90 (1.00 = Market)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
High	22.7	26 0	28 1	33 3	40 3	41.0	45 2	50 1	50 4	58 4	63 1	53 1
Low	17.5	21.3	24 3	27 4	29 0	33 0	35 3	42 4	39.0	44.0	32.0	40 8

18-Month Target Price Range

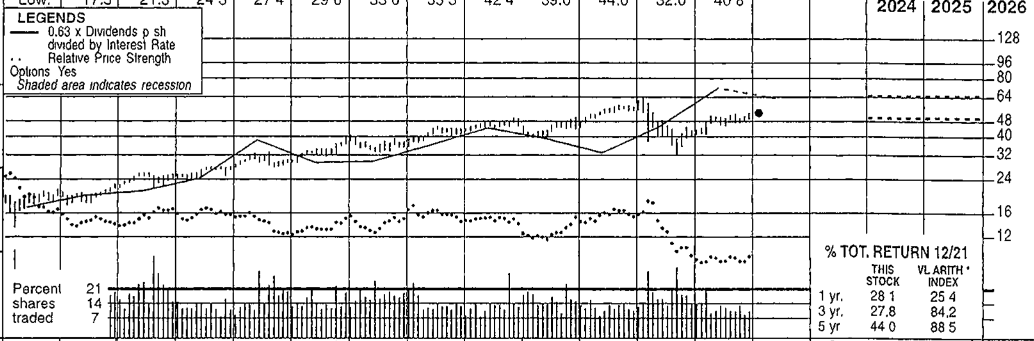
Low-High	Midpoint (% to Mid)
$33-$60	$47 (-15%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(+20%)	9%
Low	50	(-5%)	2%

Institutional Decisions

	1Q2021	2Q2021	3Q2021
to Buy	165	157	142
to Sell	149	142	145
Hld's(000)	82978	81434	82480



% TOT. RETURN 12/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	28 1	25 4
3 yr.	27.8	84.2
5 yr	44 0	88 5

2005F	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
23.14	24 32	27 87	27.89	23.99	23.67	24.06	23.89	23.18	24.29	21.38	21.62	22.54	22.30	23 75	23.96	*26.75*	*27.30*	Revenues per sh	*29.75*
4.75	4 64	5.21	4.71	4.07	4 82	4.96	5.15	4.93	6.08	5.37	5.78	6.16	6.65	6.97	6.80	*7.50*	*7.85*	"Cash Flow" per sh	*9.00*
1.02	1.14	2.33	1 39	1.31	1 66	1.95	1 87	1 77	2 18	2 04	2 16	2 29	2.37	2.39	1.72	*2.75*	*2.90*	Earnings per sh A	*3.25*
- -	.68	.93	.97	1.01	1 04	1.06	1.08	1.10	1 12	1.18	1.26	1.34	1 43	1.52	1.59	1.70	*1.80*	Div'd Decl'd per sh B ■ †	*2.10*
4.08	5 94	7.28	6.12	9.25	5.97	3.98	4.01	8.40	12.87	6.73	6.57	5 77	6.67	6 78	8.76	*8.05*	*7.45*	Cap'l Spending per sh	*6.25*
19.15	19.58	21.05	21.64	20.50	21.14	22.07	22.87	23.30	24.43	25.43	26 35	27.11	28.07	28.99	29.18	*30.20*	*31.25*	Book Value per sh C	*34.75*
62.50	62.50	62.53	62.58	75.21	75.32	75.36	75 56	78 09	78.23	88.79	88.95	89.11	89.27	89 39	89.54	*89.65*	*89.80*	Common Shs Outst'g D	*90.00*
- -	23 4	11.9	16.3	14.4	12.0	12.4	14 0	16.9	15.3	17.7	19.1	20.0	18.4	22.3	26.6	*17.5*		Avg Ann'l P/E Ratio	*17.5*
- -	1.26	63	.98	.96	.76	78	89	95	.81	.89	1.00	1.01	.99	1.19	1.36	*.95*		Relative P/E Ratio	*.95*
- -	2 5%	3.3%	4.3%	5.4%	5.2%	4.4%	4 1%	3.7%	3.3%	3.3%	3.1%	2.9%	3 3%	2.8%	3.5%	3.5%		Avg Ann'l Div'd Yield	*3.7%*

CAPITAL STRUCTURE as of 9/30/21
Total Debt $3301 mill **Due in 5 Yrs** $153 mill
LT Debt $3285 mill. **LT Interest** $128 mill
Incl. $128 mill finance leases
(LT interest earned 2.4x)
Leases, Uncapitalized Annual rentals $8 mill
Pension Assets-12/20 $753 mill
Oblig $1010 mill
Pfd Stock None

Common Stock 89,409,613 shs.
as of 10/25/21

MARKET CAP: $4.8 billion (Mid Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
1813 0	1805.0	1810.0	1900 0	1898 0	1923 0	2009 0	1991 0	2123 0	2145 0	*2400*	*2450*	Revenues ($mill)	*2675*
147 0	141 0	137.0	175.0	172 0	193.0	204 0	212 0	214 0	155 0	*245*	*260*	Net Profit ($mill)	*295*
28 3%	31 4%	23 2%	26 0%	20 7%	20 6%	25 3%	7 4%	11.2%	- -	*11.0%*	*11.0%*	Income Tax Rate	*11.0%*
5 4%	7.1%	14 6%	33 7%	19 8%	16 6%	8 8%	8.0%	7.0%	15 5%	*8.0%*	*7.0%*	AFUDC % to Net Profit	*5.0%*
49 6%	47 1%	51 3%	52 7%	47 8%	48 4%	50 1%	46 5%	51.3%	53 6%	*56.0%*	*55.5%*	Long-Term Debt Ratio	*54.5%*
50 4%	52 9%	48 7%	47 3%	52 2%	51 6%	49.9%	53.5%	48.7%	46 4%	*44.0%*	*44.5%*	Common Equity Ratio	*45.5%*
3298 0	3264.0	3735.0	4037.0	4329.0	4544.0	4842.0	4684.0	5323.0	5628.0	*6125*	*6320*	Total Capital ($mill)	*6850*
4285.0	4392.0	4880.0	5679.0	6012.0	6434.0	6741.0	6887.0	7161.0	7539.0	*7835*	*8060*	Net Plant ($mill)	*8300*
6.2%	5 9%	5.1%	5.8%	5.4%	5 6%	5.5%	5.8%	5 1%	4.0%	*5.0%*	*5.0%*	Return on Total Cap'l	*5.5%*
8.8%	8 2%	7.5%	9.2%	7.6%	8 2%	8 4%	8 5%	8.3%	5.9%	*9.0%*	*9.5%*	Return on Shr. Equity	*9.5%*
8.8%	8.2%	7.5%	9.2%	7.6%	8.2%	8.4%	8 5%	8 3%	5 9%	*9.0%*	*9.5%*	Return on Com Equity E	*9.5%*
4.1%	3.5%	2.9%	4.6%	3.3%	3.5%	3.6%	3.5%	3.1%	6%	*3.5%*	*3.5%*	Retained to Com Eq	*3.5%*
54%	57%	61%	50%	56%	57%	58%	59%	63%	90%	*62%*	*62%*	All Div'ds to Net Prof	*64%*

ELECTRIC OPERATING STATISTICS

	2018	2019	2020
% Change Retail Sales (KWH)	-2 5	+1 2	+ 4
Avg Indust Use (MWH)	16207	17827	18472
Avg Indust. Revs. per KWH (¢)	4.79	4 75	4 99
Capacity at Peak (Mw)	4859	NA	NA
Peak Load, Summer (Mw)	3816	3765	3771
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1 1	+1.1	+1 5
Fixed Charge Cov (%)	266	265	187

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	-1 0%	.5%	*4.0%*
"Cash Flow"	4 0%	4.5%	*5 0%*
Earnings	4 0%	1.5%	*7 0%*
Dividends	4 0%	6.0%	*5.5%*
Book Value	3.0%	3 5%	*3 0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	493	449	525	524	1991
2019	573	460	542	548	2123
2020	573	469	547	556	2145
2021	609	537	642	*612*	*2400*
2022	*625*	*550*	*650*	*625*	*2450*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.72	.51	.59	.55	2.37
2019	.82	.28	.61	68	2.39
2020	.91	.43	d 19	.57	1.72
2021	1 07	.36	.56	*.76*	*2.75*
2022	*1.05*	*.45*	*.60*	*.80*	*2.90*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ † Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.34	.34	.3625	.3625	1.41
2019	3625	3625	385	.385	1.50
2020	.385	385	.385	.4075	1.56
2021	4075	.4075	.43	.43	1.68
2022	.43				

BUSINESS: Portland General Electric Company (PGE) provides electricity to 914,000 customers in 51 cities in a 4,000-square-mile area of Oregon, including Portland and Salem The company is in the process of decommissioning the Trojan nuclear plant, which it closed in 1993 Electric revenue breakdown residential, 49%, commercial, 29%, industrial, 10%; other, 12% Generating sources gas, 33%, coal, 13%, wind 9%, hydro, 5%; purchased, 40%. Fuel costs: 33% of revenues '20 reported depreciation rate. 3.5% Has 2,900 full-time employees Chairman Jack E Davis President and Chief Executive Officer Maria M Pope. Incorporated. Oregon Address 121 S W Salmon Street, Portland, Oregon 97204. Telephone 503-464-8000 Internet: www.portlandgeneral.com.

Portland General Electric is awaiting a rate order. The utility is seeking a tariff increase of $89 million (3.9%). PGE, the Oregon commission's staff, and intervenors have reached a settlement for a 9.5% return on equity and a 50% common-equity ratio, the same as the company had requested The utility wants to place an integrated operations center in the rate base and recover rising costs for vegetation management, wildfire mitigation, and other items. (The integrated operations center was completed in late 2021 at a cost slightly under the budget of $200 million.) A ruling is expected in time for new rates to take effect on May 1st.

After an earnings recovery in 2021, profits will likely take another step forward in 2022. The comparison was easy last year, as a trading loss hurt the bottom line by $1.09 a share in the third quarter of 2020. In 2022, PGE should benefit from a partial year of rate relief. Load growth is another positive factor for the utility. Our estimate of $2.90 a share might even be conservative, given that this is just slightly above the upper end of the company's guidance for 2021 of $2 70-$2.85 a share Management will likely put forth guidance when it issues fourth-quarter results in mid-February.

The utility filed an integrated resource plan. This is for up to 1,000 megawatts of capacity, primarily renewable and hydro Depending upon how much capacity PGE builds, the company might have to issue equity. Otherwise, no equity issuances are expected through mid-decade.

PGE has deferred some expenses for future recovery. As of September 30th, the utility had deferred $148 million for future recovery, mainly for bad-debt expense, system restoration after wildfires, major storms in February of 2021, and excess power costs. How and when these will be recovered are to be determined.

The stock price soared 24% in 2021. Wall Street is comfortable that the trading problem was a one-time event, and the company's improved prospects (such as accelerating load growth) are appealing to investors. The dividend yield is average for a utility. However, total return potential is negative for the next 18 months and subpar for the 3- to 5-year period.

Paul E. Debbas, CFA *January 21, 2022*

(A) Diluted EPS Excl. nonrecurring losses '13, 42¢, '17, 19¢. Next earnings report due mid-Feb. (B) Div'ds paid mid-Jan , Apr., July, and Oct. ■ Div'd reinvestment plan avail † Shareholder investment plan avail. (C) Incl. deferred charges. In '20: $569 mill , $6.35/sh. (D) In mill. (E) Rate base: Net orig cost Rate allowed on com. eq in '19: 9 5%, earned on avg. com eq., '20 6 0%. Regulatory Climate Average (F) '05 per-share data are pro forma, based on shs outstanding when stock began trading in '06

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	50
Earnings Predictability	85

SOUTHERN COMPANY NYSE-SO

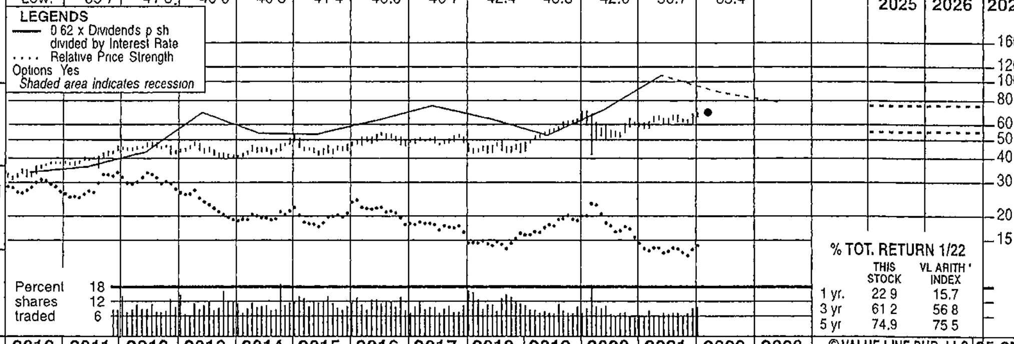
RECENT PRICE **69.49** | P/E RATIO **19.2** (Trailing: 19.6 Median: 16.0) | RELATIVE P/E RATIO **1.08** | DIV'D YLD **3.9%** | **VALUE LINE**

TIMELINESS **4** Lowered 8/13/21
SAFETY **2** Lowered 2/21/14
TECHNICAL **3** Raised 1/28/22
BETA .95 (1.00 = Market)

High.	46 7	48 6	48 7	51 3	53 2	54 6	53.5	49 4	64 3	71.1	68 9	69 8
Low.	35 7	41 8	40 0	40 3	41 4	46.0	46 7	42.4	43.3	42.0	56.7	65.4

LEGENDS
—— 0 62 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options Yes
Shaded area indicates recession

Target Price Range
2025 | 2026 | 2027



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$56-$78	$67 (-5%)

2025-27 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(+10%)	6%
Low	55	(-20%)	-1%

Institutional Decisions

	1Q2021	2Q2021	3Q2021
to Buy	676	743	676
to Sell	649	580	598
Hld's(000)	627954	629680	633336

% TOT. RETURN 1/22

	THIS STOCK	VL ARITH.* INDEX
1 yr.	22 9	15.7
3 yr	61 2	56 8
5 yr	74.9	75 5

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	© VALUE LINE PUB. LLC	25-27
19.24	20.12	22.04	19 21	20 70	20 41	19.06	19 26	20 34	19 18	20 09	22.86	22.73	20 34	19 29	*21.50*	*22.55*	*23.70*	Revenues per sh	*27.50*
4 01	4.22	4.43	4.43	4.51	4 91	5.18	5.27	5.28	5.47	5.69	6.64	6.41	6.33	6.98	*7.20*	*7.40*	*7.75*	"Cash Flow" per sh	*9.00*
2 10	2 28	2.25	2 32	2.36	2.55	2.67	2 70	2 77	2 84	2 83	3 21	3.00	3.17	3 25	*3.50*	*3.60*	*3.80*	Earnings per sh A	*4.50*
1.54	1.60	1.66	1.73	1.80	1.87	1.94	2 01	2.08	2.15	2.22	2.30	2.38	2.46	2.54	2.62	*2.70*	*2.78*	Div'd Decl'd per sh B ■	*3.02*
4.01	4.65	5.10	5.70	4 85	5.23	5.54	6.16	6 58	6.22	7.38	7.37	7 74	7 17	7.04	*7.65*	*6.55*	*6.55*	Cap'l Spending per sh	*6.25*
15.24	16.23	17.08	18.15	19.21	20.32	21.09	21 43	21.98	22 59	25 00	23.98	23 92	26.11	26 48	*26.75*	*27.65*	*28.70*	Book Value per sh C	*32.75*
746.27	763 10	777 19	819.65	843.34	865.13	867.77	887.09	907.78	911.72	990.39	1007.6	1033.8	1053.3	1056 5	*1070.0*	*1070.0*	*1070.0*	Common Shs Outst'g D	*1070.0*
16 2	16.0	16.1	13.5	14 9	15.8	17.0	16 2	16.0	15 8	17 8	15.5	15 1	17 6	17.9	*18.0*	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*15.0*
.87	.85	.97	.90	95	.99	1.08	91	84	.80	.93	78	82	.94	.92	*.95*			Relative P/E Ratio	*.85*
4.5%	4 4%	4.6%	5 5%	5.1%	4.6%	4.3%	4 6%	4 7%	4 8%	4.4%	4 6%	5.3%	4.4%	4.4%	4.2%			Avg Ann'l Div'd Yield	*4.5%*

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		25-27
16537	17087	18467	17489	19896	23031	23495	21419	20375	*23000*	*24150*	*25350*	Revenues ($mill)	*29350*
2415.0	2439.0	2567 0	2647.0	2757 0	3269.0	3096 0	3354 0	3481.0	*3750*	*3840*	*4085*	Net Profit ($mill)	*4870*
35 6%	34 8%	33 8%	33 4%	28 5%	25 2%	21 3%	15 9%	14 3%	*13.5%*	*14.0%*	*14.0%*	Income Tax Rate	*14.0%*
9.4%	11.6%	13 9%	13.2%	11 9%	7 6%	6 8%	6 0%	6.6%	*7.0%*	*6.0%*	*6.0%*	AFUDC % to Net Profit	*4.0%*
49.9%	51 5%	49 5%	52 8%	61 5%	64 5%	62 0%	60 1%	61 5%	*63.5%*	*63.5%*	*63.5%*	Long-Term Debt Ratio	*63.0%*
47 3%	45 8%	47 3%	44 0%	35 7%	35 0%	37 6%	39 5%	38 1%	*36.0%*	*36.5%*	*36.0%*	Common Equity Ratio	*37.0%*
38653	41483	42142	46788	69359	68953	65750	69594	73336	*79250*	*81475*	*84925*	Total Capital ($mill)	*95300*
48390	51208	54868	61114	78446	79872	80797	83080	87634	*91875*	*94825*	*97625*	Net Plant ($mill)	*104100*
7 3%	6.8%	7 1%	6.6%	4.9%	5.9%	5.9%	6.0%	5.9%	*6.0%*	*6.0%*	*6.0%*	Return on Total Cap'l	*6.5%*
12 5%	12 1%	12.1%	12 0%	10.3%	13.3%	12.4%	12.1%	12.3%	*13.0%*	*13.0%*	*13.5%*	Return on Shr. Equity	*14.0%*
12.8%	12.5%	12.5%	12.6%	11.0%	13.4%	12.5%	12.1%	12.4%	*13.0%*	*13.0%*	*13.5%*	Return on Com Equity E	*14.0%*
3 6%	3.2%	3.2%	3 1%	2.5%	3.9%	2.6%	2.8%	2.8%	*3.5%*	*3.5%*	*3.5%*	Retained to Com Eq	*4 5%*
73%	75%	75%	76%	78%	72%	79%	77%	78%	*75%*	*76%*	*73%*	All Div'ds to Net Prof	*67%*

CAPITAL STRUCTURE as of 9/30/21
Total Debt $52836 mill. **Due in 5 Yrs** $13952 mill
LT Debt $48843 mill. **LT Interest** $1682 mill
(LT interest earned. 3 4x)
Leases, Uncapitalized Annual rentals $300 mill.
Pension Assets-12/20 $15367 mill
Oblig $16646 mill.
Pfd Stock $291 mill **Pfd Div'd** $15 mill
Incl 10 mill shs 5 83% cum. pfd. ($25 stated value), 475,115 shs 4 2%-5 44% cum. pfd ($100 par)
Common Stock 1,059,803,931 shs

MARKET CAP: $74 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2018	2019	2020
% Change Retail Sales (KWH)	+3 6	-8 5	-5 3
Avg Indust Use (MWH)	3048	2947	NA
Avg. Indust Revs per KWH (¢)	6 04	6.03	NA
Capacity at Yearend (Mw)	45824	41940	NA
Peak Load, Summer (Mw) F	36429	34209	NA
Annual Load Factor (%)	61.2	60 3	NA
% Change Customers (yr-end)	+1.0	-8 9	+1.3
Fixed Charge Cov (%)	280	281	270

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '25-'27
Revenues	- -	1 0%	*4 0%*
"Cash Flow"	4.0%	4.5%	*4.5%*
Earnings	3 0%	2.5%	*5 5%*
Dividends	3 5%	3.5%	*3.0%*
Book Value	3 5%	3 0%	*3 5%*

Calendar	QUARTERLY REVENUES (mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	5412	5098	5995	4914	21419
2020	5018	4620	5620	5117	20375
2021	5910	5198	6238	*5654*	*23000*
2022	*6200*	*5600*	*6600*	*5750*	*24150*
2023	*6500*	*5900*	*6900*	*6050*	*25350*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	.75	.85	1 25	.32	3 17
2020	.81	.75	1.18	51	3.25
2021	1.09	.73	1.22	*.46*	*3.50*
2022	*1.05*	*.80*	*1.30*	*.45*	*3.60*
2023	*1.10*	*.85*	*1.40*	*.45*	*3.80*

Calendar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.58	.60	.60	.60	2.38
2019	.60	.62	.62	.62	2.46
2020	.62	.64	64	.64	2.54
2021	.64	66	.66	.66	2.62
2022					

BUSINESS: The Southern Company, through its subs., supplies electricity to 4 3 mill. customers in GA, AL, and MS. Also has a competitive generation business Acq'd AGL Resources (renamed Southern Company Gas, 4 3 mill customers in GA, NJ, IL, VA, & TN) 7/16. Sold Gulf Power 1/19 Electric rev. breakdown residential, 37%, commercial, 30%, industrial, 19%; other, 14%. Retail revs by state GA, 56%, AL, 38%; MS, 6%. Generating sources gas, 47%, coal, 20%, nuclear, 15%, other, 9%, purchased, 9%. Fuel costs. 23% of revs. '20 reported depr rates (util.). 2 6%-3 7%. Has 27,700 empls Chairman, Pres and CEO: Thomas A Fanning Inc DE Address: 30 Ivan Allen Jr Blvd, N.W., Atlanta, GA 30308 Tel 404-506-0747. Internet. www southerncompany com.

Southern Company's Georgia Power subsidiary expects to complete Units 3 and 4 of the Vogtle nuclear station in the third quarter of 2022 and the second quarter of 2023, respectively. The project has had significant delays and cost overruns. In the first nine months of 2021, the company took aftertax charges totaling $0 54 a share for the estimated loss on construction, which is not recoverable in rates. We *excluded* these charges from our earnings presentation as nonrecurring. The latest capital cost estimate is $9.5 billion for Georgia Power's 45.7% share of the project. As of September 30th, $1.3 billion remained to be spent. There might well be additional delays and cost overruns, but Wall Street has taken these in stride. In 2021, Southern Company stock posted a total return of 16.3%, not far below the median for this industry

Southern Company has issued equity and sold assets to finance the rising capital costs of its nuclear project. Most notably, it sold its Gulf Power electric utility in Florida a few years ago, and has also sold some gas companies. Most recently, Southern Company sold some leveraged leases. (This will result in a $100 million aftertax gain in the fourth quarter of 2021.) Other asset sales are under consideration. For now, we do not anticipate any equity additions in the next few years, and are not assuming any asset sales.

