

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

COST OF SERVICE

APPENDIX 2

Support for Staff

Cost of Capital

THE EMPIRE DISTRICT ELECTRIC COMPANY
d/b/a Liberty

CASE NO. ER-2021-0312

Jefferson City, Missouri
October 2021

**AN ANALYSIS OF COST OF CAPITAL
FOR
THE EMPIRE DISTRICT ELECTRIC COMPANY
CASE NO. ER-2021-0312
APPENDIX 2
SCHEDULES**

By

Peter Chari

Financial Analysis

MISSOURI PUBLIC SERVICE COMMISSION

October 29, 2021

**The Empire District Electric Company
Case No. ER-2021-0312**

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**Empire District Electric Company
Case No. ER-2021-0312**

Federal Reserve Discount Rates Changes and Federal Reserve Funds Rates Changes

Date	Federal Reserve Discount Rate	Federal Reserve Funds Rate	Date	Federal Reserve Discount Rate	Federal Reserve Funds Rate
01/01/83	8.50%		01/04/01	5.50%	6.00%
12/31/83	8.50%		01/31/01	5.00%	5.50%
04/09/84	9.00%		03/20/01	4.50%	5.00%
11/21/84	8.50%		04/18/01	4.00%	4.50%
12/24/84	8.00%		05/15/01	3.50%	4.00%
05/20/85	7.50%		06/27/01	3.25%	3.75%
03/07/86	7.00%		08/21/01	3.00%	3.50%
04/21/86	6.50%		09/17/01	2.50%	3.00%
07/11/86	6.00%		10/02/01	2.00%	2.50%
08/21/86	5.50%		11/06/01	1.50%	2.00%
09/04/87	6.00%		12/11/01	1.25%	1.75%
08/09/88	6.50%		11/06/02	0.75%	1.25%
02/24/89	7.00%		01/09/03	2.25%	** 1.25%
07/13/90		8.00% *	06/25/03	2.00%	1.00%
10/29/90		7.75%	06/30/04	2.25%	1.25%
11/13/90		7.50%	08/10/04	2.50%	1.50%
12/07/90		7.25%	09/21/04	2.75%	1.75%
12/18/90		7.00%	11/10/04	3.00%	2.00%
12/19/90	6.50%		12/14/04	3.25%	2.25%
01/09/91		6.75%	02/02/05	3.50%	2.50%
02/01/91	6.00%	6.25%	03/22/05	3.75%	2.75%
03/08/91		6.00%	05/03/05	4.00%	3.00%
04/30/91	5.50%	5.75%	06/30/05	4.25%	3.25%
08/06/91		5.50%	08/09/05	4.50%	3.50%
09/13/91	5.00%	5.25%	09/20/05	4.75%	3.75%
10/31/91		5.00%	11/01/05	5.00%	4.00%
11/06/91	4.50%	4.75%	12/13/05	5.25%	4.25%
12/06/91		4.50%	01/31/06	5.50%	4.50%
12/20/91	3.50%	4.00%	03/28/06	5.75%	4.75%
04/09/92		3.75%	05/10/06	6.00%	5.00%
07/02/92	3.00%	3.25%	06/29/06	6.25%	5.25%
09/04/92		3.00%	08/17/07	5.75%	5.25%
01/01/93			09/18/07	5.25%	4.75%
12/31/93	No Changes	No Changes	10/31/07	5.00%	4.50%
02/04/94		3.25%	12/11/07	4.75%	4.25%
03/22/94		3.50%	01/22/08	4.00%	3.50%
04/18/94		3.75%	01/30/08	3.50%	3.00%
05/17/94	3.50%	4.25%	03/16/08	3.25%	2.25%
08/16/94	4.00%	4.75%	03/18/08	2.50%	2.25%
11/15/94	4.75%	5.50%	04/30/08	2.25%	2.00%
02/01/95	5.25%	6.00%	10/08/08	1.75%	1.50%
07/06/95		5.75%	10/28/08	1.25%	1.00%
12/19/95		5.50%	12/30/08	0.50%	0% - .25%
01/31/96	5.00%	5.25%	02/19/10	0.75%	0% - .25%
03/25/97		5.50%	12/17/15	1.00%	0.38%
12/12/97	5.00%		12/15/16	1.25%	0.54%
01/09/98	5.00%		03/16/17	1.50%	0.79%
03/06/98	5.00%		06/15/17	1.75%	1.04%
09/29/98		5.25%	12/14/17	2.00%	1.30%
10/15/98	4.75%	5.00%	03/22/18	2.25%	1.51%
11/17/98	4.50%	4.75%	06/14/18	2.50%	1.82%
06/30/99	4.50%	5.00%	09/27/18	2.75%	1.95%
08/24/99	4.75%	5.25%	12/20/18	3.00%	2.27%
11/16/99	5.00%	5.50%	08/01/19	2.75%	2.13%
02/02/00	5.25%	5.75%	09/19/19	2.50%	2.04%
03/21/00	5.50%	6.00%	10/31/19	2.25%	1.83%
05/19/00	6.00%	6.50%	03/04/20	1.75%	0.65%
01/03/01	5.75%	6.00%	03/16/20	0.25%	0.05%

* Staff began tracking the Federal Funds Rate.

