

Northern States Power Company, a Minnesota Corporation
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]
<u>Proxy Group of Twelve Electric Companies</u>	<u>Value Line Adjusted Beta</u>	<u>Bloomberg Adjusted Beta</u>	<u>Average Beta</u>	<u>Market Risk Premium (1)</u>	<u>Risk-Free Rate (2)</u>	<u>Traditional CAPM Cost Rate</u>	<u>ECAPM Cost Rate</u>	<u>Indicated Common Equity Cost Rate (3)</u>
Alliant Energy Corporation	0.85	0.63	0.74	9.80 %	3.35 %	10.60 %	11.24 %	10.92 %
Ameren Corporation	0.80	0.61	0.71	9.80	3.35	10.31	11.02	10.66
American Electric Power Company, Inc.	0.75	0.56	0.65	9.80	3.35	9.72	10.58	10.15
Duke Energy Corporation	0.85	0.47	0.66	9.80	3.35	9.82	10.65	10.23
Edison International	0.95	0.70	0.83	9.80	3.35	11.48	11.90	11.69
Entergy Corporation	0.95	0.72	0.84	9.80	3.35	11.58	11.97	11.78
Evergy, Inc.	0.95	0.60	0.78	9.80	3.35	10.99	11.53	11.26
IDACORP, Inc.	0.80	0.67	0.74	9.80	3.35	10.60	11.24	10.92
NorthWestern Corporation	0.95	0.74	0.84	9.80	3.35	11.58	11.97	11.78
OGE Energy Corporation	1.05	0.83	0.94	9.80	3.35	12.56	12.71	12.64
Portland General Electric Company	0.85	0.70	0.78	9.80	3.35	10.99	11.53	11.26
Xcel Energy Inc.	0.80	0.58	0.69	9.80	3.35	10.11	10.87	10.49
Mean			<u>0.77</u>			<u>10.86 %</u>	<u>11.44 %</u>	<u>11.15 %</u>
Median			<u>0.76</u>			<u>10.80 %</u>	<u>11.39 %</u>	<u>11.09 %</u>
Average of Mean and Median			<u>0.77</u>			<u>10.83 %</u>	<u>11.42 %</u>	<u>11.12 %</u>

Notes on page 2 of this Schedule.

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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 (1926-2021)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2021:	12.37 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.02
MRP based on Ibbotson Historical Data:	<u>7.35 %</u>

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2021)

9.32 %

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

9.35 %

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending April 29, 2022)

Total projected return on the market 3-5 years hence*:	12.96 %
Projected Risk-Free Rate (see note 2):	3.35
MRP based on Value Line Summary & Index:	<u>9.61 %</u>
*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:	15.48 %
Projected Risk-Free Rate (see note 2):	3.35
MRP based on Value Line data	<u>12.13 %</u>

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	14.39 %
Projected Risk-Free Rate (see note 2):	3.35
MRP based on Bloomberg data	<u>11.04 %</u>

Average of Value Line, Ibbotson, and Bloomberg MRP: 9.80 %

- (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 9 and 10 of Schedule 6.) The projection of the risk-free rate is illustrated below:

Second Quarter 2022	2.90 %
Third Quarter 2022	3.10
Fourth Quarter 2022	3.20
First Quarter 2023	3.40
Second Quarter 2023	3.50
Third Quarter 2023	3.50
2023-2027	3.40
2028-2032	3.80
	<u>3.35 %</u>

- (3) Average of Column 6 and Column 7.

Sources of Information:

Value Line Summary and Index
Blue Chip Financial Forecasts, April 29, 2022 and December 1, 2021
Stocks, Bonds, Bills, and Inflation - 2022 SBBI Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services