Earnings should advance this year and next. The company's utilities are benefiting from rate relief and growth in their service areas. Nicor Gas in Illinois will record a full year's effect of a $240 million rate hike, based on a 9.75% return on equity and a 54.5% common-equity ratio, that went into place on December 1st. Atlanta Gas Light received $49 million at the start of 2022. Note that Georgia Power expects to file a rate case on July 1st.

We expect a dividend increase in the second quarter. We think the board will raise the quarterly payout $0 02 a share (3.0%), the same as in recent years.

The dividend yield is somewhat above average for a utility. Dividend growth prospects are subpar, and investors must be able to accept the uncertainties arising from the nuclear construction project. The stock is untimely.

Paul E. Debbas, CFA *February 11, 2022*

(A) Diluted EPS Excl. nonrec gain (losses) '09. (25¢) '13, (83¢); '14, (59¢), '15, (25¢), '16, (28¢), '17 ($2.37), '18, (78¢); '19, $1.30; '20, (17¢), '21, (54¢). Next earnings report due mid-Feb (B) Div'ds paid in early Mar., June, Sept, and Dec. ■ Div'd reinvest plan avail. (C) Incl def'd charges. In '20 $18.91/sh (D) In mill. (E) Rate base AL, MS, fair value, FL, GA, orig. cost Allowed return on common eq. (blended) 12.5%, earned on avg com eq. '20. 12.5%. Regulatory Climate: GA, AL Above Average MS, FL Average. (F) Winter peak in '18.

Company's Financial Strength	A
Stock's Price Stability	90
Price Growth Persistence	35
Earnings Predictability	95

XCEL ENERGY NDQ-XEL

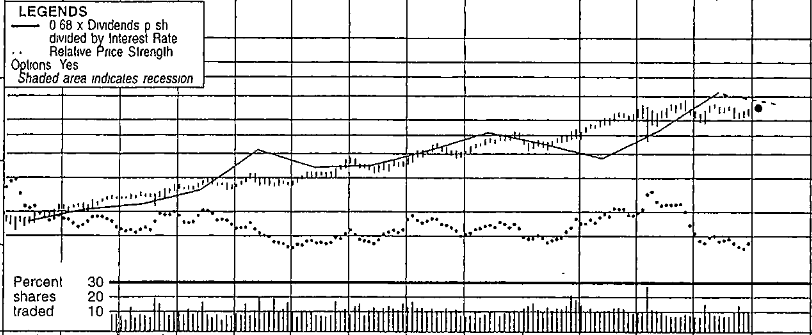
RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD
69.86	23.3	(Trailing: 23.9 / Median: 17.0)	1.22	2.8%

VALUE LINE

TIMELINESS 3 Raised 12/31/21
SAFETY 1 Raised 5/1/15
TECHNICAL 4 Raised 1/14/22
BETA .80 (1 00 = Market)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
High:	24.4	27 8	29.9	31 8	37 6	38.3	45 4	52.2	54.1	66 1	76 4	72.9
Low:	19.8	21 2	25 8	26 8	27.3	31 8	35 2	40 0	41 5	47.7	46 6	57 2

LEGENDS
— 0 68 x Dividends p sh divided by Interest Rate
.. Relative Price Strength
Options Yes
Shaded area indicates recession



18-Month Target Price Range
Low-High Midpoint (% to Mid)
$57-$94 $76 (10%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(+5%)	5%
Low	60	(-15%)	Nil

Institutional Decisions

	1Q2021	2Q2021	3Q2021
to Buy	348	381	355
to Sell	396	344	343
Hld's(000)	405318	412491	411220

Percent shares traded 30 20 10

Target Price Range 2024 | 2025 | 2026
160 120 100 80 60 50 40 30 20 15

% TOT. RETURN 12/21

	THIS STOCK	VL ARITH.* INDEX
1 yr	4.4	25.4
3 yr.	49 0	84.2
5 yr.	92 2	88 5

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
23 86	24 16	23.40	24 69	21.08	21.38	21.90	20.76	21.92	23.11	21.72	21.90	22.46	22.44	21.98	21 45	*24.65*	*25.75*	Revenues per sh	*28.00*
3.28	3.61	3.45	3.50	3.48	3.51	3 79	4.00	4.10	4 28	4.56	5.04	5.47	5 92	6.25	6.61	*7.10*	*7.55*	"Cash Flow" per sh	*9.00*
1.20	1.35	1.35	1.46	1 49	1.56	1 72	1.85	1 91	2 03	2.10	2 21	2.30	2 47	2.64	2.79	*2.95*	*3.10*	Earnings per sh A	*3.75*
85	.88	.91	.94	.97	1.00	1.03	1.07	1.11	1.20	1.28	1.36	1.44	1.52	1 62	1.72	1.83	*1.94*	Div'd Decl'd per sh B ■	*2.30*
3.25	4.00	4.89	4.66	3.91	4.60	4 53	5.27	6.82	6 33	7.26	6 42	6 54	7 70	8.05	9.99	*8.30*	*9.70*	Cap'l Spending per sh	*10.00*
13.37	14.28	14.70	15.35	15.92	16.76	17.44	18.19	19 21	20.20	20.89	21.73	22 56	23.78	25 24	27 12	*28.45*	*29.85*	Book Value per sh C	*34.50*
403 39	407.30	428 78	453.79	457.51	482.33	486 49	487.96	497.97	505.73	507.54	507.22	507.76	514.04	524.54	537.44	*540.00*	*544.00*	Common Shs Outst'g D	*553.00*
15.4	14.8	16.7	13.7	12.7	14.1	14.2	14.8	15.0	15 4	16.5	18 5	20.2	18 9	22.3	23.9	*22.5*		Avg Ann'l P/E Ratio	*18.0*
.82	.80	.89	.82	.85	.90	.89	.94	84	81	.83	97	1.02	1 02	1.19	1.23	*1.20*		Relative P/E Ratio	*1.00*
4 6%	4.4%	4.0%	4.7%	5.1%	4.5%	4.2%	3 9%	3.9%	3.8%	3.7%	3.3%	3 1%	3 3%	2.7%	2.6%	2.8%		Avg Ann'l Div'd Yield	*3.4%*

CAPITAL STRUCTURE as of 9/30/21
Total Debt $23347 mill Due in 5 Yrs $5174 mill
LT Debt $20979 mill LT Interest $780 mill.
Incl $73 mill finance leases
(LT interest earned: 2.9x)

Leases, Uncapitalized Annual rentals $273 mill
Pension Assets-12/20 $3599 mill
Oblig $3964 mill

Pfd Stock None

Common Stock 538,675,570 shs
as of 10/26/21
MARKET CAP: $38 billion (Large Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
10655	10128	10915	11686	11024	11107	11404	11537	11529	11526	*13300*	*14000*	Revenues ($mill)	*15500*
841.4	905.2	948 2	1021.3	1063 6	1123.4	1171.0	1261 0	1372 0	1473 0	*1600*	*1690*	Net Profit ($mill)	*2050*
35 8%	33 2%	33.8%	33 9%	35.8%	34 1%	30 7%	12.6%	8.5%	- -	*NMF*	*NMF*	Income Tax Rate	*NMF*
9 4%	10.8%	13 4%	12 5%	7.7%	7.8%	9.4%	12 4%	8 3%	10.7%	*7.0%*	*7.0%*	AFUDC % to Net Profit	*7.0%*
51.1%	53.3%	53.3%	53 0%	54.1%	56.3%	55.9%	56 4%	56.8%	57.4%	*58.0%*	*57.5%*	Long-Term Debt Ratio	*58.0%*
48.9%	46.7%	46.7%	47.0%	45 9%	43.7%	44 1%	43.6%	43.2%	42.6%	*42.0%*	*42.5%*	Common Equity Ratio	*42.0%*
17331	19018	20477	21714	23092	25216	25975	28025	30646	34220	*36425*	*38125*	Total Capital ($mill)	*45100*
22353	23809	26122	28757	31206	32842	34329	36944	39483	42950	*45175*	*48050*	Net Plant ($mill)	*55500*
6 5%	6.1%	6.0%	6.0%	5.8%	5.7%	5 8%	5 7%	5.6%	5.4%	*5.5%*	*5.5%*	Return on Total Cap'l	*5.5%*
9 9%	10.2%	9.9%	10.0%	10 0%	10.2%	10.2%	10.3%	10 4%	10 1%	*10.5%*	*10.5%*	Return on Shr. Equity	*11.0%*
9 9%	10.2%	9 9%	10.0%	10.0%	10.2%	10.2%	10.3%	10.4%	10.1%	*10.5%*	*10.5%*	Return on Com Equity E	*11.0%*
4 3%	4.7%	4 5%	4.5%	4.3%	4.0%	3.9%	4.3%	4.4%	4.2%	*4.0%*	*4.0%*	Retained to Com Eq	*4.0%*
56%	54%	54%	55%	57%	61%	62%	58%	58%	58%	*62%*	*62%*	All Div'ds to Net Prof	*62%*

ELECTRIC OPERATING STATISTICS

	2018	2019	2020
% Change Retail Sales (KWH)	+3 2	-1.2	-2 3
Large C & I Use (MWH)	23004	NA	NA
Large C & I Revs per KWH (¢)	5 91	5.96	5.78
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	20293	20146	19665
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.1	+1.0	NA
Fixed Charge Cov. (%)	281	272	252

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	- -	-.5%	*4.0%*
"Cash Flow"	6.0%	7 5%	*6 0%*
Earnings	6 0%	5.5%	*6 0%*
Dividends	5 5%	6.0%	*6 0%*
Book Value	4.5%	5 0%	*5.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	2951	2658	3048	2880	11537
2019	3141	2577	3013	2798	11529
2020	2811	2586	3182	2947	11526
2021	3541	3068	3467	*3224*	*13300*
2022	*3650*	*3150*	*3700*	*3500*	*14000*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.57	.52	.96	42	2.47
2019	.61	.46	1.01	.56	2.64
2020	.56	.54	1 14	54	2.79
2021	.67	.58	1.13	*.57*	*2.95*
2022	*.70*	*.60*	*1.20*	*.60*	*3.10*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.36	.38	.38	.38	1 50
2019	.38	405	.405	.405	1.60
2020	.405	43	.43	.43	1.70
2021	.43	.4575	.4575	.4575	1.80
2022	.4575				

BUSINESS: Xcel Energy Inc. is the parent of Northern States Power, which supplies electricity to Minnesota, Wisconsin, North Dakota, South Dakota & Michigan & gas to Minnesota, Wisconsin, North Dakota & Michigan, P S. of Colorado, which supplies electricity & gas to Colorado; & Southwestern Public Service, which supplies electricity to Texas & New Mexico. Customers. 3.7 mill. elec., 2.1 mill. gas Elec rev breakdown res'l, 31%; sm comm'l & ind'l, 36%; lg comm'l & ind'l, 18%; other, 15% Generating sources not avail Fuel costs. 36% of revs '20 reported deprec rate: 3 4% Has 11,400 employees Chairman. Ben Fowke President & CEO. Bob Frenzel Inc MN. Address 414 Nicollet Mall, Minneapolis, MN 55401 Tel 612-330-5500 Internet www xcelenergy.com

Xcel Energy's utility in Minnesota filed a general rate case. Northern States Power is seeking electric rate increases of $396 million in 2022, $150 million in 2023, and $131 million in 2024, based on a 10.2% return on equity and a 52.5% common-equity ratio Interim relief of $247 million took effect at the start of 2022. NSP filed for a $36 million gas hike, based on a 10 5% ROE and a 52.5% common-equity ratio. A $25 million interim increase took effect at the start of 2022. **Some intervenors in Minnesota are proposing that some gas costs should be disallowed.** In February of 2021, some of the company's utilities experienced a spike in gas costs stemming from a cold spell in the Gulf Coast region This even affected NSP in Minnesota Utilities have been allowed to recover these expenses in other states, but intervenor groups in Minnesota contend that some of these be disallowed as imprudent. The largest proposed disallowance is $179 million pretax. Our 2022 earnings estimate of $3 10 a share is at the low end of Xcel's targeted range of $3.10-$3.20, and assumes no disallowance. However, if one occurs, we will *include* this in our earnings presentation. A decision from the Minnesota commission is expected this summer. Note that in Wisconsin, the regulators approved electric and gas hikes totaling $45 million in 2022 and $21 million in 2023

Other rate cases are pending. Public Service of Colorado reached a settlement calling for an electric increase of $299 million (including $122 million already being recovered through rate riders), based on a 9.3% ROE and a 55.7% common-equity ratio. In Texas, Southwestern Public Service is seeking a hike of $143 million, based on a 10.35% ROE and a 54 6% common-equity ratio. The utility reached a settlement for a $62 million increase in New Mexico, based on a 9.35% ROE and a 54.7% common-equity ratio Orders are expected this quarter.

Although the price of this top-quality stock rose just slightly in 2021, the valuation is still high. The dividend yield is below average, as is total return potential to 2024-2026. It appears as if the risk of a disallowance of gas costs isn't weighing much on the quotation

Paul E. Debbas, CFA *January 21, 2022*

(A) Diluted EPS. Excl. nonrecurring gain (losses): '10, 5¢. '15, (16¢), '17, (5¢), gains (loss) on discontinued ops.: '05, 3¢; '06 1¢, '09. (1¢); '10, 1¢. '20 EPS don't sum due to rounding Next earnings report due late Jan.
(B) Div'ds historically paid mid-Jan , Apr., July, and Oct ■ Div'd reinvestment plan available.
(C) Incl. intangibles. In '20: $2373 mill, $4 42/sh. (D) In mill (E) Rate base Varies. Rate allowed on com. eq. (blended). 9 6%, earned on avg com eq , '20: 10.6% Regulatory Climate Average.

Company's Financial Strength	A+
Stock's Price Stability	95
Price Growth Persistence	65
Earnings Predictability	100

Oncor Electric Delivery Company LLC
Summary of Risk Premium Models for the
Proxy Group of Fourteen Electric Companies

		Proxy Group of Fourteen Electric Companies
Predictive Risk Premium Model (PRPM) (1)		10.77 %
Risk Premium Using an Adjusted Total Market Approach (2)		10.90
	Average	10.84 %

Notes:
(1) From page 2 of this Exhibit.
(2) From page 3 of this Exhibit.

Oncor Electric Delivery Company LLC
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Proxy Group of Fourteen Electric Companies	LT Average Predicted Variance	Spot Predicted Variance	Recommended Variance (2)	GARCH Coefficient	Predicted Risk Premium (3)	Risk-Free Rate (4)	Indicated ROE (5)
Alliant Energy Corporation	0.27%	0.36%	0.32%	2.68	10.70%	2.89%	13.59%
Ameren Corporation	0.23%	0.29%	0.26%	2.02	6.52%	2.89%	9.41%
American Electric Power Company, Inc.	0.29%	0.31%	0.30%	2.36	8.73%	2.89%	11.62%
Duke Energy Corporation	0.31%	0.28%	0.29%	1.85	6.74%	2.89%	9.63%
Edison International	0.43%	0.50%	0.47%	1.49	8.70%	2.89%	11.59%
Entergy Corporation	0.40%	0.49%	0.45%	2.21	12.56%	2.89%	NMF
Evergy, Inc.	0.41%	0.57%	0.49%	0.82	4.90%	2.89%	7.79%
Eversource Energy	0.31%	0.37%	0.34%	1.62	6.75%	2.89%	9.64%
IDACORP, Inc.	0.29%	0.28%	0.28%	2.21	7.80%	2.89%	10.69%
NorthWestern Corporation	0.33%	0.20%	0.27%	2.26	7.51%	2.89%	10.40%
OGE Energy Corporation	0.31%	0.32%	0.31%	2.20	8.65%	2.89%	11.54%
Portland General Electric Company	0.28%	0.29%	0.29%	2.10	7.43%	2.89%	10.32%
The Southern Company	1.27%	0.35%	0.81%	0.98	9.97%	2.89%	12.86%
Xcel Energy Inc.	0.28%	0.24%	0.26%	2.81	9.03%	2.89%	11.92%
						Average	10.85%
						Median	10.69%
						Average of Mean and Median	10.77%

Notes:

(1) The Predictive Risk Premium Model uses historical data to generate a predicted variance and a GARCH coefficient. The historical data used are the equity risk premiums for the first available trading month as reported by Bloomberg Professional Service.
(2) Average of Column [1] and Column [2].
(3) $(1+(\text{Column [3]} * \text{Column [4]})^{12}) - 1$.
(4) From note 2 on page 2 of Exhibit DWD-5.
(5) Column [5] + Column [6].

Oncor Electric Delivery Company LLC
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Fourteen Electric Companies	
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	3.95	%
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A2 Rated Public Utility Bonds	0.41	(2)
3.	Adjusted Prospective Yield on A2 Rated Public Utility Bonds	4.36	%
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.17	(3)
5.	Adjusted Prospective Bond Yield	4.53	%
6.	Equity Risk Premium (4)	6.37	
7.	Risk Premium Derived Common Equity Cost Rate	10.90	%

Notes:
(1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 10-11 of this Exhibit).
(2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.41% from page 4 of this Exhibit.
(3) Adjustment to reflect the Baa1 Moody's LT issuer rating of the Utility Proxy Group as shown on page 5 of this Exhibit. The 0.17% upward adjustment is derived by taking 2/3 of the spread between A2 and Baa2 Public Utility Bonds (2/3 * 0.25% = 0.17%) as derived from page 4 of this Exhibit.
(4) From page 7 of this Exhibit.

Oncor Electric Delivery Company LLC
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields

	[1]	[2]	[3]
	Aaa Rated Corporate Bond	A2 Rated Public Utility Bond	Baa2 Rated Public Utility Bond
Feb-2022	3.25 %	3.68 %	3.95 %
Jan-2022	2.93	3.33	3.57
Dec-2021	2.65	3.04	3.28
Average	2.94 %	3.35 %	3.60 %

Selected Bond Spreads

A2 Rated Public Utility Bonds Over Aaa Rated Corporate Bonds: 0.41 % (1)

Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility Bonds: 0.25 % (2)

Notes:
(1) Column [2] - Column [1].
(2) Column [3] - Column [2].

Source of Information:
Bloomberg Professional Service

Oncor Electric Delivery Company LLC
Comparison of Long-Term Issuer Ratings for
Proxy Group of Fourteen Electric Companies

	Moody's Long-Term Issuer Rating March 2022		Standard & Poor's Long-Term Issuer Rating March 2022	
Proxy Group of Fourteen Electric Companies	Long-Term Issuer Rating (1)	Numerical Weighting (2)	Long-Term Issuer Rating (1)	Numerical Weighting (2)
Alliant Energy Corporation	A3/Baa1	7.5	A/A-	6.5
Ameren Corporation	A3/Baa1	7.5	BBB+	8.0
American Electric Power Company, Inc.	Baa1	8.0	A-	7.0
Duke Energy Corporation	A3	7.0	BBB+	8.0
Edison International	Baa2	9.0	BBB	9.0
Entergy Corporation	Baa2	9.0	BBB+	8.0
Evergy, Inc.	Baa1	8.0	A-	7.0
Eversource Energy	A3	7.0	A-	7.0
IDACORP, Inc.	A3	7.0	BBB	9.0
NorthWestern Corporation	Baa2	9.0	BBB	9.0
OGE Energy Corporation	A3	7.0	A-	7.0
Portland General Electric Company	A3	7.0	BBB+	8.0
The Southern Company	A3	7.0	BBB+	8.0
Xcel Energy Inc.	A3	7.0	A-	7.0
Average	Baa1	7.6	BBB+	7.8

Notes:

(1) Ratings are that of the average of each company's utility operating subsidiaries.
(2) From page 6 of this Exhibit.

Source Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Numerical Assignment for Moody's and Standard & Poor's Bond Ratings

Moody's Bond Rating	Numerical Bond Weighting	Standard & Poor's Bond Rating
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-
B1	14	B+
B2	15	B
B3	16	B-

Oncor Electric Delivery Company LLC
Judgment of Equity Risk Premium for
Proxy Group of Fourteen Electric Companies

Line No.		Proxy Group of Fourteen Electric Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	8.14 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	5.44
3.	Predicted Equity Risk Premium Based on Regression Analysis of 1,192 Fully-Litigated Electric Utility Rate Cases (3)	5.52
4.	Average equity risk premium	6.37 %

Notes: (1) From page 8 of this Exhibit.
(2) From page 12 of this Exhibit.
(3) From page 13 of this Exhibit.

Oncor Electric Delivery Company LLC
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Fourteen Electric Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Fourteen Electric Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.92 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.23
3.	Ibbotson Equity Risk Premium based on PRPM (3)	8.07
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	7.44
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	12.19
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	10.65
7.	Conclusion of Equity Risk Premium	8.75 %
8	Adjusted Beta (7)	0.93
9.	Forecasted Equity Risk Premium	8.14 %

Notes provided on page 9 of this Exhibit.

Oncor Electric Delivery Company LLC
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Fourteen Electric Companies

Notes:

(1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2021 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1926-2020.

(2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa rated corporate bond yields from 1928-2020 referenced in Note 1 above.

(3) The Predictive Risk Premium Model (PRPM) is discussed in the accompanying direct testimony. The Ibbotson equity risk premium based on the PRPM is derived by applying the PRPM to the monthly risk premiums between Ibbotson large company common stock monthly returns and average Aaa and Aa corporate monthly bond yields, from January 1928 through February 2022.

(4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 3.95% (from page 3 of this Exhibit) from the projected 3-5 year total annual market return of 11.39% (described fully in note 1 on page 2 of Exhibit DWD-5).

(5) Using data from Value Line for the S&P 500, an expected total return of 16.14% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.95% results in an expected equity risk premium of 12.19%.

(6) Using data from Bloomberg Professional Service for the S&P 500, an expected total return of 14.60% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.95% results in an expected equity risk premium of 10.65%.

(7) Average of mean and median beta from page 1 of Exhibit DWD-5.

Sources of Information:

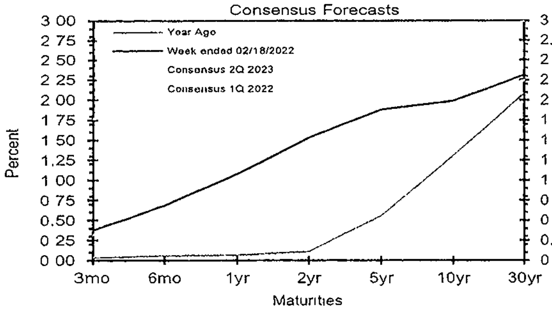
Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, March 1, 2022 and December 1, 2021
Bloomberg Professional Service

Consensus Forecasts of U.S. Interest Rates and Key Assumptions

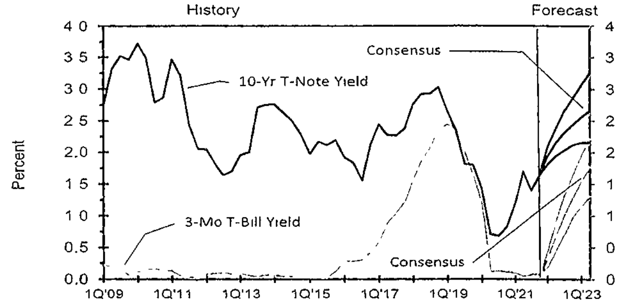
	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			*Latest Qtr*	1Q	2Q	3Q	4Q	1Q	2Q
Interest Rates	Feb 18	Feb 11	Feb 4	Jan 28	Jan	Dec	Nov	4Q 2021	2022	2022	2022	2022	2023	2023
Federal Funds Rate	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	**0.2**	**0.6**	**1.0**	**1.3**	**1.6**	**1.8**
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	**3.4**	**3.7**	**4.1**	**4.3**	**4.6**	**4.8**
SOFR	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.05	**0.2**	**0.5**	**0.9**	**1.2**	**1.4**	**1.7**
Commercial Paper, 1-mo.	0.08	0.08	0.08	0.07	0.07	0.06	0.05	0.06	**0.2**	**0.6**	**0.9**	**1.2**	**1.5**	**1.7**
Treasury bill, 3-mo.	0.38	0.31	0.21	0.19	0.06	0.05	0.05	0.05	**0.3**	**0.7**	**1.0**	**1.3**	**1.5**	**1.8**
Treasury bill, 6-mo.	0.69	0.64	0.49	0.41	0.15	0.07	0.06	0.09	**0.5**	**0.8**	**1.1**	**1.4**	**1.7**	**1.9**
Treasury bill, 1 yr.	1.08	0.98	0.80	0.69	0.30	0.18	0.11	0.20	**0.8**	**1.1**	**1.4**	**1.6**	**1.8**	**2.0**
Treasury note, 2 yr.	1.53	1.42	1.20	1.09	0.68	0.51	0.39	0.53	**1.3**	**1.6**	**1.8**	**2.0**	**2.1**	**2.2**
Treasury note, 5 yr.	1.88	1.84	1.66	1.60	1.23	1.20	1.11	1.18	**1.7**	**2.0**	**2.1**	**2.3**	**2.4**	**2.5**
Treasury note, 10 yr.	1.99	1.95	1.83	1.79	1.47	1.56	1.58	1.54	**1.9**	**2.1**	**2.3**	**2.4**	**2.6**	**2.7**
Treasury note, 30 yr.	2.31	2.25	2.14	2.11	1.85	1.94	2.06	1.95	**2.2**	**2.5**	**2.6**	**2.7**	**2.9**	**3.0**
Corporate Aaa bond	3.43	3.31	3.19	3.14	2.79	2.79	2.85	2.81	**3.2**	**3.4**	**3.7**	**3.9**	**4.0**	**4.1**
Corporate Baa bond	4.00	3.85	3.70	3.64	3.26	3.25	3.31	3.27	**3.9**	**4.2**	**4.4**	**4.6**	**4.8**	**4.9**
State & Local bonds	3.08	2.97	2.92	2.85	2.57	2.57	2.59	2.58	**2.6**	**2.9**	**3.0**	**3.2**	**3.3**	**3.4**
Home mortgage rate	3.92	3.69	3.55	3.55	3.10	3.07	3.07	3.08	**3.7**	**3.9**	**4.1**	**4.2**	**4.4**	**4.5**
	History								Consensus Forecasts-Quarterly					
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
Key Assumptions	2020	2020	2020	2020	2021	2021	2021	2021	2022	2022	2022	2022	2023	2023
Fed's AFE $ Index	111.3	112.4	107.2	105.1	103.4	102.9	105.0	107.0	**107.8**	**108.0**	**108.1**	**107.8**	**107.5**	**107.2**
Real GDP	-5.1	-31.2	33.8	4.5	6.3	6.7	2.3	7.0	**1.9**	**3.9**	**3.1**	**2.6**	**2.4**	**2.3**
GDP Price Index	1.6	-1.5	3.6	2.2	4.3	6.1	6.0	7.1	**4.8**	**3.8**	**3.1**	**2.8**	**2.6**	**2.5**
Consumer Price Index	1.3	-3.4	4.8	2.2	4.1	8.2	6.7	7.9	**5.8**	**3.9**	**3.1**	**2.7**	**2.5**	**2.4**
PCE Price Index	1.3	-1.6	3.7	1.5	3.8	6.5	5.3	6.3	**5.1**	**3.5**	**2.8**	**2.4**	**2.3**	**2.3**

Forecasts for interest rates and the Federal Reserve's Advanced Foreign Economies Index represent averages for the quarter Forecasts for Real GDP, GDP Price Index, CPI and PCE Price Index are seasonally-adjusted annual rates of change (saar) Individual panel members' forecasts are on pages 4 through 9. Historical data Treasury rates from the Federal Reserve Board's H.15, AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity, State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity, Mortgage rates from Freddie Mac, 30-year, fixed, SOFR from the New York Fed All interest rate data are sourced from Haver Analytics. Historical data for Fed's Advanced Foreign Economies Index are from FRSR H 10 Historical data for Real GDP, GDP Price Index and PCE Price Index are from the Bureau of Economic Analysis (BEA) Consumer Price Index history is from the Department of Labor's Bureau of Labor Statistics (BLS).

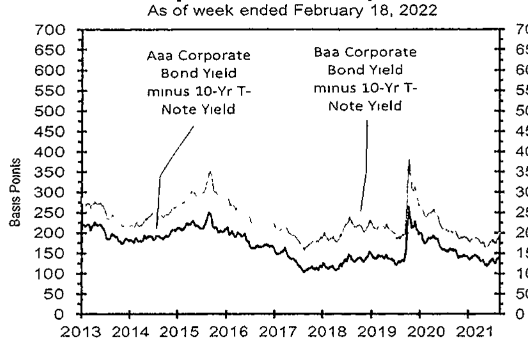
U.S. Treasury Yield Curve
Week ended February 18, 2022 & Year Ago vs 1Q 2022 & 2Q 2023 Consensus Forecasts



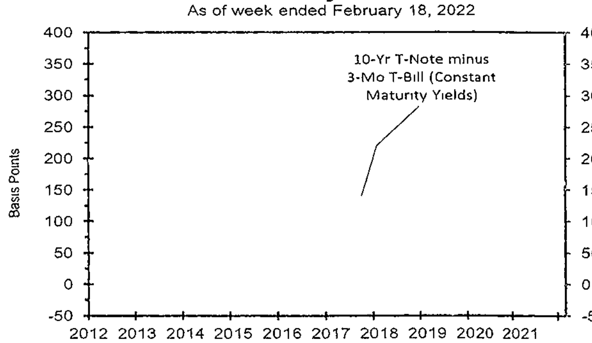
US 3-Mo T-Bills & 10-Yr T-Note Yield
(Quarterly Average)



Corporate Bond Spreads
As of week ended February 18, 2022



U.S. Treasury Yield Curve
As of week ended February 18, 2022



Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2023 through 2027 and averages for the five-year periods 2023-2027 and 2028-2032. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

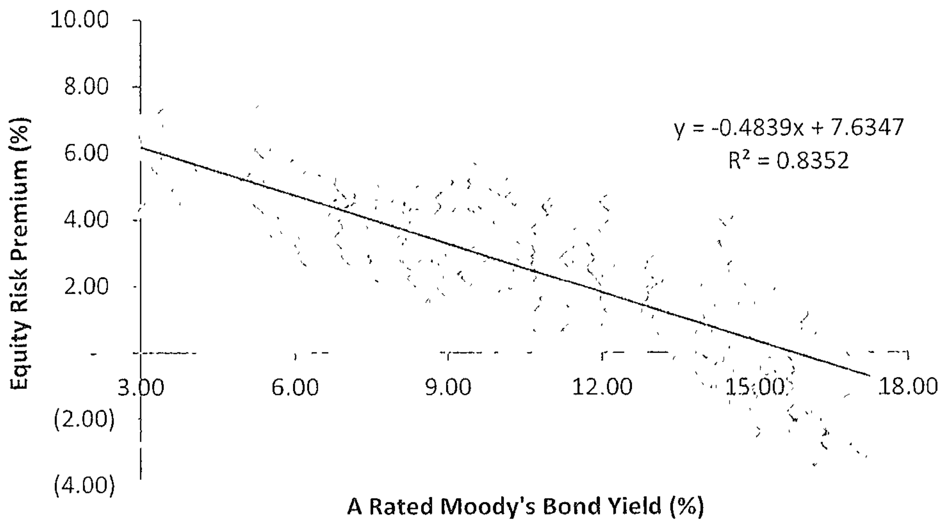
		Average For The Year					Five-Year Averages	
		2023	2024	2025	2026	2027	2023-2027	2028-2032
1. Federal Funds Rate	CONSENSUS	**0.8**	**1.6**	**2.0**	**2.2**	**2.3**	**1.8**	**2.2**
	Top 10 Average	1.2	2.2	2.7	2.7	2.8	2.3	2.9
	Bottom 10 Average	0.4	1.0	1.4	1.7	1.8	1.2	1.5
2. Prime Rate	CONSENSUS	**4.0**	**4.7**	**5.1**	**5.3**	**5.4**	**4.9**	**5.3**
	Top 10 Average	4.3	5.3	5.8	5.8	5.9	5.4	6.0
	Bottom 10 Average	3.6	4.1	4.5	4.9	5.0	4.4	4.6
3. LIBOR, 3-Mo	CONSENSUS	**1.0**	**1.7**	**2.2**	**2.4**	**2.5**	**1.9**	**2.4**
	Top 10 Average	1.3	2.1	2.7	2.9	3.0	2.4	3.1
	Bottom 10 Average	0.7	1.2	1.6	1.9	2.0	1.5	1.8
4. Commercial Paper, 1-Mo	CONSENSUS	**0.9**	**1.6**	**2.1**	**2.3**	**2.4**	**1.9**	**2.4**
	Top 10 Average	1.2	2.0	2.6	2.8	2.9	2.3	2.9
	Bottom 10 Average	0.6	1.2	1.6	1.9	2.0	1.5	1.8
5. Treasury Bill Yield, 3-Mo	CONSENSUS	**0.8**	**1.4**	**1.8**	**2.0**	**2.3**	**1.7**	**2.2**
	Top 10 Average	1.2	1.9	2.5	2.6	2.8	2.2	2.9
	Bottom 10 Average	0.4	0.8	1.2	1.5	1.8	1.1	1.6
6. Treasury Bill Yield, 6-Mo	CONSENSUS	**0.8**	**1.4**	**1.9**	**2.1**	**2.4**	**1.7**	**2.3**
	Top 10 Average	1.2	2.0	2.6	2.7	2.9	2.3	3.0
	Bottom 10 Average	0.4	0.9	1.2	1.6	1.9	1.2	1.7
7. Treasury Bill Yield, 1-Yr	CONSENSUS	**1.0**	**1.6**	**2.1**	**2.4**	**2.5**	**1.9**	**2.4**
	Top 10 Average	1.4	2.1	2.7	2.8	3.0	2.4	3.1
	Bottom 10 Average	0.6	1.2	1.5	1.9	2.0	1.4	1.8
8. Treasury Note Yield, 2-Yr	CONSENSUS	**1.3**	**1.9**	**2.4**	**2.6**	**2.6**	**2.2**	**2.6**
	Top 10 Average	1.7	2.5	3.0	3.1	3.2	2.7	3.4
	Bottom 10 Average	0.8	1.4	1.8	2.0	2.1	1.6	1.9
9. Treasury Note Yield, 5-Yr	CONSENSUS	**1.9**	**2.4**	**2.8**	**2.9**	**2.9**	**2.6**	**3.0**
	Top 10 Average	2.3	3.0	3.4	3.5	3.6	3.1	3.8
	Bottom 10 Average	1.5	1.9	2.1	2.3	2.3	2.0	2.2
10. Treasury Note Yield, 10-Yr	CONSENSUS	**2.4**	**2.8**	**3.1**	**3.2**	**3.2**	**2.9**	**3.3**
	Top 10 Average	2.8	3.3	3.7	3.8	3.9	3.5	4.2
	Bottom 10 Average	2.0	2.3	2.4	2.5	2.5	2.3	2.4
11. Treasury Bond Yield, 30-Yr	CONSENSUS	**2.9**	**3.3**	**3.6**	**3.7**	**3.7**	**3.4**	**3.8**
	Top 10 Average	3.4	3.9	4.3	4.4	4.4	4.1	4.6
	Bottom 10 Average	2.4	2.8	2.9	3.0	3.0	2.8	3.0
12. Corporate Aaa Bond Yield	CONSENSUS	**3.7**	**4.2**	**4.5**	**4.6**	**4.8**	**4.4**	**4.9**
	Top 10 Average	4.3	4.7	5.1	5.2	5.4	4.9	5.6
	Bottom 10 Average	3.2	3.7	3.9	4.1	4.2	3.8	4.2
13. Corporate Baa Bond Yield	CONSENSUS	**4.6**	**5.0**	**5.3**	**5.5**	**5.6**	**5.2**	**5.7**
	Top 10 Average	5.1	5.5	5.9	6.1	6.2	5.7	6.5
	Bottom 10 Average	4.0	4.5	4.8	4.9	5.0	4.7	5.0
14. State & Local Bonds Yield	CONSENSUS	**3.2**	**3.7**	**3.9**	**4.1**	**4.2**	**3.8**	**4.3**
	Top 10 Average	3.8	4.3	4.5	4.7	4.8	4.4	5.0
	Bottom 10 Average	2.7	3.2	3.4	3.5	3.6	3.3	3.6
15. Home Mortgage Rate	CONSENSUS	**4.0**	**4.4**	**4.7**	**4.8**	**4.8**	**4.5**	**4.9**
	Top 10 Average	4.5	5.0	5.3	5.4	5.4	5.1	5.7
	Bottom 10 Average	3.6	3.9	4.1	4.1	4.2	4.0	4.1
A. Fed's AFE Nominal $ Index	CONSENSUS	**106.2**	**106.0**	**106.1**	**106.2**	**106.4**	**106.2**	**106.5**
	Top 10 Average	108.1	108.4	108.9	109.0	109.2	108.7	110.1
	Bottom 10 Average	104.4	104.0	103.7	103.7	103.9	103.9	103.1
		Year-Over-Year, % Change					**Five-Year Averages**	
		2023	**2024**	**2025**	**2026**	**2027**	**2023-2027**	**2028-2032**
B. Real GDP	CONSENSUS	**2.6**	**2.2**	**2.1**	**2.0**	**2.0**	**2.2**	**2.0**
	Top 10 Average	3.1	2.6	2.5	2.4	2.3	2.6	2.4
	Bottom 10 Average	2.2	1.7	1.7	1.7	1.7	1.8	1.7
C. GDP Chained Price Index	CONSENSUS	**2.5**	**2.2**	**2.2**	**2.1**	**2.1**	**2.2**	**2.1**
	Top 10 Average	3.0	2.7	2.5	2.4	2.4	2.6	2.4
	Bottom 10 Average	2.0	1.9	1.9	1.9	1.9	1.9	1.8
D. Consumer Price Index	CONSENSUS	**2.6**	**2.3**	**2.3**	**2.2**	**2.2**	**2.3**	**2.2**
	Top 10 Average	3.2	2.8	2.6	2.5	2.5	2.7	2.5
	Bottom 10 Average	2.1	2.0	2.0	2.0	2.0	2.0	1.9
E. PCE Price Index	CONSENSUS	**2.5**	**2.2**	**2.1**	**2.1**	**2.1**	**2.2**	**2.1**
	Top 10 Average	3.0	2.6	2.4	2.4	2.3	2.6	2.4
	Bottom 10 Average	2.0	1.9	1.9	1.9	1.9	1.9	1.9

Oncor Electric Delivery Company LLC
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

Line No.		Implied Equity Risk Premium
	Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):	
1.	Historical Equity Risk Premium	4.16 %
2.	Regression of Historical Equity Risk Premium (2)	6.04
3.	Forecasted Equity Risk Premium Based on PRPM (3)	5.27
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	6.33
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	5.42
6.	Average Equity Risk Premium (6)	5.44 %

Notes:
(1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2020. Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.
(2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A2 rated public utility bond yields from 1928 - 2020 referenced in note 1 above.
(3) The Predictive Risk Premium Model (PRPM) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A2 rated public utility bonds from January 1928 - February 2022.
(4) Using data from Value Line for the S&P Utilities Index, an expected total return of 10.69% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the expected A2 rated public utility bond yield of 4.36% results in an expected equity risk premium of 6.33%. (10.69% - 4.36 = 6.33%)
(5) Using data from the Bloomberg Professional Service for the S&P Utilities Index, an expected total return of 9.78% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the expected A2 rated public utility bond yield of 4.36% results in an expected equity risk premium of 5.42%. (9.78% - 4.36 = 5.42%)
(6) Average of lines 1 through 5.

Oncor Electric Delivery Company LLC
Prediction of Equity Risk Premiums Relative to Moody's A2 Rated Utility Bond Yields



Constant	Slope	Prospective A2 Rated Utility Bond (1)	Prospective Equity Risk Premium
7.6347 %	-0.4839	4.36 %	5.52 %

Notes:

(1) From line 3 of page 3 of this Exhibit.

Source of Information: Regulatory Research Associates

Oncor Electric Delivery Company LLC
Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Fourteen Electric Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost
Alliant Energy Corporation	0.85	0.91	0.88	9.84 %	2.89 %	11.55 %	11.84 %	11.69 %
Ameren Corporation	0.80	0.88	0.84	9.84	2.89	11.15	11.55	11.35
American Electric Power Company, Inc.	0.75	0.90	0.82	9.84	2.89	10.96	11.40	11.18
Duke Energy Corporation	0.85	0.82	0.83	9.84	2.89	11.05	11.47	11.26
Edison International	0.95	1.05	1.00	9.84	2.89	12.73	12.73	12.73
Entergy Corporation	0.95	1.10	1.03	9.84	2.89	13.02	12.95	12.99
Evergy, Inc.	0.95	0.99	0 97	9.84	2.89	12.43	12.51	12.47
Eversource Energy	0.90	0.98	0.94	9.84	2.89	12.14	12.28	12 21
IDACORP, Inc.	0.80	0.92	0.86	9.84	2.89	11.35	11.69	11.52
NorthWestern Corporation	0.95	1.16	1.05	9.84	2.89	13.22	13.10	13.16
OGE Energy Corporation	1.05	1.20	1.12	9.84	2.89	13.91	13.61	13.76
Portland General Electric Company	0.90	0.93	0.92	9.84	2.89	11.94	12.14	12.04
The Southern Company	0.95	1.04	0.99	9.84	2.89	12.63	12.65	12.64
Xcel Energy Inc.	0.80	0.84	0.82	9.84	2.89	10.96	11.40	11.18
Mean			0.93			12.07 %	12.24 %	12.16 %
Median			0.93			12.04 %	12.21 %	12.13 %
Average of Mean and Median			0.93			12.06 %	12.23 %	12.15 %

Notes on page 2 of this Exhibit

Oncor Electric Delivery Company LLC
Notes to Accompany the Application of the CAPM and ECAPM

Notes.

(1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2020)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2020:	12.20	%
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.05	
MRP based on Ibbotson Historical Data:	7.15	%

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2020)	9.38	%

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - February 2022)	9.03	%

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending March 18, 2022)

Total projected return on the market 3-5 years hence*.	11.39	%
Projected Risk-Free Rate (see note 2):	2.89	
MRP based on Value Line Summary & Index:	8.50	%

*Forecasted 3-5 year capital appreciation plus expected dividend yield

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	16.14	%
Projected Risk-Free Rate (see note 2):	2.89	
MRP based on Value Line data	13.25	%

Measure 6. Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	14.60	%
Projected Risk-Free Rate (see note 2):	2.89	
MRP based on Bloomberg data	11.71	%

Average of Value Line, Ibbotson, and Bloomberg MRP:	9.84	%

(2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 10-11 of Exhibit DWD-4.) The projection of the risk-free rate is illustrated below:

First Quarter 2022	2.20	%
Second Quarter 2022	2.50	
Third Quarter 2022	2.60	
Fourth Quarter 2022	2.70	
First Quarter 2023	2.90	
Second Quarter 2023	3.00	
2023-2027	3.40	
2028-2032	3.80	
	2.89	%

(3) Average of Column 6 and Column 7.

Sources of Information:
Value Line Summary and Index
Blue Chip Financial Forecasts, March 1, 2022 and December 1, 2021
Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services

Oncor Electric Delivery Company LLC
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Utility Proxy Group

The criteria for selection of the Non-Price Regulated Proxy Group was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The Non-Price Regulated Proxy Group companies were then selected based on the unadjusted beta range of 0.65 – 0.93 and residual standard error of the regression range of 2.5237 – 3.0101 of the Utility Proxy Group.

These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression. Plus or minus two standard deviations captures 95.50% of the distribution of unadjusted betas and residual standard errors of the regression.

The standard deviation of the Electric Utility Proxy Group's residual standard error of the regression is 0.1216. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{\sqrt{2N}}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1216 = \frac{2.7669}{\sqrt{518}} = \frac{2.7669}{22.7596}$$

Source of Information: Value Line, Inc., March 2022
Value Line Investment Survey (Standard Edition)

Oncor Electric Delivery Company LLC
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

Proxy Group of Fourteen Electric Companies	[1] Value Line Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
Alliant Energy Corporation	0.85	0.71	2.6953	0.0667
Ameren Corporation	0.80	0.69	2.5235	0.0624
American Electric Power Company, Inc.	0.75	0.58	2.6108	0.0646
Duke Energy Corporation	0.85	0.75	2.6859	0.0664
Edison International	0.95	0.91	3.2986	0.0816
Entergy Corporation	0.95	0.86	2.7525	0.0681
Evergy, Inc.	0.95	0.85	3.0574	0.0778
Eversource Energy	0.90	0.82	3.0252	0.0748
IDACORP, Inc.	0.80	0.67	2.5897	0.0641
NorthWestern Corporation	0.95	0.89	2.7299	0.0675
OGE Energy Corporation	1.05	1.03	2.6847	0.0664
Portland General Electric Company	0.85	0.77	2.7744	0.0686
The Southern Company	0.95	0.87	2.6353	0.0652
Xcel Energy Inc.	0.80	0.65	2.6727	0.0661
Average	0.89	0.79	2.7669	0.0686

Beta Range (+/- 2 std. Devs. of Beta)	0.65	0.93
2 std. Devs. of Beta	0.14	
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.5237	3.0101
Std. dev. of the Res. Std. Err.	0.1216	
2 std. devs. of the Res. Std. Err.	0.2432	

Source of Information: Valueline Proprietary Database, March 2022

Oncor Electric Delivery Company LLC
Proxy Group of Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Fourteen Electric Companies

	[1]	[2]	[3]	[4]
Proxy Group of Forty-Eight Non-Price Regulated Companies	Value Line Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
Agilent Technologies	0.90	0.78	2.7005	0.0668
Abbott Labs	0.90	0.82	2.8039	0.0694
Analog Devices	0.95	0 88	2.8212	0.0698
Assurant Inc.	0.90	0.84	2.7387	0.0677
Smith (A.O.)	0.85	0.77	2.8592	0.0707
Air Products & Chem.	0.90	0.79	2.6168	0.0647
Brown-Forman 'B'	0.90	0.80	2.7317	0.0676
Ball Corp.	0.95	0.91	2.8617	0.0708
Bristol-Myers Squibb	0.85	0.75	2.9154	0.0721
Broadridge Fin'l	0.85	0.73	2.7513	0.0681
Brady Corp.	1.00	0.92	2.7776	0.0687
CACI Int'l	0.90	0.84	2.8642	0.0709
Cerner Corp.	0.90	0.80	2.6984	0.0667
Chemed Corp.	0.85	0 70	2.8432	0.0703
CSW Industrials	0.90	0.80	2.8686	0.0710
Danaher Corp.	0.80	0.68	2.5298	0.0626
Dolby Labs.	0.95	0.88	2.6074	0.0645
Exponent, Inc.	0.90	0.79	3.0005	0.0742
FactSet Research	0 95	0.92	2 7561	0.0682
GATX Corp.	0.95	0.88	2.9561	0.0731
Gentex Corp	0.95	0.89	2.7619	0.0683
Alphabet Inc.	0.90	0.79	2.5405	0.0628
Ingredion Inc.	0 95	0.85	2.7688	0.0685
Hunt (J.B.)	0.95	0.91	2.8935	0.0716
J&J Snack Foods	0.95	0.86	3.0009	0.0742
Henry (Jack) & Assoc	0.85	0.70	2.9159	0.0721
McCormick & Co.	0.80	0.65	2.8247	0.0699
Monster Beverage	0 85	0.75	2.9659	0.0734
Motorola Solutions	0.90	0.79	2.6488	0.0655
Mettler-Toledo Int'l	0.95	0.91	2.8032	0.0693
Northrop Grumman	0 85	0.75	2.9830	0.0738
Old Dominion Freight	0 95	0.86	2 9874	0.0739
Pfizer, Inc	0.80	0.65	2.6589	0 0658
Packaging Corp.	0 95	0.89	2.8411	0.0703
Post Holdings	0.95	0 87	2.8860	0.0714
RLI Corp.	0 80	0.65	2 8568	0.0707
Service Corp. Int'l	0.95	0 88	2.7221	0.0673
Sherwin-Williams	0.90	0.84	2.5345	0.0627
Selective Ins. Group	0.90	0.81	2.9172	0.0722
Sirius XM Holdings	0.95	0.85	2.9761	0.0736
Sensient Techn.	0.90	0.82	2.6687	0.0660
Thermo Fisher Sci.	0.85	0 70	2.6150	0.0647
Texas Instruments	0.85	0.76	2.6869	0.0665
AMERCO	0.95	0 90	2.7432	0.0679
UniFirst Corp	0 95	0.90	2 7175	0.0672
VeriSign Inc.	0.90	0.79	2.6081	0.0645
Waters Corp.	0.95	0.88	2.8517	0.0705
Watsco, Inc.	0.85	0.74	2.6836	0.0664
Average	0 90	0 81	2 7900	0 0700
Proxy Group of Fourteen Electric Companies	0.89	0.79	2.7669	0.0686

Source of Information: Valueline Proprietary Database, March 2022

FINANCIAL QUARTERLY
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Comparable Earnings: New Life for an Old Precept

by
Frank J. Hanley
Pauline M. Ahern

Reprinted from the American Gas Association's *Financial Quarterly Review*
Summer 1994 edition, Arlington, Va.

Comparable Earnings: New Life for an Old Precept

Accelerating deregulation has greatly increased the investment risk of natural gas utilities. As a result, the authors believe it more appropriate than ever to employ the comparable earnings model. We believe our application of the model overcomes the greatest traditional objection to it — lack of comparability of the selected non-utility proxy firms. Our illustration focuses on a target gas pipeline company with a beta of 0.96 — almost equal to the market's beta of 1.00

Frank J. Hanley is president of AUS Consultants — Utility Services Group. He has testified in several hundred rate proceedings on the subject of cost of capital before the Federal Energy Regulatory Commission and 27 state regulatory commissions. Before joining AUS in 1971, he was an assistant treasurer of a number of operating companies in the American Water Works System, as well as a financial planning officer with the Philadelphia National Bank. He is a Certified Rate of Return Analyst.

Pauline M. Ahern is a senior financial analyst with AUS Consultants — Utility Services Group. She has participated in many cost-of-capital studies. A former employee of the U.S. Department of the Treasury and the Federal Reserve Bank of Boston, she holds an MBA degree from Rutgers University and is a Certified Rate of Return Analyst.

Introduction

The comparable earnings model used to determine a common equity cost rate is deeply rooted in the standard of "corresponding risk" enunciated in the landmark *Bluefield* and *Hope* decisions of the U.S. Supreme Court[1] With such solid grounding in the foundations of rate of return regulation, comparable earnings should be accepted as a principal model, along with the currently popular market-based models, provided that its most common criticism, non-comparability of the proxy companies, is overcome.

Our comparable earnings model overcomes the non-comparability issue of the non-utility firms selected as a proxy for the target utility, in this example, a gas pipeline company. We should note that in the absence of common stock prices for the target utility (as with a wholly-owned subsidiary), it is appropriate to use the average of a proxy group of similar risk gas pipeline companies whose common stocks are actively traded. As we will demonstrate, our selection process results in a group of domestic, non-utility firms that is comparable in total risk, the sum of business and financial risk, which reflects both non-diversifiable systematic, or market, risk as well as diversifiable unsystematic, or firm-specific, risk.

Embedded in the Landmark Decisions

As stated in *Bluefield* in 1922: "A public utility is entitled to such rates as will permit it to earn a return . on investments in other business undertakings which are attended by corresponding risks and uncertainties ..."

In addition, the court stated in *Hope* in 1944: "By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks "

Thus, the "corresponding risk" precept of *Bluefield* and *Hope* predates the use of such market-based cost-of-equity models as the Discounted Cash Flow (DCF) and Capital Asset Pricing (CAPM), which were developed later and are currently popular in rate-base/rate-of-return regulation Consequently, the comparable earnings model has a longer regulatory and judicial history. However, it has far greater relevance now than ever before in its history because significant deregulation has substantially increased natural gas utilities' investment risk to a level similar to that of non-utility firms. As a result, it is

Comparable Earnings *from page 4*

more important than ever to look to similar-risk non-utility firms for insight into common equity cost rate, especially in view of the deficiencies inherent in the currently popular market-based cost of common equity models, particularly the DCF model.

Despite the fact that the landmark decisions are still regarded as having set the standards for determining a fair rate of return, the comparable earnings model has experienced decreased usage by expert witnesses, as well as less regulatory acceptance over the years. We believe the decline in the popularity of the comparable earnings model, in large measure, is attributable to the difficulty of selecting non-utility proxy firms that regulators will accept as comparable to the target utility. Regulatory acceptance is difficult to gain when the selection process is arbitrary. Our application of the model is objective and consistent with fundamental financial tenets.

Principles of Comparable Earnings

Regulation is a substitute for the competition of the marketplace More-over, regulated public utilities compete in the capital markets with all firms, including unregulated non-utilities. The comparable earnings model is based upon the opportunity cost principle; i.e., that the true cost of an investment is the return that could have been earned on the next best available alternative investment of similar risk Consequently, the comparable earnings model is consistent with regulatory and financial principles, as it is a surrogate for the competition of the marketplace, and investors seek the greatest available rate of return for bearing similar risk.

The selection of comparable firms is the most difficult step in applying the comparable earnings model, as noted by Phillips[2] as well as by Bonbright, Danielsen and Kamerschen [3] The selection of non-utility proxy firms should result in a sufficiently broad-based group in order to minimize the effect of company-specific aberrations However, if the selection process is arbitrary, it likely would result in a proxy group that is too broad-based, such as the Standard & Poor's 500 Composite Index or the Value Line Industrial Composite. The use of such groups would require subjective adjustments to the comparable earnings results to reflect risk differences between the group(s) and the target utility, a gas pipeline company in this example

Authors' Selection Criteria

We base the selection of comparable non-utility firms on market-based, objective, quantitative measures of risk resulting from market prices that subsume investors' assessments of all elements of risk. Thus, our approach is based upon the principle of risk and return; namely, that firms of comparable risk should be expected to earn comparable returns It is also consistent with the "corresponding risk" standard established in *Bluefield* and *Hope* We measure total investment risk as the sum of non-diversifiable systematic and diversifiable unsystematic risk. We use the unadjusted beta as a measure of systematic risk and the standard error of the estimate (residual standard error) as a measure of unsystematic risk. Both the unadjusted beta and the residual standard error are derived from a regression of the target utility's security returns relative to the market's returns, which takes the general form:

$$r_{it} = a_i + b_i\, r_{mt} + e_{it}$$

where:

r_{it} = tth observation of the ith utility's rate of return

r_{mt} = tth observation of the market's rate of return

e_{it} = tth random error term

a_i = constant least-squares regression coefficient

b_i = least-squares regression slope coefficient, the unadjusted beta.

As shown by Francis,[4] the total variation or risk of a firm's return, Var (r_i), comes from two sources:

Var (r_i) = total risk of ith asset

= $\mathrm{var}(a_i + b_i r_m + e)$ substituting $(a_i + b_i r_m + e)$ for r_i

= $\mathrm{var}(b_i r_m)$ + var (e) since $\mathrm{var}(a_i) = 0$

= $b_i^2\,\mathrm{var}(r_m)$ + var (e) since $\mathrm{var}(b_i r_m) = b_i^2\,\mathrm{var}(r_m)$

= systematic + unsystematic risk

Francis[5] also notes: "The term $\sigma^2(r_i|r_m)$ is called the *residual variance around the regression line* in statistical terms or *unsystematic risk* in capital market theory language. $\sigma^2(r_i|r_m) = \ldots$ = var (e). The residual variance is the squared standard error in regression language, a measure of unsystematic risk." Application of these criteria results in a group of non-utility firms whose average total investment risk is indeed comparable to that of the target gas pipeline.

As a measure of systematic risk, we use the Value Line unadjusted beta. Beta measures the extent to which market-wide or macro-economic events affect a firm's stock price We use the unadjusted beta of the target utility as a starting point because it results from the regression of the target utility's security returns relative to the market's returns. Thus, the resulting standard deviation of beta relates to the unadjusted beta We use the standard deviation of the unadjusted beta to determine the range around it as the selection criterion based on systematic risk.

We use the residual standard error of the regression as a measure of unsystematic risk The residual standard error reflects the extent to which events specific to the firm's operations affect a firm's stock price Thus, it is a measure of diversifiable, unsystematic, firm-specific risk.

An Illustration of Authors' Approach

Step One: We begin our approach by establishing the selection criteria as a range of both unadjusted beta and residual standard error of the target gas

continued on page 6

Comparable Earnings *from page 5*

pipeline company.

As shown in table 1, our target gas pipeline company has a Value Line unadjusted beta of 0.90, whose standard deviation is 0.1250. The selection criterion range of unadjusted beta is the unadjusted beta plus (+) and minus (-) three of its standard deviations. By using three standard deviations, 99.73 percent of the comparable unadjusted betas is captured

Three standard deviations of the target utility's unadjusted beta equals 0.38 (0.1250 x 3 = 0.3750, rounded to 0.38) Consequently, the range of unadjusted betas to be used as a selection criteria is 0.52 - 1 28 (0.52 = 0 90 - 0.38) and (1.28 = 0.90 + 0.38).

Likewise, the selection criterion range of residual standard error equals the residual standard error plus (+) and minus (-) three of its standard deviations. The standard deviation of the residual standard error is defined as: $\sigma/\sqrt{2N}$

As also shown in table 1, the target gas pipeline company has a residual standard error of 3.7867. According to the above formula, the standard deviation of the residual standard error would be 0.1664 (0.1664 = 3.7867/ $\sqrt{2(259)}$ = 3 7867/22.7596, where 259 = N, the number of weekly price change observations over a period of five years). Three standard deviations of the target utility's residual standard error would be 0.4992 (0.1664 x 3 = .4992). Consequently, the range of residual standard errors to be used as a selection criterion is 3.2875 - 4.2859 (3.2875 = 3.7867 - 0.4992) and (4.2859 = 3 7867 + 0.4992)

Step Two: The step one criteria are applied to Value Line's data base of nearly 4,000 firms for which Value Line derives unadjusted betas and residual standard errors on a weekly basis All firms with unadjusted betas and residual standard errors within the criteria ranges are then selected

Step Three: In the regulatory ratemaking environment, authorized common equity return rates are applied to a book-value rate base. Thus, the earnings rates on book common equity, or net worth, of competitive, non-utility firms are highly relevant provided those firms are indeed comparable in total risk to the target gas pipeline. The use of the return rates of other utilities has no relevance because their allowed, and hence subsequently achieved, earnings rates are dependent upon the regulatory

table 1

Summary of the Comparable Earnings Analysis for the Proxy Group of 248 Non-Utility Companies Comparable in Total Risk to the Target Gas Pipeline Company[1]

	1	2	3	4	5	6	7	8
			residual	rate of return on net worth				
	adj. beta	unadj. beta	standard error	3-year average[2]	4-year average[2]	5-year average[2]	5-year projected[3]	
average for the proxy group of 248 non-utility companies comparable in total risk to the target gas pipeline company	0.97	0.92	3.7705					
target gas pipeline company	0.96	0.90[4]	3.7867					
median				11.7%	12.0%	12.6%	15.5%	
average of the median historical returns					12.1%			
conclusion[5]								13.8%

[1] The criteria for selection of the non-utility group was that the non-utility companies be domestic and included in *Value Line Investment Survey*. The non-utility group was selected based on an unadjusted beta range of 0.52 to 1.28 and a residual standard error range of 3.2875 to 4.2859.
[2] Ending 1992.
[3] 1996-1998/1997-1999.
[4] The average standard deviation of the target gas pipeline company's unadjusted beta is 0.1250.
[5] Equal weight given to both the average of the 3-, 4- and 5-year historical medians (12.1%) and 5-year projected median rate of return on net worth (15.5%). Thus, 13.8% = (12.1% + 15.5% / 2).
Source: Value Line Inc., March 15, 1994
Value Line Investment Survey.

Comparable Earnings *from page 6*

process Consequently, we believe all utilities must be eliminated to avoid circularity. Moreover, we believe non-domestic firms must be eliminated because their reporting methods differ significantly from U.S. firms.

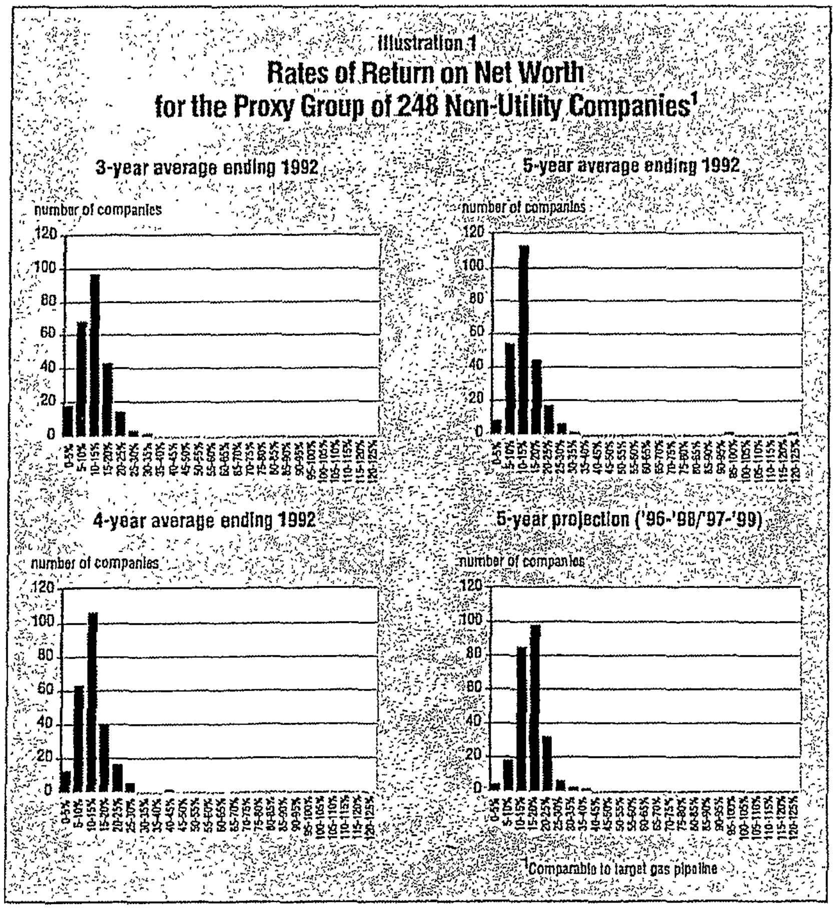
Step Four: We then eliminated those firms for which Value Line does not publish a "Ratings & Report" in *Value Line Investment Survey* so that the historical and projected returns on net worth[6] are from a consistent source. We use historical returns on net worth for the most recent five years, as well as those projected three to five years into the future. We believe it is logical to evaluate both historical and projected return rates because it is reasonable to assume that investors avail themselves of both when they are available from widely disseminated information services, such as Value Line Inc. The use of Value Line's return rates on net worth understates the common equity return rates for two reasons. First, preferred stock is included in net worth Second, the net worth return rates are as of the end of each period. Thus, the use of average common equity return rates would yield higher results

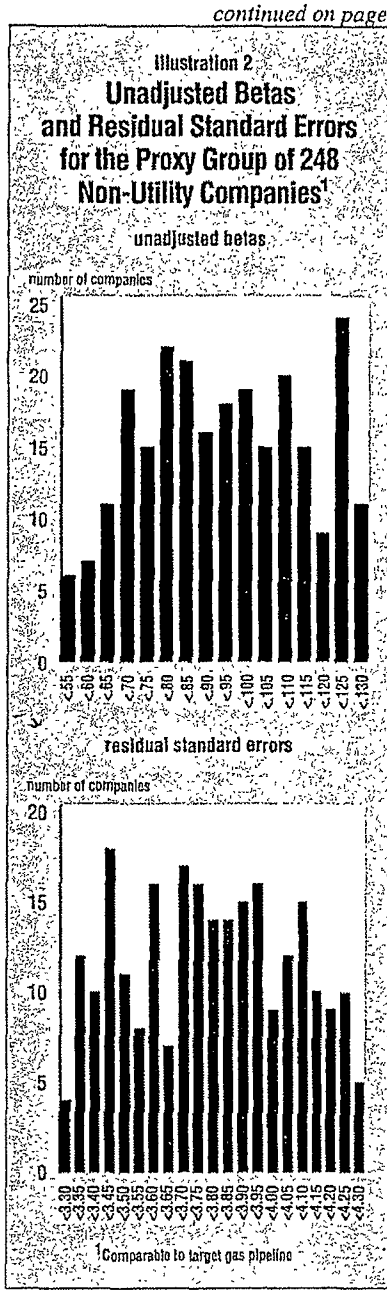
Step Five: Median returns based on the historical average three, four and five years ending 1992 and projected 1996-1998 or 1997-1999 rates of return on net worth are then determined as shown in columns 4 through 7 of table 1. The median is used due to the wide variations and skewness in rates of return on net worth for the non-utility firms as evidenced by the frequency distributions of those returns as shown in illustration 1.

However, we show the average unadjusted beta, 0 92, and residual standard error, 3.7705, for the proxy group in columns 2 and 3 of table 1 because their frequency distributions are not significantly skewed, as shown in illustration 2

Step Six: Our conclusion of a com-

continued on page 8





Comparable Earnings *from page 7*

parable earnings cost rate is based upon the mid-point of the average of the median three-, four- and five-year historical rates of return on net worth of 12 1 percent as shown in column 5 and the median projected 1996-1998/1997-1999 rate of return on net worth of 15 5 percent as shown in column 7 of table 1. As shown in column 8, it is 13 8 percent.

Summary

Our comparable earnings approach demonstrates that it is possible to select a proxy group of non-utility firms that is comparable in total risk to a target utility. In our example, the 13.8 percent comparable earnings cost rate is very conservative as it is an expected achieved rate on book common equity (a regulatory allowed rate should be greater) and because it is based on end-of-period net worth A similar rate on average net worth would be about 20 to 40 basis points higher (i e., 14.0 to 14.2 percent) and still understate the appropriate regulatory allowed rate of return on book common equity.

Our selection criteria are based upon measures of systematic and unsystematic risk, specifically unadjusted beta and residual standard error. They provide the basis for the objective selection of comparable non-utility firms. Our selection criteria rely on changes in market prices over approximately five years We compare the aggregate total risk, or the sum of systematic and unsystematic risk, which reflects investors' aggregate assessment of both business and financial risk. Thus, no adjustments are necessary to the proxy group results to compensate for the differences in business risk and financial risk, such as accounting practices and debt/equity ratios. Moreover, it is inappropriate to attempt a comparison of the target utility with any individual firm, or subset of firms, in the proxy group because only the average firm of the group is relevant.

Because the comparable earnings model is firmly anchored in the "corresponding risk" precept established in the landmark court decisions, it is worthy of consideration as a principal model for use in estimating the cost rate of common equity capital of a regulated utility. Our approach to the comparable earnings model produces a proxy group that is indeed comparable in total risk because the selection process is objective and quantitative It therefore overcomes criticism linked to arbitrary selection processes.

All cost-of-common-equity models, including the DCF and CAPM, are fraught with deficiencies, usually stemming from the many necessary but unrealistic assumptions that underlie them. The effects of the deficiencies of individual models can be mitigated by using more than one model when estimating a utility's common equity cost rate Therefore, when the non-comparability issue is overcome, the comparable earnings model deserves to receive the same consideration as a primary model, as do the currently popular market-based models. ■

[1]*Bluefield Water Works Improvement Co v Public Service Commission*. 262 U S 679 (1922) and *Federal Power Commission v Hope Natural Gas Co*. 320 U S 519 (1944)

[2]Charles F Phillips Jr , The Regulation of Public Utilities: Theory and Practice, Public Utilities Reports Inc . 1988. p 379

[3]James C Bonbright. Albert L Danielsen and David R Kamerschen. Principles of Public Utilities Rates. 2nd edition. Public Utilities Reports Inc 1988, p 329

[4]Jack Clark Francis. Investments: Analysis and Management, 3rd edition. McGraw-Hill Book Co , 1980, p 363

[5]Id , p 548

[6]Returns on net worth must be used when relying on Value Line data because returns on book common equity for non-utility firms are not available from Value Line

Report Lists Pipeline, Storage Projects

More than $9 billion worth of projects to expand the nation's natural gas pipeline network are in various stages of development, according to an A.G.A. report. These projects involve nearly 8,000 miles of new pipelines and capacity additions to existing lines and represent 15.3 billion cubic feet (Bcf) per day of new pipeline capacity.

During 1993 and early 1994, construction on 3,100 miles of pipeline was completed or under way, at a cost of nearly $4 billion, says A.G.A. These projects are adding 5.4 Bcf in daily delivery capacity nationwide.

Among the projects completed in 1993 were Pacific Gas Transmission Co.'s 805 miles of looping that allows increased deliveries of Canadian gas to the West Coast; Northwest Pipeline Corp.'s addition of 433 million cubic feet of daily capacity for customers in the Pacific Northwest and Rocky Mountain areas; and the 156-mile Empire State Pipeline in New York.

In addition, major construction projects were started on the systems of Texas Eastern Transmission Corp. and Algonquin Gas Transmission Co. — both subsidiaries of Panhandle Eastern Corp. — and along Florida Gas Transmission Co.'s pipeline.

The report goes on to discuss another $5 billion in proposed projects, which, if completed, will add nearly 5,000 miles of pipeline and 9.8 Bcf per day in capacity, much of it serving Florida and West Coast markets.

A.G.A. also identifies 47 storage projects and says that if all of them are built, existing storage capacity will increase by more than 500 Bcf, or 15 percent.

For a copy of *New Pipeline Construction: Status Report 1993-94* (#F00103), call A.G.A. at (703) 841-8490. Price per copy is $6 for employees of member companies and associates and $12 for other customers.

Investments: Analysis and Management

Fifth Edition

Jack Clark Francis

Bernard M. Baruch College
City University of New York

McGraw-Hill, Inc

New York St. Louis San Francisco Auckland Bogotá
Caracas Hamburg Lisbon London Madrid Mexico
Milan Montreal New Delhi Paris San Juan
São Paulo Singapore Sydney Tokyo Toronto

Investments: Analysis and Management

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ISBN 0-07-021814-5

This book was set in Times Roman by General Graphic Services, Inc.
The editors were Ken MacLeod and Ira Roberts;
the designer was Robin Hessel;
the production supervisor was Friederich W. Schulte
New drawings were done by J&R Services, Inc
R R. Donnelley & Sons Company was printer and binder.

Library of Congress Cataloging-in-Publication Data

Francis, Jack Clark.
Investments: Analysis and management / Jack Clark Francis.—
5th ed.
p. cm —(McGraw-Hill series in finance)
Includes bibliographical references.
ISBN 0-07-021814-5
1. Investments 2. Securities. 3. Financial futures
4. Arbitrage. I. Title. II. Series
HG4521 F685 1991
332.6—dc20 90-33289

Beta Measurements The beta coefficient is an *index of systematic risk.* Beta coefficients may be used for ranking the systematic risk of different assets. If the beta is larger than 1, $b > 1.0$, then the asset is more volatile than the market and is called an **aggressive asset.** If the beta is less than 1, $b < 1.0$, the asset is a **defensive asset;** its price fluctuations are less volatile than the market's. Figure 10-1 illustrates the characteristic lines for three different assets that have low, medium, and high levels of beta (or undiversifiable risk).

Figure 10-2 shows that IBM is a stock with an average amount of systematic risk. IBM's beta of 1.02 indicates that its return tends to increase 2 percent more than the return on the market average when the market is rising. When the market falls, IBM's return tends to fall 2 percent more than the market's. The characteristic line for IBM has an above average correlation coefficient of $\rho = .7495$, indicating that the returns on this security follow its particular characteristic line slightly more closely than those of the average stock.

Partitioning Risk

Total risk can be measured by the variance of returns, denoted Var(r). This measure of *total risk is partitioned into its systematic and unsystematic components in Equation (10-8).*[7]

$$\begin{aligned} \mathrm{Var}(r_i) &= \text{total risk of } i\text{th asset} \\ &= \mathrm{Var}(a_i + b_i r_{m,t} + e_{i,t}) \\ &\quad \text{by substituting } (a_i + b_i r_{m,t} + e_{i,t}) \text{ for } r_{i,t} \\ &= 0 + \mathrm{Var}(b_i r_{m,t}) + \mathrm{Var}(e_{i,t}) \\ &\quad \text{since } \mathrm{Var}(a_i) = 0 \end{aligned} \tag{10-8}$$

$$\begin{aligned} \mathrm{Var}(r_i) &= b_i^2\,\mathrm{Var}(r_m) + \mathrm{Var}(e) \qquad \text{since } \mathrm{Var}(b_i r_m) = b_i^2\,\mathrm{Var}(r_m) \\ &= \text{systematic} + \text{unsystematic risk} \end{aligned} \tag{10-8a}$$

$$.01389 = .00780 + .00609 \qquad \text{for IBM}$$

The unsystematic risk measure Var(e) is called in regression language the *residual variance* or, synonymously, the *standard error squared.*

Undiversifiable Proportion The percentage of total risk that is systematic can be measured by the coefficient of determination ρ^2 (that is, the characteristic line's squared correlation coefficient).

[7]In this context, **partition** is a technical statistical term that means to divide the total variance into *mutually exclusive* and *exhaustive* pieces. This partition is only possible if the returns from the market are statistically independent from the residual error terms that occur simultaneously, $\mathrm{Cov}(r_{m,t}, e_{i,t}) = 0$. The mathematics of regression analysis will orthogonalize the residuals and thus ensure that the needed statistical independence exists.

$$\frac{\text{Systematic risk}}{\text{Total risk}} = \frac{b_i^2\ \text{Var}(r_m)}{\text{Var}(r_m)} = \rho^2 \tag{10-9}$$

$$\frac{.007802}{.01389} = \frac{(1.021)^2\ (.00749)}{.00749} = .5617 \times 100 = 56.17\% \qquad \text{for IBM}$$

Diversifiable Proportion The percentage of unsystematic risk equals $(1.0 - \rho^2)$.

$$\frac{\text{Unsystematic risk}}{\text{Total risk}} = \frac{\text{Var}(e)}{\text{Var}(r_i)} = (1.0 - \rho^2)$$

$$\frac{.00609}{.01389} = (1.0 - .5617) = .438 \times 100 \tag{10-10}$$

$$= 43.8\%\ \text{unsystematic} \qquad \text{for IBM}$$

Studies of the characteristic lines of hundreds of stocks listed on the NYSE indicate that the average correlation coefficient is approximately $\rho = .5$.[8] This means that about $\rho^2 = 25$ percent of the total variability of return in most NYSE securities is explained by movements in the market.

	NYSE average	IBM
Systematic risk: ρ^2	.25	5617
Unsystematic risk: $(1.0 - \rho^2)$	.75	.4383
Total risk: 100%	1.00	1.0000

As explained above, systematic changes are common to all stocks and are therefore undiversifiable.

A primary use of the characteristic line (or *market model*, or the *single-index model*, as it is also called) is to assess the risk characteristics of one asset.[9] The statistics in Table 10-2, for instance, indicate that IBM's common stock is slightly more risky than the average common stock in terms of total risk and

[8]The average ρ was found to be about .5, as reported in Marshall Blume, "On the Assessment of Risk," *Journal of Finance*, March 1971, p. 4. For similar estimates, see J. C. Francis, "Statistical Analysis of Risk Surrogates for NYSE Stocks," *Journal of Financial and Quantitative Analysis*, Dec. 1979.

[9]Professor Jensen reformulated the characteristic line in a risk-premium form. See M. C Jensen, "The Performance of Mutual Funds in the Period 1945 through 1964," *Journal of Finance*, May 1968, pp. 389–416. See also M. C. Jensen, "Risk, the Pricing of Capital Assets, and the Evaluation of Investment Portfolios," *Journal of Business*, vol. XLII, 1969. Jensen interprets the alpha intercept term of the characteristic line, as he formulates it, as an investment performance measure. It has been suggested that Jensen's performance measure is biased. See Keith V. Smith and Dennis A. Tito, "Risk-Return Measures of Ex-Post Portfolio Performance," *Journal of Financial and Quantitative Analysis*, Dec. 1969, vol. IV, no. 4, p. 466.

systematic risk.[10] New risk measurements must be made periodically, however, because the risk and return of an asset may change with the passage of time.[11]

10-3 CAPITAL ASSET PRICING MODEL (CAPM)

An old axiom states "there is no such thing as a free lunch." This means that you cannot expect to get something for nothing—a rule that certainly applies to investment returns. Investors who want to earn high average rates of return must take high risks and endure the associated loss of sleep, the possibility of ulcers, and the chance of bankruptcy. The question to which we now turn is: Should investors worry about total risk, undiversifiable risk, diversifiable risk, or all three?

In Chapter 1 it was suggested that *investors should seek investments that have the maximum expected return in their risk class.* Their happiness from investing is presumed to be derived as indicated in the expected utility $E(U)$ function below.

$$E(U) = f[E(r), \sigma]$$

The investment preferences of wealth-seeking risk-averse investors represented by the function above cause them to maximize their expected utility (or, equivalently, happiness) by (1) maximizing their expected return in any given risk class, $\partial E(U)/\partial E(r) > 0$, or, conversely, (2) minimizing their total risk at any given rate of expected return, $\partial E(U)/\partial\sigma < 0$. However, in selecting individual assets, investors will not be particularly concerned with the asset's total risk σ. Figure 9-1 showed that the unsystematic portion of total risk can be easily diversified by holding a portfolio of different securities. But, systematic risk affects all stocks in the market because it is undiversifiable. Portfolio theory therefore suggests that only the undiversifiable (or systematic) risk is worth avoiding.[12]

[10]Statements about the relative degree of total risk are made in the context of a long-run horizon—that is, over at least one *complete business cycle*. Obviously, an accurate short-run forecast which says that some particular company will go bankrupt next quarter makes it more risky than IBM, although IBM may have had more historical variability of return.

[11]Empirical studies documenting the intertemporal instability of betas have been published. Marshall Blume, "Betas and Their Regression Tendencies," *Journal of Finance,* June 1975, pp. 785–795. See also J. C. Francis, "Statistical Analysis of Risk Coefficients for NYSE Stocks," *Journal of Financial and Quantitative Analysis,* Dec. 1979, vol. XIV, no. 5, pp. 981–997. An appendix at the end of this chapter reviews some evidence about shifting betas, standard deviations, and correlations.

[12]Both the systematic and unsystematic portions of total risk must be considered by **undiversified investors.** Entrepreneurs who have their entire net worth invested in one business, for example, can be bankrupted by a piece of bad luck that could be easily averaged away to zero in a diversified portfolio. Poorly diversified investors should not treat diversifiable risk lightly. Only well-diversified investors can afford to ignore diversifiable risk.

Oncor Electric Delivery Company LLC
Summary of Cost of Equity Models Applied to
Proxy Group of Forty-Eight Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Fourteen Electric Companies

Principal Methods	Proxy Group of Forty-Eight Non-Price Regulated Companies
Discounted Cash Flow Model (DCF) (1)	12.70 %
Risk Premium Model (RPM) (2)	12.73
Capital Asset Pricing Model (CAPM) (3)	12.07
Mean	12.50 %
Median	12.70 %
Average of Mean and Median	12.60 %

Notes:
(1) From page 2 of this Exhibit.
(2) From page 3 of this Exhibit.
(3) From page 6 of this Exhibit.

Oncor Electric Delivery Company LLC
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Fourteen Electric Companies

	[1]	[2]	[3]	[5]	[6]	[7]	[8]
Proxy Group of Forty-Eight Non-Price Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth in EPS	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth Rate in EPS	Adjusted Dividend Yield	Indicated Common Equity Cost Rate (1)
Agilent Technologies	0.60 %	11.50 %	9.00 %	13.61 %	11.37 %	0.63 %	12.00 %
Abbott Labs.	1.49	10.00	7.80	12.12	9.97	1.56	11.53
Analog Devices	1.87	11.00	12.30	14.71	12.67	1.99	14.66
Assurant Inc	1.70	15.50	17.70	17.70	16.97	1.84	18.81
Smith (A.O.)	1.49	11.00	9.00	8.00	9.33	1.56	10.89
Air Products & Chem.	2.45	12.00	12.20	11.20	11.80	2.59	14.39
Brown-Forman 'B'	1.12	13.00	NA	7.01	10.01	1.18	11.19
Ball Corp.	0.88	21.00	5.00	14.78	13.59	0.94	14.53
Bristol-Myers Squibb	3.28	12.50	6.80	5.00	8.10	3.41	11.51
Broadridge Fin'l	1.63	9.00	NA	11.80	10.40	1.71	12.11
Brady Corp	1.81	9.50	7.00	7.00	7.83	1.88	9.71
CACI Int'l	-	10.50	3.80	2.40	5.57	-	NA
Cerner Corp	1.17	9.50	12.80	13.52	11.94	1.24	13.18
Chemed Corp	0.30	9.50	8.30	6.60	8.13	0.31	8.44
CSW Industrials	0.51	14.00	NA	12.00	13.00	0.54	13.54
Danaher Corp.	0.35	22.00	20.50	16.87	19.79	0.38	20.17
Dolby Labs	1.21	10.50	13.00	16.00	13.17	1.29	14.46
Exponent, Inc.	0.98	12.00	NA	15.00	13.50	1.05	14.55
FactSet Research	0.77	9.50	8.40	9.75	9.22	0.81	10.03
GATX Corp	1.95	5.50	NA	12.00	8.75	2.04	10.79
Gentex Corp	1.51	10.00	12.80	15.80	12.87	1.61	14.48
Alphabet Inc	-	23.50	19.80	14.10	19.13	-	NA
Ingredion Inc	2.83	7.50	NA	10.50	9.00	2.96	11.96
Hunt (J.B.)	0.81	11.00	15.00	28.04	18.01	0.88	18.89
J&J Snack Foods	1.63	8.50	NA	6.00	7.25	1.69	8.94
Henry (Jack) & Assoc	1.14	10.50	17.00	14.00	13.83	1.22	15.05
McCormick & Co	1.52	6.00	6.10	7.20	6.43	1.57	8.00
Monster Beverage	-	13.00	15.90	14.01	14.30	-	NA
Motorola Solutions	1.34	8.00	9.00	14.27	10.42	1.41	11.83
Mettler-Toledo Int'l	-	13.50	19.10	17.80	16.80	-	NA
Northrop Grumman	1.55	7.50	6.20	4.80	6.17	1.60	7.77
Old Dominion Freight	0.38	12.00	15.80	24.81	17.54	0.41	17.95
Pfizer, Inc	3.05	11.50	12.50	103.51	12.00	3.23	15.23
Packaging Corp	2.79	9.00	5.00	16.40	10.13	2.93	13.06
Post Holdings	-	16.50	NA	26.40	21.45	-	NA
RLI Corp	0.95	12.00	NA	9.80	10.90	1.00	11.90
Service Corp. Int'l	1.57	6.50	8.70	7.06	7.42	1.63	9.05
Sherwin-Williams	0.83	11.50	12.40	14.00	12.63	0.88	13.51
Selective Ins Group	1.40	11.00	NA	13.40	12.20	1.49	13.69
Sirius XM Holdings	1.40	30.50	9.70	9.75	16.65	1.52	18.17
Sensient Techn	1.90	2.50	NA	3.80	3.15	1.93	5.08
Thermo Fisher Sci	0.21	15.50	14.00	10.87	13.46	0.22	13.68
Texas Instruments	2.60	9.00	9.30	10.00	9.43	2.72	12.15
AMERCO	-	11.50	NA	15.00	13.25	-	NA
UniFirst Corp.	0.64	5.50	NA	10.00	7.75	0.66	8.41
VeriSign Inc.	-	8.50	NA	8.00	8.25	-	NA
Waters Corp	-	6.00	8.50	10.00	8.17	-	NA
Watsco, Inc	2.73	11.00	NA	15.00	13.00	2.91	15.91
						Mean	12.78 %
						Median	12.61 %
						Average of Mean and Median	12.70 %

NA= Not Available
NMF= Not Meaningful Figure

(1) The application of the DCF model to the domestic, non-price regulated comparable risk companies is identical to the application of the DCF to the Utility Proxy Group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of March 18, 2022. The dividend yield is then adjusted by 1/2 the average projected growth rate in EPS, which is calculated by averaging the 5 year projected growth in EPS provided by Value Line, www.zacks.com, and www.yahoo.com (excluding any negative growth rates) and then adding that growth rate to the adjusted dividend yield.

Source of Information: Value Line Investment Survey
www.zacks.com Downloaded on 03/18/2022
www.yahoo.com Downloaded on 03/18/2022

Oncor Electric Delivery Company LLC
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Forty-Eight Non-Price Regulated Companies
1.	Prospective Yield on Baa2 Rated Corporate Bonds (1)	4.71 %
2.	Adjustment to Reflect Bond rating Difference of Non-Price Regulated Companies (2)	(0.12)
3.	Adjusted Prospective Bond Yield	4.59
4.	Equity Risk Premium (3)	8.14
5.	Risk Premium Derived Common Equity Cost Rate	12.73 %

Notes: (1) Average forecast of Baa corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated March 1, 2022 and December 1, 2021 (see pages 10-11 of Exhibit DWD-4). The estimates are detailed below.

First Quarter 2022	3.90 %
Second Quarter 2022	4.20
Third Quarter 2022	4.40
Fourth Quarter 2022	4.60
First Quarter 2023	4.80
Second Quarter 2023	4.90
2023-2027	5.20
2028-2032	5.70
Average	4.71 %

(2) The average yield spread of Baa2 rated corporate bonds over A2 corporate bonds for the three months ending February 2022 . To reflect the Baa1 average rating of the non-utility proxy group, the prosepctive yield on Baa2 corporate bonds must be adjusted by 1/3 of the spread between A2 and Baa2 corporate bond yields as shown below:

	A2 Corp. Bond Yield	Baa2 Corp. Bond Yield	Spread
Feb-22	3.60 %	3.97 %	0.37 %
Jan-22	3.25	3.59	0.34
Dec-21	2.97	3.30	0.33
		Average yield spread	0.35
		1/3 of spread	0.12

(2) From page 5 of this Exhibit.

Oncor Electric Delivery Company LLC
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Forty-Eight Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Fourteen Electric Companies

	Moody's Long-Term Issuer Rating March 2022		Standard & Poor's Long-Term Issuer Rating March 2022	
Proxy Group of Forty-Eight Non-Price Regulated Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
Agilent Technologies	Baa2	9.0	BBB+	8.0
Abbott Labs	A1	5.0	AA-	4.0
Analog Devices	A3	7.0	A-	7.0
Assurant Inc.	Baa3	10.0	BBB	9.0
Smith (A.O.)	NA	--	NA	--
Air Products & Chem.	A2	6.0	A	6.0
Brown-Forman 'B'	A1	5.0	A-	7.0
Ball Corp.	Ba1	11.0	BB+	11.0
Bristol-Myers Squibb	A2	6.0	A+	5.0
Broadridge Fin'l	Baa1	8.0	BBB+	8.0
Brady Corp	NA	--	NA	--
CACI Int'l	NA	--	BB+	11.0
Cerner Corp	NA	--	NA	--
Chemed Corp.	WR	--	NR	--
CSW Industrials	NA	--	NA	--
Danaher Corp.	Baa1	8.0	BBB+	8.0
Dolby Labs.	NA	--	NA	--
Exponent, Inc	NA	--	NA	--
FactSet Research	Baa3	10.0	NA	--
GATX Corp	Baa2	9.0	BBB	9.0
Gentex Corp.	NA	--	NA	--
Alphabet Inc	Aa2	3.0	AA+	2.0
Ingredion Inc	Baa1	8.0	BBB	9.0
Hunt (J.B.)	Baa1	8.0	BBB+	8.0
J&J Snack Foods	NA	--	NA	--
Henry (Jack) & Assoc	NA	--	NA	--
McCormick & Co	Baa2	9.0	BBB	9.0
Monster Beverage	NA	--	NA	--
Motorola Solutions	Baa3	10.0	BBB-	10.0
Mettler-Toledo Int'l	WR	--	NR	--
Northrop Grumman	Baa1	8.0	BBB+	8.0
Old Dominion Freight	NA	--	NA	--
Pfizer, Inc	A2	6.0	A+	5.0
Packaging Corp.	Baa2	9.0	BBB	9.0
Post Holdings	B2	15.0	B+	14.0
RLI Corp	Baa2	9.0	BBB	9.0
Service Corp Int'l	Ba3	13.0	BB+	11.0
Sherwin-Williams	Baa2	9.0	BBB	9.0
Selective Ins. Group	Baa2	9.0	BBB	9.0
Sirius XM Holdings	NA	--	BB	12.0
Sensient Techn.	WR	--	NR	--
Thermo Fisher Sci.	A3	7.0	BBB+	8.0
Texas Instruments	Aa3	4.0	A+	5.0
AMERCO	WR	--	NR	--
UniFirst Corp.	NA	--	NA	--
VeriSign Inc.	Baa3	10.0	BBB	9.0
Waters Corp.	NA	--	NA	--
Watsco, Inc.	NA	--	NA	--
Average	Baa1	8.3	BBB+	8.2

Notes
(1) From page 6 of Exhibit DWD-4

Source of Information
Bloomberg Professional Services

Oncor Electric Delivery Company LLC
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Forty-Eight Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Fourteen Electric Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Forty-Eight Non-Price Regulated Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.92 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.23
3.	Ibbotson Equity Risk Premium based on PRPM (3)	8.07
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	7.44
5	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	12.19
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	10.65
7.	Conclusion of Equity Risk Premium	8.75 %
8.	Adjusted Beta (7)	0.93
9.	Forecasted Equity Risk Premium	8.14 %

Notes:
(1) From note 1 of page 9 of Exhibit DWD-4.
(2) From note 2 of page 9 of Exhibit DWD-4.
(3) From note 3 of page 9 of Exhibit DWD-4.
(4) From note 4 of page 9 of Exhibit DWD-4.
(5) From note 5 of page 9 of Exhibit DWD-4.
(6) From note 6 of page 9 of Exhibit DWD-4.
(7) Average of mean and median beta from page 6 of this Exhibit.

Sources of Information:
Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, March 1, 2022 and December 1, 2021
Bloomberg Professional Services

Oncor Electric Delivery Company LLC
Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the Proxy Group of Fourteen Electric Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Forty-Eight Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
Agilent Technologies	0.90	0.98	0.94	9.84 %	2.89 %	12.14 %	12.28 %	12.21 %
Abbott Labs	0.90	0.79	0.84	9.84	2.89	11.15	11.55	11.35
Analog Devices	0.95	1.08	1.01	9.84	2.89	12.83	12.80	12.81
Assurant Inc.	0.95	0.93	0.94	9.84	2.89	12.14	12.28	12.21
Smith (A.O.)	0.85	1.06	0.95	9.84	2.89	12.24	12.36	12.30
Air Products & Chem	0.90	0.90	0.90	9.84	2.89	11.74	11.99	11.87
Brown-Forman 'B'	0.90	0.96	0.93	9.84	2.89	12.04	12.21	12.12
Ball Corp	0.95	1.02	0.98	9.84	2.89	12.53	12.58	12.55
Bristol-Myers Squibb	0.85	0.64	0.74	9.84	2.89	10.17	10.81	10.49
Broadridge Fin'l	0.85	0.85	0.85	9.84	2.89	11.25	11.62	11.44
Brady Corp	1.00	1.17	1.08	9.84	2.89	13.51	13.32	13.42
CACI Int'l	0.90	0.92	0.91	9.84	2.89	11.84	12.06	11.95
Cerner Corp.	0.90	0.75	0.82	9.84	2.89	10.96	11.40	11.18
Chemed Corp.	0.85	0.90	0.88	9.84	2.89	11.55	11.84	11.69
CSW Industrials	0.90	1.07	0.99	9.84	2.89	12.63	12.65	12.64
Danaher Corp.	0.80	0.82	0.81	9.84	2.89	10.86	11.33	11.09
Dolby Labs.	0.95	0.88	0.91	9.84	2.89	11.84	12.06	11.95
Exponent, Inc	0.90	1.01	0.95	9.84	2.89	12.24	12.36	12.30
FactSet Research	0.95	0.94	0.94	9.84	2.89	12.14	12.28	12.21
GATX Corp.	0.95	0.97	0.96	9.84	2.89	12.33	12.43	12.38
Gentex Corp.	0.95	1.09	1.02	9.84	2.89	12.92	12.87	12.90
Alphabet Inc.	0.90	0.98	0.94	9.84	2.89	12.14	12.28	12.21
Ingredion Inc	0.90	0.83	0.86	9.84	2.89	11.35	11.69	11.52
Hunt (J.B.)	0.95	0.99	0.97	9.84	2.89	12.43	12.51	12.47
J&J Snack Foods	0.95	0.72	0.83	9.84	2.89	11.05	11.47	11.26
Henry (Jack) & Assoc	0.85	0.78	0.82	9.84	2.89	10.96	11.40	11.18
McCormick & Co	0.80	0.59	0.70	9.84	2.89	9.78	10.51	10.14
Monster Beverage	0.85	1.00	0.92	9.84	2.89	11.94	12.14	12.04
Motorola Solutions	0.90	1.01	0.95	9.84	2.89	12.24	12.36	12.30
Mettler-Toledo Int'l	0.95	1.10	1.03	9.84	2.89	13.02	12.95	12.99
Northrop Grumman	0.85	0.73	0.79	9.84	2.89	10.66	11.18	10.92
Old Dominion Freight	0.95	1.07	1.01	9.84	2.89	12.83	12.80	12.81
Pfizer, Inc.	0.80	0.59	0.69	9.84	2.89	9.68	10.44	10.06
Packaging Corp.	0.95	0.82	0.89	9.84	2.89	11.64	11.92	11.78
Post Holdings	0.95	0.81	0.88	9.84	2.89	11.55	11.84	11.69
RLI Corp	0.80	1.02	0.91	9.84	2.89	11.84	12.06	11.95
Service Corp. Int'l	0.95	1.03	0.99	9.84	2.89	12.63	12.65	12.64
Sherwin-Williams	0.90	0.98	0.94	9.84	2.89	12.14	12.28	12.21
Selective Ins. Group	0.90	1.00	0.95	9.84	2.89	12.24	12.36	12.30
Sirius XM Holdings	0.95	1.01	0.98	9.84	2.89	12.53	12.58	12.55
Sensient Techn	0.90	0.99	0.95	9.84	2.89	12.24	12.36	12.30
Thermo Fisher Sci	0.85	0.76	0.80	9.84	2.89	10.76	11.25	11.01
Texas Instruments	0.85	0.92	0.89	9.84	2.89	11.64	11.92	11.78
AMERCO	0.95	1.13	1.04	9.84	2.89	13.12	13.02	13.07
UniFirst Corp	0.95	1.10	1.02	9.84	2.89	12.92	12.87	12.90
VeriSign Inc.	0.90	0.78	0.84	9.84	2.89	11.15	11.55	11.35
Waters Corp.	0.95	0.94	0.94	9.84	2.89	12.14	12.28	12.21
Watsco, Inc.	0.85	0.78	0.82	9.84	2.89	10.96	11.40	11.18
Mean			0.91			11.85 %	12.07 %	11.96 %
Median			0.94			12.09 %	12.25 %	12.17 %
Average of Mean and Median			0.93			11.97 %	12.16 %	12.07 %

Notes
(1) From note 1 of page 2 of Exhibit DWD-5.
(2) From note 2 of page 2 of Exhibit DWD-5
(3) Average of CAPM and ECAPM cost rates.

Oncor Electric Delivery Company LLC
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		[1] Market Capitalization on March 18, 2022 (1) (millions)	(times larger)	[2] Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	[3] Applicable Size Premium (3)	[4] Spread from Applicable Size Premium (4)
1.	Oncor Electric Delivery Company LLC	$ 17,044.578		2	0.49%	
2.	Proxy Group of Fourteen Electric Companies	$ 27,854.041	1.6 x	2	0.49%	0.00%

	[A] Decile	[B] Market Capitalization of Smallest Company (millions)	[C] Market Capitalization of Largest Company (millions)	[D] Size Premium (Return in Excess of CAPM)*
Largest	1	$ 29,025.803	$ 1,966,078.882	-0.22%
	2	13,178 743	28,808.073	0.49%
	3	6,743.361	13,177.828	0.71%
	4	3,861.858	6,710.676	0.75%
	5	2,445 693	3,836.536	1.09%
	6	1,591.865	2,444.745	1 37%
	7	911.586	1,591.765	1.54%
	8	451.955	911.103	1.46%
	9	190.019	451.800	2.29%
Smallest	10	2.194	189.831	5 01%

*From 2021 Duff & Phelps Cost of Capital Navigator

Notes:

(1) From page 2 of this Exhibit
(2) Gleaned from Columns [B] and [C] on the bottom of this page. The appropriate decile (Column [A]) corresponds to the market capitalization of the proxy group, which is found in Column [1].
(3) Corresponding risk premium to the decile is provided in Column [D] on the bottom of this page.
(4) Line No. 1 Column [3] – Line No. 2 Column [3]. For example, the 0 00% in Column [4], Line No. 2 is derived as follows 0.00% = 0.49% - 0 49%.

Oncor Electric Delivery Company LLC
Market Capitalization of Oncor Electric Delivery Company LLC and the
Proxy Group of Fourteen Electric Companies

Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2021 (millions)	[2] Book Value per Share at Fiscal Year End 2021 (1)	[3] Total Common Equity at Fiscal Year End 2021 (millions)	[4] Closing Stock Market Price on March 18, 2022	[5] Market-to-Book Ratio on March 18, 2022 (2)	[6] Market Capitalization on March 18, 2022 (3) (millions)
Oncor Electric Delivery Company LLC		NA	NA	8,467.25 (4)	NA		
Based upon Proxy Group of Fourteen Electric Companies						201.3 (5)	$ 17,044.578 (6)
Proxy Group of Fourteen Electric Companies							
Alliant Energy Corporation	NASDAQ	250.475	$ 23.915	$ 5,990.000	$ 60.310	252.2 %	$ 15,106.119
Ameren Corporation	NYSE	257 700	37.641	9,700.000	87.850	233.4	22,638.945
American Electric Power Company, Inc.	NASDAQ	504.212	44.492	22,433.200	94.070	211.4	47,431.224
Duke Energy Corporation	NYSE	769.000	61.553	47,334.000	105.050	170.7	80,783.450
Edison International	NYSE	380.378	36 572	13,911.000	64.650	176 8	24,591.447
Entergy Corporation	NYSE	202.653	57.425	11,637.284	109.450	190.6	22,180.391
Evergy, Inc.	NYSE	229.300	40.316	9,244.400	64.770	160.7	14,851.755
Eversource Energy	NYSE	344.403	42.392	14,599.844	83.430	196.8	28,733.559
IDACORP, Inc.	NYSE	50.516	52.823	2,668.436	110.250	208.7	5,569.442
NorthWestern Corporation	NASDAQ	57 606	40.616	2,339.713	57.340	141.2	3,303.142
OGE Energy Corporation	NYSE	200 500	20.231	4,056.300	38.410	189.9	7,701.205
Portland General Electric Company	NYSE	89.411	30.276	2,707.000	53.790	177.7	4,809.397
The Southern Company	NYSE	1,100.000	25.340	27,874.000	68.030	268.5	74,833.000
Xcel Energy Inc.	NASDAQ	544.025	28.697	15,612.000	68.790	239.7	37,423.498
Average		355.727	$ 38.735	$ 13,579.084	$ 76.156	201.3 %	$ 27,854.041

NA= Not Available

Notes
(1) Column 3 / Column 1.
(2) Column 4 / Column 2
(3) Column 1 * Column 4.
(4) Requested rate base multiplied by equity ratio.
(5) The market-to-book ratio of Oncor Electric Delivery Company LLC on March 18, 2022 is assumed to be equal to the market-to-book ratio of Proxy Group of Fourteen Electric Companies on March 18, 2022 as appropriate
(6) Column [3] multiplied by Column [5].

Source of Information. 2021 Annual Forms 10K
yahoo.finance.com
Bloomberg Professional

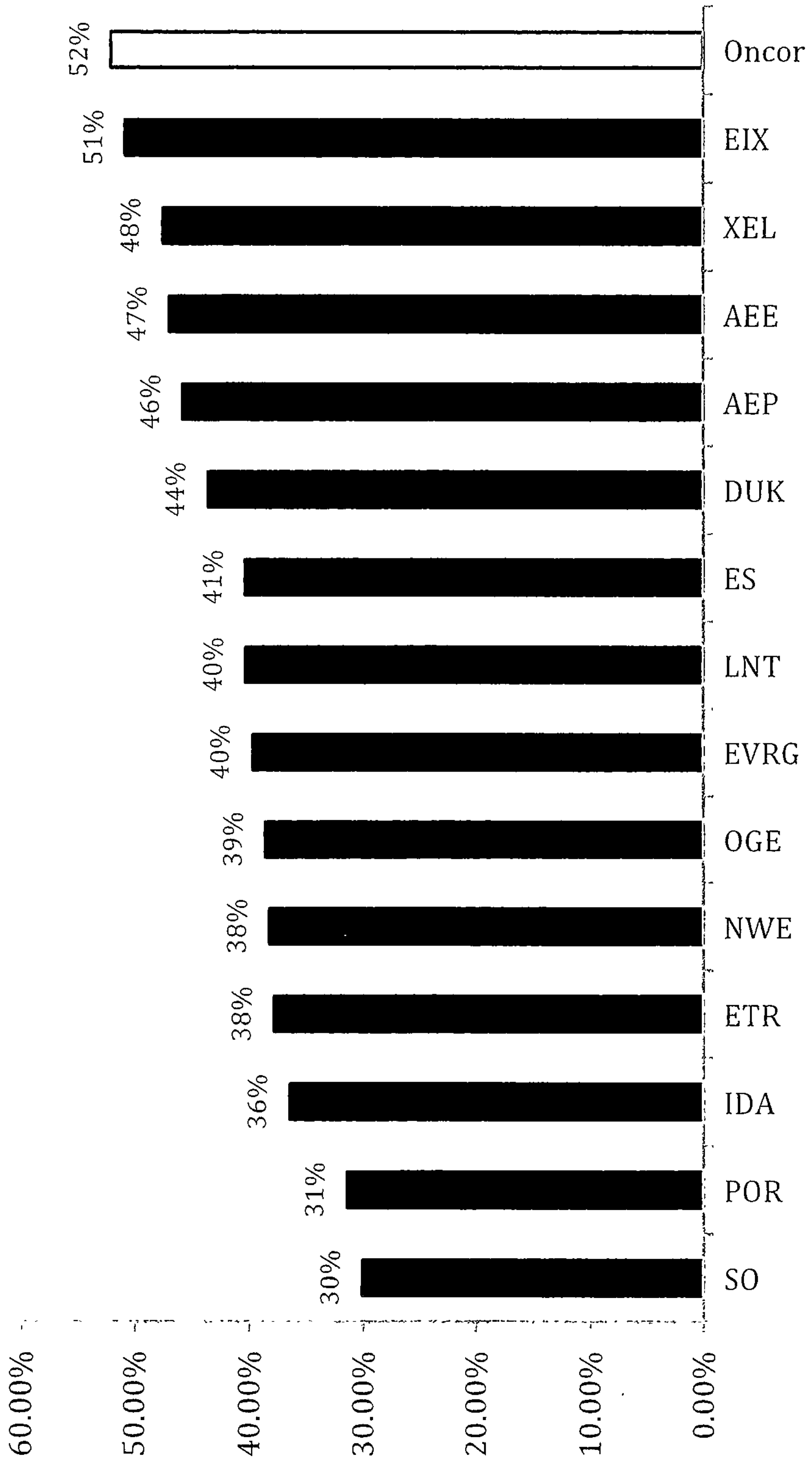
Oncor Electric Delivery Company LLC
Analysis of Moody's Long-Term Issuer Rating and Senior Secured Rating of the Utility Proxy Group

Company	Ticker	Moody's Long-Term Issuer Rating	Moody's Senior Secured Rating	Numerical Weighting (1)		Difference
Interstate Power and Light Company	LNT	Baa1	NA	8.00	NR	
Wisconsin Power and Light Company	LNT	A3	NA	7.00	NR	
Ameren Illinois Company	AEE	A3	A1	7.00	5.00	2
Illinois Power Company	AEE	NA	NA	NR	NR	
Union Electric Company	AEE	Baa1	A2	8.00	6.00	2
Central Illinois Light Company	AEE	NA	A1	NR	5.00	
AEP Texas Central	AEP	Baa2	NA	9.00	NR	
AEP Texas Inc.	AEP	Baa2	NA	9.00	NR	
AEP Texas North	AEP	WR	WR	NR	NR	
Appalachian Power Company	AEP	Baa1	NA	8.00	NR	
Columbus Southern Power Company	AEP	A3	NA	7.00	NR	
Indiana Michigan Power Company	AEP	A3	NA	7.00	NR	
Kentucky Power Company	AEP	Baa3	NA	10.00	NR	
Ohio Power Company	AEP	A3	NA	7.00	NR	
Public Service Company of Oklahoma	AEP	Baa1	NA	8.00	NR	
Southwestern Electric Power Company	AEP	Baa2	NA	9.00	NR	
Wheeling Power Company	AEP	NA	NA	NR	NR	
Duke Energy Carolinas, LLC	DUK	A2	Aa3	6.00	4.00	2
Duke Energy Florida, LLC	DUK	A3	A1	7.00	5.00	2
Duke Energy Indiana, LLC	DUK	A2	Aa3	6.00	4.00	2
Duke Energy Kentucky, Inc	DUK	Baa1	NA	8.00	NR	
Duke Energy Ohio, Inc	DUK	Baa1	A2	8.00	6.00	2
Duke Energy Progress, LLC	DUK	A2	Aa3	6.00	4.00	2
Florida Progress Corporation	DUK	NA	NA	NR	NR	
Piedmont Natural Gas Company, Inc.	DUK	A3	NA	7.00	NR	
Progress Energy, Inc.	DUK	Baa1	NA	8.00	NR	
Southern California Edison Company	EIX	Baa2	A3	9.00	7.00	2
Entergy Arkansas, LLC	ETR	Baa1	A2	8.00	6.00	2
Entergy Gulf States Louisiana, LLC	ETR		A2	NR	6.00	
Entergy Louisiana, LLC	ETR	Baa1	A2	8.00	6.00	2
Entergy Mississippi, LLC	ETR	Baa1	A2	8.00	6.00	2
Entergy New Orleans, LLC	ETR	Ba1	Baa2	11.00	9.00	2
Entergy Texas, Inc	ETR	Baa2	A3	9.00	7.00	2
Evergy Kansas Central, Inc.	EVRG	Baa1	A2	8.00	6.00	2
Evergy Kansas South, Inc	EVRG	Baa1	A2	8.00	6.00	2
Evergy Metro, Inc	EVRG	Baa1	A2	8.00	6.00	2
Evergy Missouri West, Inc	EVRG	Baa2	A3	9.00	7.00	2
Aquarion Water Company of Connecticut, Inc.	ES	A3	NA	7.00	NR	
Aquarion Company	ES	Baa2	NA	9.00	NR	
The Connecticut Light and Power Company	ES	A3	A1	7.00	5.00	2
Eversource Gas Company of Massachusetts	ES	Baa2	NA	9.00	NR	
Eversource Gas Company of MA	ES	NA	NA	NR	NR	
NSTAR Electric Company	ES	A1	NA	5.00	NR	
NSTAR Gas Company	ES	NA	NA	NR	NR	
Public Service Company of New Hampshire	ES	A3	A1	7.00	5.00	2
Yankee Gas Services Company	ES	Baa1	A2	8.00	6.00	2
Idaho Power Company	IDA	A3	A1	7.00	5.00	2
NorthWestern Corporation	NWE	Baa2	A3	9.00	7.00	2
Oklahoma Gas and Electric Company	OGE	A3	WR	7.00	NR	
Portland General Electric Company	POR	A3	A1	7.00	5.00	2
Alabama Power Company	SO	A1	WR	5.00	NR	
Atlanta Gas Light Company	SO	WR	WR	NR	NR	
Georgia Power Company	SO	Baa1	WR	8.00	NR	
Mississippi Power Company	SO	Baa1	WR	8.00	NR	
Southern Company Gas	SO	WR	WR	NR	NR	
Southern Company Services, Inc	SO	WR	NA	NR	NR	
Northern States Power Company - MN	XEL	A2	Aa3	6.00	4.00	2
Northern States Power Company - WI	XEL	A2	Aa3	6.00	4.00	2
Public Service Company of Colorado	XEL	A3	A1	7.00	5.00	2
Southwestern Public Service Company	XEL	Baa2	A3	9.00	7.00	2

Notes:
(1) Page 6 of Exhibit DWD-4.

Source:
S&P Capital IQ

Oncor Electric Delivery Company LLC
Comparison of Projected Capital Expenditures Relative to Net Plant



Sources of Information: *Value Line Investment Survey*
Oncor 2021 SEC Form 10-K

2022 RATE CASE
ONCOR ELECTRIC DELIVERY COMPANY LLC
VOLUMINOUS WORKPAPERS FOR
THE DIRECT TESTIMONY OF
DYLAN W. D'ASCENDIS

The information is voluminous and is being provided in electronic format in compliance with RFP General Instruction No. 15. Additionally, in accordance with RFP General Instruction No. 12(c), below is a list of the files that are being provided electronically:

<u>Testimony Workpapers/Voluminous/D'Ascendis</u>

D'Ascendis Exhibits Voluminous WPs.xlsm
D'Ascendis Vol WPs 19-24.pdf
D'Ascendis-Direct-WPs-Cover.doc

INDEX TO THE DIRECT TESTIMONY

OF ALAN S. TAPER, WITNESS FOR

<u>ONCOR ELECTRIC DELIVERY COMPANY LLC</u>

Exhibit AST-8	Actuarial Valuation Report for 2022 Rate Case Oncor Supplemental Retirement Plan: 2021 Fiscal Year (Confidential)
Exhibit AST-9	Actuarial Valuation Report for 2022 Rate Case Oncor Retiree Welfare Plan: 2021 Fiscal Year (Confidential)
Exhibit AST-10	Actuarial Valuation Report for 2022 Rate Case Shared Retiree Welfare Plan: 2021 Fiscal Year (Confidential)

DIRECT TESTIMONY OF ALAN S. TAPER

I. POSITION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Alan S. Taper. My business address is 5005 LBJ Freeway, Suite 1400, Dallas, Texas 75244.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a consulting actuary and Senior Partner with Aon plc. ("Aon"). I have more than 30 years of experience in providing consulting services to clients on employee benefit matters.

Q. PLEASE DESCRIBE AON.

A. Aon is a leading global professional services firm providing a broad range of risk, retirement, and health solutions. With offices in almost 120 countries, Aon employs approximately 50,000 people.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND.

A. I earned a Bachelor of Business Administration degree with high honors with a concentration in Actuarial Science from the University of Texas at Austin.

Q. ARE YOU A CREDENTIALED ACTUARY?

A. Yes, I am a Fellow of the Society of Actuaries, a Member of the American Academy of Actuaries, a Fellow of the Conference of Consulting Actuaries, and an Enrolled Actuary under the Employee Retirement Income Security Act of 1974 ("ERISA").

Q. WHAT DOES IT TAKE TO BECOME A FELLOW OF THE SOCIETY OF ACTUARIES AND AN ENROLLED ACTUARY?

A. An actuary must pass a series of exams administered by the Society of Actuaries to become a Fellow. In addition, the Joint Board for Enrollment of Actuaries administers a separate series of exams to become an Enrolled Actuary. When I took them, the actuarial exams were offered once or twice a year. A candidate normally takes one exam at each session so it typically takes many years to pass all of the exams. There are also continuing education requirements for an actuary to maintain accreditation.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I have been retained to provide expert testimony on behalf of Oncor Electric Delivery Company LLC ("Oncor" or the "Company") on the subject of pension benefits and other postretirement benefits. Oncor is a client of Aon to which I provide actuarial and consulting services with respect to pension and other postretirement benefits.

Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY ON BEHALF OF ONCOR TO THE PUBLIC UTILITY COMMISSION OF TEXAS ("COMMISSION")?

A. Yes. I provided direct testimony on the subject of pension benefits and other postretirement benefits on behalf of Oncor in Commission Docket Nos. 38929 and 46957.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS PROCEEDING?

A. The purpose of my direct testimony is to provide an overview of pension and postretirement benefit accounting and to discuss how these costs have been determined for rate making purposes. I will also testify to the reasonableness and necessity of the test year costs, as adjusted for known and measurable changes, for the pension and other postretirement benefit plans for which Oncor is seeking recovery in this proceeding.

My testimony, the attached exhibits, and all associated workpapers were prepared by me or under my direction, supervision, or control, and are true and correct.

III. OVERVIEW OF ACCOUNTING AND REGULATORY RULES FOR PENSIONS

Q. WHAT ARE DEFINED BENEFIT PENSIONS?

A. Accounting Standards Codification 715-30 – Compensation Defined

Benefit Plans – Pensions ("ASC 715-30"), originally issued as Statement of Financial Accounting Standards No. 87 ("FAS 87"), contains the following definition of a defined benefit pension plan:

> A pension plan that defines an amount of pension benefit to be provided, usually as a function of one or more factors such as age, years of service, or compensation. Any pension plan that is not a defined contribution pension plan is, for purposes of Subtopic 715-30, a defined benefit pension plan.

Q. IN WHICH DEFINED BENEFIT PENSION PLANS DOES ONCOR CURRENTLY PARTICIPATE?

A. Oncor currently participates in three defined benefit pension plans – the Oncor Retirement Plan, the Oncor Supplemental Retirement Plan, and the Vistra Retirement Plan. Oncor is the ERISA plan sponsor, as that term is defined in federal law, of the Oncor Retirement Plan and the Oncor Supplemental Retirement Plan. Oncor is also responsible for certain obligations related to the Vistra Retirement Plan, of which Vistra Corp. ("Vistra") is the ERISA plan sponsor.

Q. WHY DOES ONCOR HAVE RESPONSIBILITY FOR OBLIGATIONS RELATED TO THE VISTRA RETIREMENT PLAN?

A. As described later in my testimony, Vistra owns former affiliates of Oncor, and certain participants of the Vistra Retirement Plan had service with the predecessor integrated electric utility company before its unbundling under Public Utility Regulatory Act ("PURA") Chapter 39 ("unbundling"). Pension benefits for these plan participants attributable to their regulated service are Oncor's responsibility.

Q. HOW DO THE PENSION PLANS DETERMINE BENEFITS FOR PARTICIPANTS?

A. A participant in the Oncor Retirement Plan or Vistra Retirement Plan will receive benefits under one of two components – a final average pay ("FAP") component or a cash balance component. The FAP benefit defines an individual's pension as a percentage of the highest three-year average pay at retirement for each year of service. The cash balance component provides a hypothetical account for each participant, much like a savings plan. Each year additional credits based on pay and service are added to the account for active employees. In addition, interest credits are added to the account using a rate defined in the plan for all cash balance participants. Generally, new hires and rehires since December 31, 2000, and prior hires who made a one-time election as of that date, will receive the Cash Balance benefit; all other employees will receive the FAP benefit.

Q. WHAT IS THE DIFFERENCE BETWEEN A QUALIFIED AND NON-QUALIFIED PENSION PLAN?

A. A qualified pension plan meets all the requirements of Section 401(a) of the Internal Revenue Code of 1986, as amended (the "Code"), and is subject to the provisions of ERISA. By meeting all of the Code requirements, a qualified pension plan is granted certain favorable tax treatment. Pension plans that are exclusively for company executives or higher paid individuals are not qualified under the Code and are therefore limited as to the preferred tax treatment. Non-qualified pension plans generally make up for benefits that higher paid employees would lose due to benefit limits placed on qualified plans under the Code. Both qualified and non-qualified plans must be accounted for under ASC 715-30. The Oncor Retirement Plan and the Vistra Retirement Plan are qualified plans. The Oncor Supplemental Retirement Plan is a non-qualified plan. The qualified plans account for about 97% of Oncor's total projected benefit obligation.

Q. WHAT ARE PENSION BENEFIT OBLIGATIONS?

A. A pension benefit obligation measures the liability for which the ERISA plan sponsor is responsible as a result of future pension benefits that the plan is expected to pay.

Q. UNDER WHAT AUTHORITY ARE PENSION BENEFIT OBLIGATIONS

DETERMINED?

A. Pension benefit obligations are defined under generally accepted accounting principles ("GAAP"). In the United States, the Securities and Exchange Commission ("SEC") has authorized the Financial Accounting Standards Board ("FASB") to establish and publish accounting standards. FAS 87 originally established such accounting guidance for pension plans in coordination with the American Academy of Actuaries. The provisions of FAS 87 are now set forth in ASC 715.

Q. WHAT DIFFERENT MEASURES OF PENSION BENEFIT OBLIGATIONS WILL BE REFERRED TO IN THIS TESTIMONY?

A. There are two types of pension benefit obligations that will be discussed:

- Projected benefit obligation ("PBO") is the actuarial present value of benefits, based on current service, that are expected to be paid to an individual from the plan. This measure includes projected future pay growth, but only reflects benefit service that has been earned as of the valuation date.
- Service cost is the actuarial present value of benefits earned during the current measurement period on a PBO basis.

Q. WHAT INFORMATION IS NEEDED FOR THESE CALCULATIONS?

A. There are three elements of information required to determine the pension benefit obligations:

- Census Data: Census data containing applicable demographic information for each current and former employee who, as of the data snapshot date, is a participant in the pension plan. For current employees, this information includes each individual's age, gender, service period, pay information, subsidiary identification code, and cash balance account value (if applicable). For former employees who are owed a future benefit or are currently receiving benefits, this information includes the age, gender, subsidiary identification code, amount of benefit and form of benefit payment (if currently receiving benefits), cash balance account value (if applicable), and beneficiary information (if applicable).

- Plan Provisions: The legal plan documents contain the provisions of the plans. These provisions are the basis upon which the benefit obligations are determined.
- Assumptions: Oncor and Vistra, based on the recommendations of their actuaries and investment consultants, make certain assumptions to model the impact of future events for their respective plans. ASC 715-30 requires that "each significant assumption used shall reflect the best estimate solely with respect to that individual assumption." These assumptions are reviewed by Oncor's and Vistra's independent auditors, respectively, for reasonableness.

Q. WHAT ARE THE KEY ASSUMPTIONS USED?

A. The following are key assumptions used to determine pension benefit obligations and pension cost:

- Retirement Age: An assumption of when a participant will retire is necessary to estimate the timing of payments to each individual.
- Turnover: Because participants may terminate employment prior to retirement (either vested or non-vested), an assumption for terminations prior to retirement is necessary.
- Life Expectancy: Because pension benefits are often payable during a retiree's and beneficiary's lifetime, a mortality table assumption is used to model life expectancy for each eligible retiree (and beneficiary, if applicable).
- Discount Rate: Because pension benefits are paid in the future, ASC 715-30 requires the discounting of projected cash flows in recognition of the time value of money. The applicable discount rate should reflect settlement rates, which may be approximated by the rate of return on high-quality, fixed-income investments

currently available whose cash flows match the timing of the amount of the expected future benefit payments.

- Expected Return on Plan Assets: Because the annual pension cost is offset by the anticipated return on plan assets, ASC 715-30 calls for an assumed rate of return on plan assets for future years. This rate should be reasonable based on the actual and targeted investment mix for the pension plan assets.
- Pay Increase Rate: The PBO and service cost reflect a projection of pay increases into the future. The assumed pay increase rates are determined by Oncor and Vistra, respectively, with input from their actuaries, and are intended to reflect reasonable future expectations.
- Cash Balance Interest Crediting Rate: The cash balance interest crediting rate is updated annually based on the yield on 30-year Treasury securities. Because the interest crediting rates for future years are unknown, a reasonable estimate of future rates is required based on the current rate and expectations of the future.
- Form of Benefit Payment: An assumption about the form of payment that each plan participant will elect upon retirement is required. For example, cash balance participants can elect a lump sum distribution of their benefits in lieu of a lifetime annuity.

Q. WHAT ARE THE COMPONENTS OF NET PERIODIC PENSION COST UNDER GAAP, AND HOW ARE THEY CALCULATED?

A. ASC 715-30 lists the six components of net periodic pension cost as follows:

- Service Cost: The service cost is the actuarial present value of benefits earned during the current measurement period on a PBO basis. The assumptions and methodology are similar to the determination of the PBO, except that the service cost is the accrual for the measurement period rather than the accumulation of prior accruals.

- Interest Cost: The interest cost is the increase in the PBO due to the shortening of the discount period resulting from the passage of time and reflecting the current discount rate.
- Expected Return on Plan Assets: The expected return on plan assets represents the expected investment return, net of administrative and investment expenses, adjusted to smooth asset fluctuations under ASC 715-30.
- Amortization of Unrecognized Prior Service Cost or Credit: ASC 715-30 allows for the amortization of any change in PBO resulting from plan changes that impact benefits earned in prior periods. A change that increases the PBO is called a prior service cost. Conversely, a change that decreases the PBO is called a prior service credit. In either case, the amortization period is generally the expected remaining working period for active employees expected to receive benefits.
- Amortization of Unrecognized Gains or Losses: Gains and losses are defined as changes in the PBO and plan assets due to plan experience that differs from assumptions, as well as any changes to plan assumptions. ASC 715-30 does not require immediate recognition of these changes. Rather, gains or losses may be deferred and recognized in pension cost to the extent that the total amount exceeds a "corridor" specified in ASC 715-30. Amounts outside of this corridor, which is equal to 10% of the greater of the PBO and the applicable plan asset value, are generally recognized over the expected remaining working period for active employees expected to receive benefits.
- Amortization of Unrecognized Transition Obligation or Asset: The difference between the PBO and plan assets compared with the amount recognized on a company's balance sheet when FAS 87

was first adopted was established as the unrecognized transition obligation or asset. That amount was then generally amortized over the average remaining working period of the active employees expected to receive benefits at that time. There is no more unrecognized transition obligation or asset remaining for any of the pension plans in which Oncor participates.

Q. HOW IS THE PENSION COST RELEVANT UNDER PURA § 36.065?

A. PURA § 36.065 states that a regulated utility shall include in the rate determination appropriate pension benefit costs under GAAP. Further, for those employees who were employed by the predecessor integrated electric utility before its unbundling, benefits attributable to service prior to unbundling shall be included in the regulated benefit costs, irrespective of the business activity performed by such employees after the date of unbundling.

Q. WHICH COMPANIES OR ENTITIES ARE TREATED AS HAVING BEEN PART OF THE PREDECESSOR INTEGRATED ELECTRIC UTILITY BEFORE ITS UNBUNDLING?

A. Oncor, the power generator Luminant (previously known as TXU Power and TXU Wholesale), and retail electric provider TXU Energy were part of the predecessor integrated utility prior to unbundling. Vistra now owns Luminant and TXU Energy, but Oncor is not affiliated with Vistra, Luminant, or TXU Energy. In addition, employees of a former Oncor affiliate, EFH Corporate Services (previously known as TXU Business Services), provided service to the predecessor integrated electric utility prior to unbundling.

IV. <u>OVERVIEW OF ACCOUNTING AND REGULATORY RULES FOR POSTRETIREMENT BENEFITS</u>

Q. WHAT ARE "OPEBs"?

A. The acronym "OPEB" refers to other post-employment benefits. These benefits are also commonly referred to as postretirement benefits other than pensions. For Oncor's employees, OPEBs include health care coverage – medical, prescription drugs, and dental – as well as life insurance coverage provided to retirees and their eligible dependents.

Q. IN WHICH POSTRETIREMENT BENEFIT PLANS DOES ONCOR CURRENTLY PARTICIPATE?

A. Oncor currently participates in two postretirement benefit plans – the Oncor Retiree Welfare Plan and the Shared Retiree Welfare Plan. Oncor is the ERISA plan sponsor of both plans. The Oncor Retiree Welfare Plan covers eligible current and future retirees whose employment services were assigned only to Oncor or its regulated predecessors (including the predecessor regulated electric utility prior to its unbundling). The Shared Retiree Welfare Plan, established as of January 1, 2018, covers eligible current and future retirees who were employed by the predecessor integrated electric utility prior to its unbundling and whose employment services were assigned to both Oncor or its regulated predecessors (including the predecessor regulated electric utility company prior to unbundling) *and* the non-regulated affiliate businesses. Participants in the Shared Retiree Welfare Plan are known as "Shared Retirees."

Q. WHY DID ONCOR ESTABLISH THE SHARED RETIREE WELFARE PLAN?

A. Until December 31, 2017, all eligible current and future retirees were covered by the Oncor Retiree Welfare Plan. Because the non-regulated businesses were spun off to a separate company now known as Vistra (which is no longer affiliated with Oncor), Shared Retirees could no longer participate in the current Oncor Retiree Welfare Plan. Therefore, Oncor established the Shared Retiree Welfare Plan. Postretirement benefit coverage for Shared Retirees was transferred to the Shared Retiree Welfare Plan as of January 1, 2018. The Shared Retiree Welfare Plan is further described in the direct testimony of Company witnesses Ms. Angela Guillory and Mr. Kevin Fease.

Q. DID THE TRANSFER OF POSTRETIREMENT BENEFIT COVERAGE FOR SHARED RETIREES FROM THE ONCOR RETIREE WELFARE PLAN TO THE SHARED RETIREE WELFARE PLAN HAVE ANY IMPACT ON BENEFITS FOR PLAN PARTICIPANTS?

A. The Oncor Retiree Welfare Plan is self-funded for health care coverage, which is a common practice for larger employers like Oncor. However, the Shared Retiree Welfare Plan is fully insured in order to comply with Department of Labor and state insurance requirements related to multiple-employer welfare arrangements covering unrelated businesses like Oncor and Vistra. While the fully insured coverage of the Shared Retiree Welfare Plan is very similar to the Oncor Retiree Welfare Plan coverage, Oncor was unable to exactly replicate the coverage. As a result, Oncor's OPEB benefit obligation for Shared Retirees was reduced at the time of the transfer.

Q. IS ONCOR RESPONSIBLE FOR THE ENTIRE SHARED RETIREE WELFARE PLAN?

A. No. Oncor is only responsible for Shared Retiree Welfare Plan benefit obligations based on a Shared Retiree's percentage of career service attributable to regulated utility service. Vistra is responsible for Shared Retiree Welfare Plan benefit obligations based on a Shared Retiree's percentage of career service attributable to non-regulated service.

Q. HOW DO THE POSTRETIREMENT BENEFIT PLANS DETERMINE BENEFITS FOR PARTICIPANTS?

A. The Oncor Retiree Welfare Plan and Shared Retiree Welfare Plan each have two components – health care benefits and life insurance benefits. The health care portion provides retirees with access to medical, prescription drug, and dental coverage. The portion of the medical and prescription drug cost paid by retirees is dependent on when they were hired, when they retired, and their age and years of service at retirement. The cost of dental coverage is fully paid by retirees. The life insurance benefits depend on the plan under which the retiree is covered and are either a specified dollar amount or are based on salary with a cost sharing arrangement.

Q. WHAT ARE POSTRETIREMENT BENEFIT OBLIGATIONS?

A. A postretirement benefit obligation measures the liability for which the ERISA plan sponsor is responsible as a result of future postretirement benefits other than pensions that the plan is expected to pay.

Q. UNDER WHAT AUTHORITY ARE POSTRETIREMENT BENEFIT OBLIGATIONS DETERMINED?

A. Postretirement benefit obligations are defined under GAAP. In the United States, the SEC has authorized the FASB to establish and publish accounting standards. Accounting Standards Codification ASC 715-60 – Other Postretirement Benefit Plans ("ASC 715-60"), originally issued as Statement of Financial Accounting Standards No. 106 ("FAS 106"), establishes such accounting guidance for other postretirement benefit plans in coordination with the American Academy of Actuaries.

Q. WHAT DIFFERENT MEASURES OF POSTRETIREMENT BENEFIT OBLIGATIONS WILL BE REFERRED TO IN THIS TESTIMONY RELATED TO THE ONCOR RETIREE WELFARE PLAN?

A. There are three types of postretirement benefit obligations that will be discussed:

- Expected postretirement benefit obligation ("EPBO") is the actuarial present value of the company-paid portion of all benefits expected to be paid to an individual and any covered dependents from the plan – including projected future costs.
- Accumulated postretirement benefit obligation ("APBO") represents the portion of the EPBO that is attributable to past service. The APBO is determined by multiplying the EPBO by the ratio of (a) each person's service as of the valuation date, over (b) each person's service projected to the date he or she is fully eligible for

retiree benefit coverage.

- Service cost is the actuarial present value of benefits earned during the current measurement period on an EPBO basis. The service cost is determined by multiplying the EPBO by the ratio of (a) the measurement period, over (b) each person's service projected to the date he or she is fully eligible for retiree benefit coverage.

Q. WHAT INFORMATION IS NEEDED TO CALCULATE POSTRETIREMENT BENEFIT OBLIGATIONS?

A. There are three elements of information required to determine the postretirement benefit obligations:

- Census Data: Census data containing applicable demographic information for each current employee and retiree who, as of the data snapshot date, is a participant in the postretirement benefit plan. For current employees, this information includes each individual's age, gender, service period, subsidiary identification code, and pay information. For retirees, this information includes the age, gender, subsidiary identification code, health plan tier (level of coverage), cost sharing level, beneficiary information (if applicable) and life insurance coverage.
- Plan Provisions: A plan description and annual enrollment materials describe the provisions of the plans. These provisions are the basis upon which the benefit obligations are determined.
- Assumptions: Oncor and Vistra, based on the recommendations of their actuaries and investment consultants, make certain assumptions to model the impact of future events. ASC 715-60 requires the use of "explicit assumptions, each of which individually represents the best estimate of a particular future event, to measure the expected postretirement benefit obligation." These assumptions are reviewed by Oncor's and Vistra's independent auditors for reasonableness.

Q. WHAT ARE THE KEY ASSUMPTIONS USED?

A. The following are key assumptions used to determine postretirement benefit obligations and postretirement benefit cost:

- Retirement Age: An assumption of when a participant will retire is necessary to estimate the value of benefits to each individual.
- Turnover: Because OPEBs are generally not paid to participants who terminate employment prior to retirement, an assumption for terminations prior to retirement is necessary.
- Life Expectancy: Because benefits are often payable during a retiree's and dependent's lifetime, a mortality table assumption is used to model life expectancy for each eligible retiree and dependent.
- Participation: Because postretirement benefit coverage is not mandatory, an assumption to model the percentage of retirees and dependents that will elect future coverage is necessary.
- Health Care Cost: An assumption representing the cost of health care is needed to model the current year cost as well as the rate at which costs will increase in the future.
- Discount Rate: Because postretirement benefits are paid in the future, ASC 715-60 requires the discounting of projected cash flows in recognition of the time value of money. The applicable discount rate should reflect settlement rates, which may be approximated by the rate of return on high-quality fixed-income investments currently available whose cash flows match the timing of the amount of the expected future benefit payments.
- Expected Return on Plan Assets: Because the annual postretirement benefit cost is offset by the anticipated return on plan assets, ASC 715-60 calls for an assumed rate of return on plan assets for future years. This rate should be reasonable based on the actual and targeted investment mix for the plan assets.

Q. WHAT ARE THE COMPONENTS OF NET PERIODIC POSTRETIREMENT BENEFIT COST AND HOW ARE THEY CALCULATED?

A. ASC 715-60 lists the six components of net periodic postretirement benefit cost as follows:

- Service Cost: The service cost is the actuarial present value of benefits earned during the current measurement period on an EPBO basis. The assumptions and methodology are similar to the determination of the APBO, except that the service cost is the accrual for the measurement period rather than the accumulation of prior accruals.
- Interest Cost: The interest cost is the increase in the APBO due to the shortening of the discount period resulting from the passage of time and reflecting the current discount rate.
- Expected Return on Plan Assets: The expected return on plan assets represents the expected investment return, net of investment expenses, on plan assets under ASC 715-60.
- Amortization of Unrecognized Prior Service Cost or Credit: ASC 715-60 allows for the amortization of any change in APBO resulting from plan changes that impact benefits earned in prior periods. A change that increases the APBO is called a prior service cost. Conversely, a change that decreases the APBO is called a prior service credit. In either case, the amortization period is generally the expected remaining working period for active employees until full eligibility for benefits.
- Amortization of Unrecognized Gains or Losses: Gains and losses are defined as changes in the APBO and plan assets due to plan experience that differs from assumptions, as well as any changes to plan assumptions. ASC 715-60 does not require immediate recognition of these changes. Rather, gains or losses may be

deferred and recognized in postretirement benefit cost to the extent that the total amount exceeds a "corridor" specified in ASC 715-60. Amounts outside of this corridor, which is equal to 10% of the greater of the APBO and the applicable plan asset value, are generally recognized over the expected remaining working period for active employees expected to receive benefits.

- Amortization of Unrecognized Transition Obligation or Asset: The difference between the APBO and plan assets compared with the amount recognized on a company's balance sheet when FAS 106 was first adopted was established as the unrecognized transition obligation or asset. That amount was then generally amortized over the average remaining working period of the active employees expected to receive benefits at that time (or 20 years, if longer). There is no more unrecognized transition obligation or asset remaining for either of the postretirement benefit plans in which Oncor participates.

Q. HOW IS THE POSTRETIREMENT BENEFIT COST RELEVANT UNDER PURA § 36.065?

A. PURA § 36.065 states that a regulated utility shall include in the rate determination appropriate postretirement benefit costs under GAAP. Further, for those employees who were employed by the predecessor integrated electric utility before the utility's unbundling, benefits attributable to service prior to unbundling shall be included in the regulated benefit costs, irrespective of the business activity performed by such employees after the date of unbundling.

Q. WHICH COMPANIES OR ENTITIES ARE TREATED AS HAVING BEEN PART OF THE PREDECESSOR INTEGRATED ELECTRIC UTILITY BEFORE THE UNBUNDLING?

A. Oncor, Luminant (previously known as TXU Power and TXU Wholesale), and TXU Energy were part of the predecessor integrated utility prior to unbundling. In addition, employees of EFH Corporate Services (previously known as TXU Business Services) provided service to the predecessor integrated electric utility prior to unbundling.

V. ADJUSTED TEST YEAR COST

Q. DO YOUR ACTUARIAL STUDIES OF THE VARIOUS PLANS DISTINGUISH BETWEEN COSTS OF BENEFITS ASSOCIATED WITH HAVING PROVIDED REGULATED ELECTRIC SERVICE AS CONTEMPLATED BY PURA § 36.065 AND THOSE NOT ASSOCIATED WITH HAVING PROVIDED REGULATED ELECTRIC SERVICE?

A. Yes. Costs associated with providing regulated electric service are labeled "Recoverable" in all of my exhibits, while costs not associated with providing regulated electric service are labeled "Nonrecoverable." Nonrecoverable costs are not included in test year cost because they are not associated with regulated service either prior to or after the date of unbundling.

Q. HOW WAS THE GAAP NET PERIODIC PENSION COST DETERMINED FOR THE 2021 TEST YEAR AND THE SUBSEQUENT 2022 FISCAL YEAR?

A. Aon, on behalf of Oncor and Vistra, performed six actuarial studies regarding net periodic pension costs in accordance with GAAP guidelines as described earlier in Section III of my direct testimony for the test year and the subsequent fiscal year. The results of these studies for the fiscal year ending December 31, 2022, are attached as Exhibits AST-1, AST-2 and AST-3 to my direct testimony. The results of these studies for the test year ending December 31, 2021, are attached as Exhibits AST-6, AST-7 and AST-8 to my direct testimony.

Q. DOES THE GAAP NET PERIODIC PENSION COST DETERMINED FOR THE 2021 TEST YEAR REFLECT THE MOST APPROPRIATE ON-GOING LEVEL OF PENSION COSTS?

A. No. GAAP requires that pension costs be measured each fiscal year based on benefit obligations and plan assets as of the last day of the prior fiscal year. Therefore, the GAAP pension cost for fiscal year 2022, reflecting known and measurable changes during 2021 and shown in the fiscal year 2022 actuarial studies, is a better measure of the on-going level of pension costs.

Q. FROM YOUR ANALYSIS, WHAT IS THE APPROPRIATE GAAP PENSION COST FOR ONCOR BASED ON THE 2022 ACTUARIAL STUDIES?

A. As set forth in Exhibit AST-1, the GAAP recoverable pension cost determined for Oncor under the Oncor Retirement Plan for fiscal year 2022 is $44,958,584. As set forth in Exhibit AST-2, the GAAP recoverable pension cost determined for Oncor related to the Vistra Retirement Plan for fiscal year 2022 is $(3,251,157). As set forth in Exhibit AST-3, the GAAP recoverable pension cost for Oncor under the Oncor Supplemental Retirement Plan for fiscal year 2022 is $6,309,066. I have provided this information to Company witness Mr. W. Alan Ledbetter for inclusion in rates. These costs are reasonable and necessary.

Q. WHY IS THE VISTRA RETIREMENT PLAN GAAP RECOVERABLE PENSION COST NEGATIVE FOR FISCAL YEAR 2022?

A. As described earlier in my testimony, the GAAP pension cost for a fiscal year is made up of several components. For fiscal year 2022, the expected return on recoverable assets for the Vistra Retirement Plan exceeds the sum of the recoverable service cost, interest cost and amortization amounts. As a result, the net GAAP recoverable pension cost for fiscal year 2022 is negative.

Q. DID THE GAAP RECOVERABLE PENSION COST FOR FISCAL YEAR 2022 CHANGE FROM THE COMPARABLE AMOUNT FOR FISCAL YEAR 2017 DESCRIBED IN YOUR PRIOR DIRECT TESTIMONY IN COMMISSION DOCKET NO. 46957, ONCOR'S LAST BASE RATE CASE?

A. Yes. The total GAAP recoverable pension cost for fiscal year 2022 shown above is $48,016,493. This compares with $80,911,733 in total GAAP recoverable pension cost for fiscal year 2017 included in my prior direct testimony in Docket No. 46957.

Q. WHY DID THE GAAP RECOVERABLE PENSION COST DECREASE FROM FISCAL YEAR 2017 TO FISCAL YEAR 2022?

A. As described earlier in Section III of my testimony, the GAAP pension cost for a fiscal year has several components. The service cost represents the cost of benefits earned by employees during the current fiscal year. The total of the interest cost, expected return on plan assets, and amortization amounts for the year represents the portion of the unfunded PBO as of the end of the prior fiscal year that is recognized during the current fiscal year. Because the GAAP pension cost is measured annually, these amounts change every fiscal year. To simplify the discussion below, monetary amounts are rounded to the nearest tenth of one million dollars.

Q. HOW DID THE RECOVERABLE SERVICE COST COMPONENT CHANGE FROM FISCAL YEAR 2017 TO FISCAL YEAR 2022?

A. From fiscal year 2017 to fiscal year 2022, the recoverable service cost increased by $7.3 million. The increase in service cost was primarily due to a decrease in discount rates used to calculate the service cost. Changes in discount rates are dictated by changes in market interest rates, which are outside of Oncor's control.

Q. HOW DID THE RECOVERABLE UNFUNDED PBO CHANGE FROM DECEMBER 31, 2016, TO DECEMBER 31, 2021?

A. The GAAP recoverable pension cost for fiscal year 2017 is based on the unfunded PBO as of December 31, 2016. Similarly, the GAAP recoverable pension cost for fiscal year 2022 is based on the unfunded PBO as of December 31, 2021. From December 31, 2016, to December 31, 2021, the recoverable unfunded PBO decreased by $256.0 million. The decrease is attributable to the following:

- The expected change in the unfunded PBO is equal to the difference between the interest cost on the PBO and the expected return on plan assets. The recoverable interest cost during the period exceeded the recoverable expected investment return by $5.7 million, increasing the unfunded PBO by this amount.
- The actual return on recoverable plan assets during the period exceeded the expected return on plan assets by $479.2 million. The favorable investment return reduced the unfunded PBO by this amount.
- Oncor contributed $374.9 million to the recoverable portion of the pension plans during the period. Contributions to the plans in excess of the service cost during the period reduced the unfunded PBO by $238.4 million.
- The unfunded PBO is impacted by the discount rates used to calculate the PBO. Because the discount rates were lower as of December 31, 2021, than as of December 31, 2016, the recoverable unfunded PBO increased by $417.0 million during the period. As with the service cost calculation, changes in discount rates are dictated by changes in market interest rates, which are outside of Oncor's control.
- The unfunded PBO is also impacted by actual plan demographic experience differing from expected based on the actuarial assumptions as well as changes in actuarial assumptions. The recoverable unfunded PBO increased by $38.9 million during the period due to these factors.

Q. HOW DID THE CHANGE IN RECOVERABLE UNFUNDED PBO IMPACT THE GAAP RECOVERABLE PENSION COST FROM FISCAL YEAR 2017 TO FISCAL YEAR 2022?

A. Based on the reduction in unfunded PBO of $256.0 million from December 31, 2016, to December 31, 2021, the total interest cost, expected return on plan assets, and amortization components of recoverable pension cost decreased by $40.2 million from fiscal year 2017 to fiscal year 2022.

Q. WHAT WAS THE NET CHANGE IN THE GAAP RECOVERABLE PENSION COST FROM FISCAL YEAR 2017 TO FISCAL YEAR 2022?

A. From fiscal year 2017 to fiscal year 2022, the recoverable service cost increased by $7.3 million and the total interest cost, expected return on plan assets, and amortization components of recoverable pension cost decreased by $40.2 million. The net impact is a decrease in GAAP recoverable pension cost of $32.9 million as the adverse impact of lower discount rates, other assumption updates, and unfavorable plan demographic experience was more than offset by strong investment performance and Oncor's plan contributions.

Q. DID ONCOR TAKE ANY PENSION RISK TRANSFER ACTIONS SINCE THE LAST RATE CASE IN 2017 TO SETTLE ANY OF ITS RECOVERABLE PENSION OBLIGATIONS?

A. Yes. In 2019, Oncor transferred $74.6 million of recoverable PBO and corresponding plan assets for 1,640 retirees and beneficiaries in pay status with recoverable service from the Oncor Retirement Plan to Pacific Life Insurance Company, a high-quality insurance carrier specializing in the pension annuity business. In 2020, Oncor offered one-time lump sum payments, in lieu of future pension annuities, to 3,771 former employees covered by the Oncor Retirement Plan who were not yet in pay status. Of the group included in the voluntary offer, 619 former employees with recoverable service accepted one-time payments, reducing recoverable PBO and corresponding plan assets by $28.8 million. In 2021, Oncor transferred $78.1 million of recoverable PBO and corresponding plan assets for another 880 retirees and beneficiaries in pay status with recoverable service from the Oncor Retirement Plan to Pacific Life Insurance Company.

Q. WHAT IMPACT DID THE 2019, 2020, AND 2021 PENSION RISK

TRANSFER TRANSACTIONS HAVE ON THE ONCOR RETIREMENT PLAN?

A. By taking these actions, Oncor reduced its plan administration burden and eliminated future premiums paid to the Pension Benefit Guarantee Corporation ("PBGC") related to the impacted plan participants. The recoverable PBGC premium savings during 2020 through 2022 attributable to the three transactions was $6.3 million, with additional annual savings expected in future years. In addition, the transactions reduced the size of the Oncor Retirement Plan subject to rate recovery by $181.5 million. A smaller plan carries less financial market risk and reduces the volatility of future GAAP recoverable pension cost.

Q. HOW WAS THE GAAP NET PERIODIC POSTRETIREMENT BENEFIT COST DETERMINED FOR THE 2021 TEST YEAR AND THE SUBSEQUENT 2022 FISCAL YEAR?

A. Aon, on behalf of Oncor and Vistra, performed four actuarial studies regarding net periodic postretirement benefit costs in accordance with GAAP guidelines as described earlier in Section IV for the test year and the subsequent fiscal year. The results of the studies for fiscal year ending December 31, 2022, are attached as Exhibits AST-4 and AST-5 to my direct testimony. The results of the studies for the test year ending December 31, 2021, are attached as Exhibits AST-9 and AST-10 to my direct testimony.

Q. DOES THE GAAP NET PERIODIC POSTRETIREMENT BENEFIT COST DETERMINED FOR THE 2021 TEST YEAR REFLECT THE MOST APPROPRIATE ON-GOING LEVEL OF POSTRETIREMENT BENEFIT COSTS?

A. No. GAAP requires that postretirement benefit costs be measured each fiscal year based on benefit obligations and plan assets as of the last day of the prior fiscal year. Therefore, the GAAP postretirement benefit cost for fiscal year 2022, reflecting known and measurable changes during

2021 and shown in the fiscal year 2022 actuarial studies, is a better measure of the on-going level of postretirement benefit costs.

Q. FROM YOUR ANALYSIS, WHAT IS THE APPROPRIATE GAAP POSTRETIREMENT BENEFIT COST FOR ONCOR BASED ON THE 2022 ACTUARIAL STUDIES?

A. As set forth in Exhibit AST-4, the GAAP recoverable postretirement benefit cost determined for Oncor under the Oncor Retiree Welfare Plan for fiscal year 2022 is $8,616,786. As set forth in Exhibit AST-5, the GAAP recoverable postretirement benefit cost determined for Oncor under the Shared Retiree Welfare Plan for fiscal year 2022 is $10,273,842. I have provided this information to Company witness Mr. W. Alan Ledbetter for inclusion in rates. These costs are reasonable and necessary.

Q. DID THE GAAP RECOVERABLE POSTRETIREMENT BENEFIT COST FOR FISCAL YEAR 2022 CHANGE FROM THE COMPARABLE AMOUNT FOR FISCAL YEAR 2017 DESCRIBED IN YOUR PRIOR DIRECT TESTIMONY IN COMMISSION DOCKET NO. 46957, ONCOR'S LAST BASE RATE CASE?

A. Yes. The total GAAP recoverable postretirement benefit cost for fiscal year 2022 shown above is $18,890,628. This compares with $56,906,188 in total GAAP recoverable postretirement cost for fiscal year 2017 included in my prior direct testimony in Docket No. 46957.

Q. WHY DID THE GAAP RECOVERABLE POSTRETIREMENT BENEFIT COST DECREASE FROM FISCAL YEAR 2017 TO FISCAL YEAR 2022?

A. As described earlier in Section IV of my direct testimony, the GAAP postretirement benefit cost for a fiscal year has several components. The service cost represents the cost of benefits earned by employees during the current fiscal year. The total of the interest cost, expected return on plan assets, and amortization amounts for the year represents the portion of the unfunded APBO as of the end of the prior fiscal year that is recognized during the current fiscal year. Because the GAAP postretirement benefit cost is measured annually, these amounts change every fiscal year. To simplify the discussion below, monetary amounts are rounded to the nearest tenth of one million dollars.

Q. HOW DID THE RECOVERABLE SERVICE COST COMPONENT CHANGE FROM FISCAL YEAR 2017 TO FISCAL YEAR 2022?

A. From fiscal year 2017 to fiscal year 2022, the recoverable service cost decreased by $2.7 million. The service cost increased due to a decrease in discount rates. Changes in discount rates are dictated by changes in market interest rates, which are outside of Oncor's control. However, that increase was more than offset by a decrease in service cost due to the normal operation of the plan resulting in fewer Oncor employees being eligible for future subsidized retiree medical coverage.

Q. HOW DID THE RECOVERABLE UNFUNDED APBO CHANGE FROM DECEMBER 31, 2016, TO DECEMBER 31, 2021?

A. The GAAP recoverable postretirement benefit cost for fiscal year 2017 is based on the unfunded APBO as of December 31, 2016. Similarly, the GAAP recoverable postretirement benefit cost for fiscal year 2022 is based on the unfunded PBO as of December 31, 2021. From December 31, 2016, to December 31, 2021, the recoverable unfunded APBO decreased by $258.4 million. The decrease is attributable to the following:

- The expected change in the unfunded APBO is equal to the difference between the interest cost on the APBO and the expected return on plan assets. The recoverable interest cost during the period exceeded the recoverable expected investment return by $151.7 million, increasing the unfunded APBO by this amount.
- The actual return on recoverable plan assets during the period exceeded the expected return on plan assets by $25.4 million. The favorable investment return reduced the unfunded APBO by this amount.
- Oncor contributed $176.0 million to the recoverable portion of the

postretirement benefit plans during the period. Contributions to the plans in excess of the service cost during the period, reduced the unfunded APBO by $144.8 million.

- The unfunded APBO is impacted by the discount rates used to calculate the APBO. Because the discount rates were lower as of December 31, 2021, than as of December 31, 2016, the recoverable unfunded APBO increased by $180.5 million during the period. As with the service cost calculation, changes in discount rates are dictated by changes in market interest rates, which are outside of Oncor's control.
- The adoption of fully-insured medical coverage for the Shared Retiree Welfare Plan resulted in a significant reduction in the plan's APBO. That reduction was partially offset by small improvements in other medical and life coverage during the period in the Oncor Retiree Welfare Plan. The net impact of these changes is a reduction in recoverable unfunded APBO of $75.3 million.
- Retiree health care costs increased at a slower rate than assumed during the period. As a result, the recoverable unfunded APBO decreased by $294.0 million.
- The unfunded APBO is also impacted by actual plan demographic experience differing from expected based on the actuarial assumptions as well as changes in actuarial assumptions. The recoverable unfunded APBO decreased by $51.1 million during the period due to these factors.

Q. HOW DID THE CHANGE IN RECOVERABLE UNFUNDED APBO IMPACT THE GAAP RECOVERABLE POSTRETIREMENT BENEFIT COST FROM FISCAL YEAR 2017 TO FISCAL YEAR 2022?

A. Based on the reduction in unfunded APBO of $258.4 million from December 31, 2016, to December 31, 2021, the total interest cost, expected return on plan assets, and amortization components of recoverable pension cost decreased by $35.3 million from fiscal year 2017 to fiscal year 2022.

Q. WHAT WAS THE NET CHANGE IN THE GAAP RECOVERABLE POSTRETIREMENT BENEFIT COST FROM FISCAL YEAR 2017 TO FISCAL YEAR 2022?

A. From fiscal year 2017 to fiscal year 2022, the recoverable service cost decreased by $2.7 million and the total interest cost, expected return on plan assets, and amortization components of recoverable postretirement benefit cost decreased by $35.3 million. The net impact is a decrease in GAAP recoverable postretirement benefit cost of $38.0 million as the expected increase in the unfunded APBO and adverse impact of lower discount rates were more than offset by Oncor's effective plan management, contributions made to the plans, favorable participant experience, and strong investment performance.

VI. CONCLUSION

Q. PLEASE SUMMARIZE YOUR DIRECT TESTIMONY.

A. The following summarizes my direct testimony:

- Pension and OPEB accounting is governed by GAAP and related regulatory provisions.
- Based on the actuarial valuations prepared by Aon in accordance with GAAP, as documented in Exhibits AST-1 through AST-5, Oncor's annual recoverable pension and OPEB costs for fiscal year 2022, reflecting known and measurable changes subsequent to the 2021 test year, are $66.9 million.
- Oncor's annual recoverable pension and OPEB costs for fiscal year 2022 are $70.9 million lower than the corresponding costs of $137.8 million for fiscal year 2017 as reflected in Commission Docket 46957, Oncor's last base rate case.
- The recoverable pension and OPEB costs calculated under GAAP and related regulatory provisions are reasonable and customary.

Q. WHAT ARE YOUR OVERALL CONCLUSIONS?

A. Based on applicable accounting rules, regulatory provisions, and actuarial reports, the Commission should allow Oncor recovery of its reasonable and necessary pension and OPEB costs as set forth in my testimony.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

AFFIDAVIT

STATE OF TEXAS §
§
COUNTY OF DALLAS §

BEFORE ME, the undersigned authority, on this day personally appeared Alan S. Taper, who, having been placed under oath by me, did depose as follows:

My name is Alan S. Taper. I am of legal age and a resident of the State of Texas. The foregoing testimony and exhibits offered by me are true and correct, and the opinions stated therein are accurate, true and correct.

Alan S. Taper

SUBSCRIBED AND SWORN TO BEFORE ME by the said Alan S. Taper this 15th day of April, 2022.

SAMANTHA L. ZIEGENFUSS
Notary Public, State of Texas
Comm. Expires 05-29-2023
Notary ID 13020392-9

Notary Public, State of Texas

EXHIBIT AST-1
EXHIBIT AST-2
EXHIBIT AST-3
EXHIBIT AST-4
EXHIBIT AST-5
EXHIBIT AST-6
EXHIBIT AST-7
EXHIBIT AST-8
EXHIBIT AST-9
EXHIBIT AST-10

The information is confidential and will be made available only after execution of a certification to be bound by the draft protective order set forth in Section VII of this Rate Filing Package or a protective order issued in this docket.

2022 RATE CASE
ONCOR ELECTRIC DELIVERY COMPANY LLC
WORKPAPERS FOR
THE DIRECT TESTIMONY OF
ALAN S. TAPER

Mr. Taper has no supporting workpapers for his direct testimony.

INDEX TO THE DIRECT TESTIMONY
OF MATTHEW A. TROXLE, WITNESS FOR
ONCOR ELECTRIC DELIVERY COMPANY LLC

DIRECT TESTIMONY OF MATTHEW A. TROXLE

I. <u>POSITION AND QUALIFICATIONS</u>

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND CURRENT EMPLOYMENT POSITION.

A. My name is Matthew A. Troxle. My business address is 1616 Woodall Rodgers, Dallas, Texas. I am the Director of Rates & Load Research for Oncor Electric Delivery Company LLC ("Oncor" or "Company").

Q. PLEASE DISCUSS YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL QUALIFICATIONS.

A. I graduated from Louisiana State University in 1995 with a Bachelor of Science degree in Business Administration Pre-Law. In 1997, I received the degree of Master of Science in Economics from Louisiana State University. I began my employment with the Louisiana Public Service Commission in 1997 as an Economist in the Economics and Rate Analysis Division. In 1999, I began employment with the Public Utility Commission of Texas ("Commission") as a Rate Analyst. In 2000, I was named Senior Rate Analyst, and in 2005, I was promoted to be the Director of Retail Market Oversight. In 2007, I became the Director of the newly formed Tariff and Rate Analysis group. In 2008, I began employment with CenterPoint Energy Service Company as a Manager of Gas Rates in the Regulatory and Government Affairs organization. In 2012, I was promoted to the Director of Rates position, and in 2015, I assumed the position of Director of Regulatory Affairs for Louisiana and Mississippi. In 2019, I joined Oncor in my current role as the Director of Rates & Load Research. In my current position, I am responsible for oversight of the rates and load research efforts of Oncor.

Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY BEFORE THE COMMISSION?

A. Yes. Please see my Exhibit MAT-1 for a list of the Commission proceedings in which I have provided testimony.

II. PURPOSE OF DIRECT TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS PROCEEDING?

A. The purpose of my direct testimony is to: (1) present the Oncor Rate Class Cost of Service Study in support of the Company's proposed Tariff for Retail Delivery Service ("Retail Tariff") and the rates included in the Tariff for Transmission Service ("Transmission Tariff"); (2) support the calculation of the proposed Retail Delivery Service rates and Discretionary Service charges; (3) support the proposed changes to the Company's Tariffs; (4) support the calculation of the proposed Network Transmission Service ("NTS") rate, the Wholesale Substation Service ("XFMR") rate, the Wholesale Distribution Line Service ("DLS") rate, Oncor Electric Delivery Company NTU LLC's ("Oncor NTU") Wholesale Distribution Substation Service ("WDSS") rate; and (5) sponsor the proposed Tariff for Retail Delivery Service, the proposed Tariff for Transmission Service for both Oncor and Oncor NTU, and Rate Filing Package ("RFP") Schedules I-A, II-I-1, II-I-2, II-I-3, IV-J-1, IV-J-2, IV-J-3, IV-J-6, and IV-J-7.

Q. WERE YOUR TESTIMONY AND THE COST OF SERVICE SCHEDULES YOU SPONSOR PREPARED BY YOU OR UNDER YOUR DIRECT SUPERVISION?

A. Yes. My testimony, exhibits, the schedules that I sponsor, and associated workpapers were prepared by me or under my direction, supervision, or control and are true and correct.

III. RATE CLASS COST OF SERVICE & RATE DESIGN SCHEDULES

Q. PLEASE DESCRIBE THE SCHEDULES YOU ARE SPONSORING THAT PERTAIN TO THE RATE CLASS COST ALLOCATION PROCESS AND THAT SUPPORT THE RATE CLASS COST OF SERVICE STUDY.

A. Schedule I-A: Cost of Service Summary.

Schedule II-I-1: Class Revenue Requirement Analysis – This schedule provides the Rate Class Cost of Service Study and includes the revenue requirement analysis for the test year.

Schedule II-I-2: Class Allocation Factors – This schedule provides a listing of the allocation factors used to assign costs to the various rate classes.

Schedule II-I-3: Functionalized Cost of Service Analysis (Non-ERCOT Members) – This schedule is not applicable, as the Company is an Electric Reliability Council of Texas ("ERCOT") member.

Q. PLEASE DESCRIBE THE RFP SCHEDULES YOU ARE SPONSORING THAT PERTAIN TO THE COMPANY'S RATE DESIGN PROCESS.

A. Schedule IV-J-1: Revenue Summary – This schedule provides a revenue summary of the base-rate revenue requirements, by function and by rate class, for the test-year.

Schedule IV-J-2: Proposed Charges for Discretionary Services and Other Services – This schedule shows the proposed charges for each discretionary and other service charge included in the Tariff for Retail Delivery Service and the Tariff for Transmission Service.

Schedule IV-J-3: Rate Class Definition – This schedule provides the definition of all retail rate classes.

Schedule IV-J-6: Justification for Consumption Level-Based Rates – This schedule is not applicable, as the Company is not proposing any consumption level-based rates.

Schedule IV-J-7: Proof of Revenue Statement – This schedule provides a proof of revenue statement that shows the proposed prices and the resulting base revenue, by rate class, for each applicable charge.

IV. RATE CLASS COST OF SERVICE STUDY

A. General Concepts

Q. PLEASE DISCUSS THE GENERAL CONCEPT OF PERFORMING A RATE CLASS COST OF SERVICE STUDY THAT YOU APPLIED IN THIS PROCEEDING.

A. A rate class cost of service study is an accounting and engineering analysis of cost causation that determines the proper allocation of the Company's plant investment, revenues, and expenses to the appropriate rate classes. The allocation process utilizes the unique customer, energy, demand, and revenue characteristics of each rate class and the interrelationship of those characteristics to determine the class cost responsibility. The resulting allocations based on the customer (premise), energy (kWh), revenue (class revenue requirement), and demand (kW) characteristics for each rate class are used to support the design of compensatory and equitable rates. In this testimony, unless otherwise specified, the term "customer" refers to a premise or a point of delivery.

B. The Allocation Process

The allocation process in any rate class cost of service study involves four major steps: (1) functionalization of all revenue, expense, and rate base accounts (see Schedules II-B-1 through II-B-12, as described in the direct testimony of Company witness Mr. W. Alan Ledbetter); (2) classification of all revenue, expense, and rate base accounts; (3) development of allocation factors based on the data obtained from the books and records of the Company for the test year; and (4) allocation of the revenue, expense, and rate base accounts based on the allocation factors developed in (3) above. The data used in this process include information such as: number of customers in each rate class; rate class demand (kW) and kWh sales; operating and maintenance expenses; depreciation; taxes; capital costs associated with system investment; and property records. These four major steps are summarized as follows.

1. Functionalization

The first step is to group all accounts according to major function to assist in determining which rate classes are responsible for the various costs. In this proceeding, the major functions used are:

- Transmission ("TRAN");
- Distribution ("DIST");