**Revised discount window program begins. Reflects rate on primary credit. This revised discount window policy results in incomparability of the discount rates after January 9, 2003 to discount rates before January 9, 2003.

Source:

Federal Reserve Discount rate

<https://fred.stlouisfed.org/series/INTDSRUM193N>

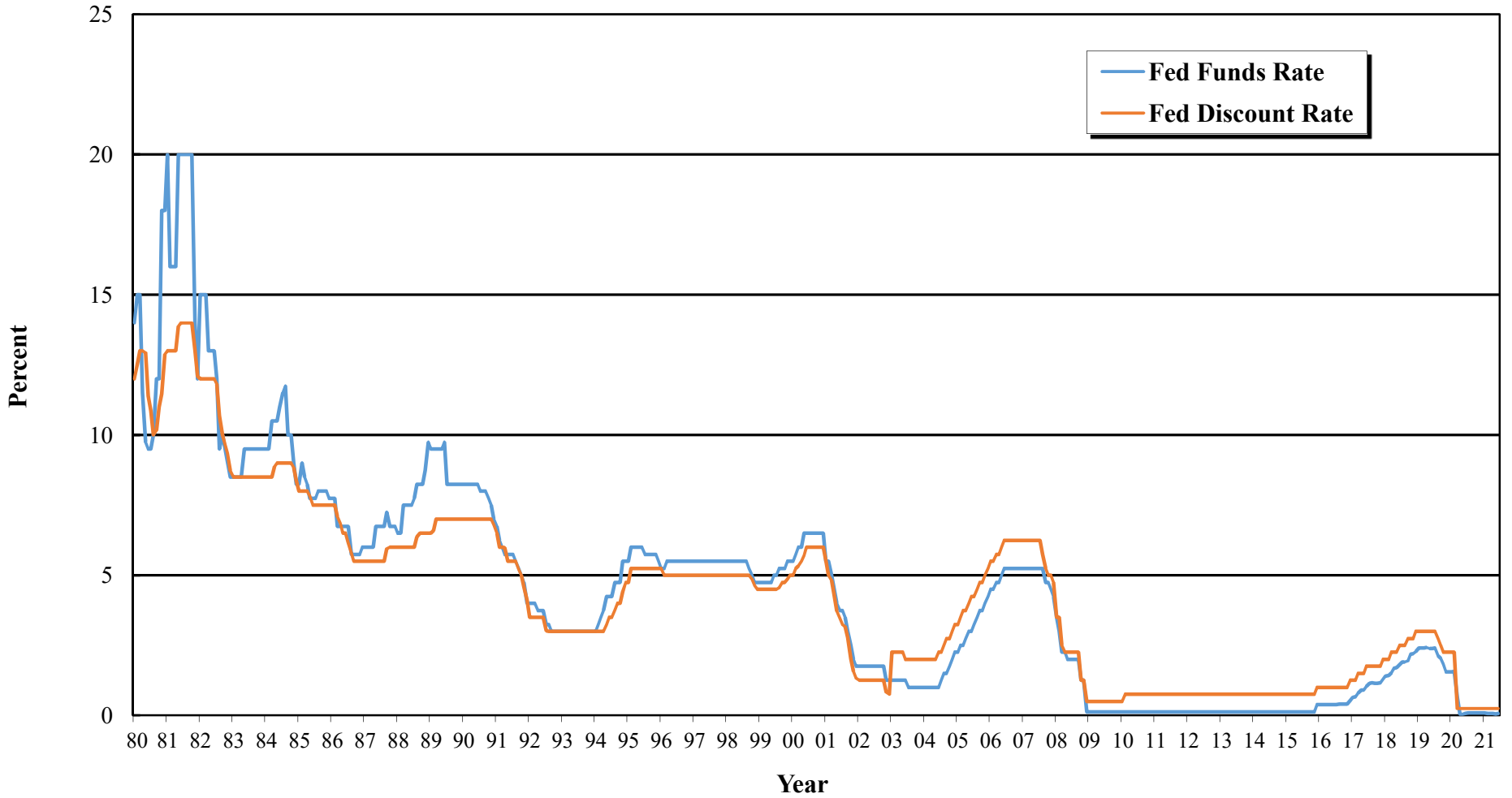
Federal Reserve Funds rate

<https://fred.stlouisfed.org/series/FEDFUNDS>

Note: Interest rates as of December 31 for each year are underlined.

The Empire District Electric Company
Case No. ER-2021-0312

Federal Reserve Discount Rates and Federal Funds Rates
1980 - 2021



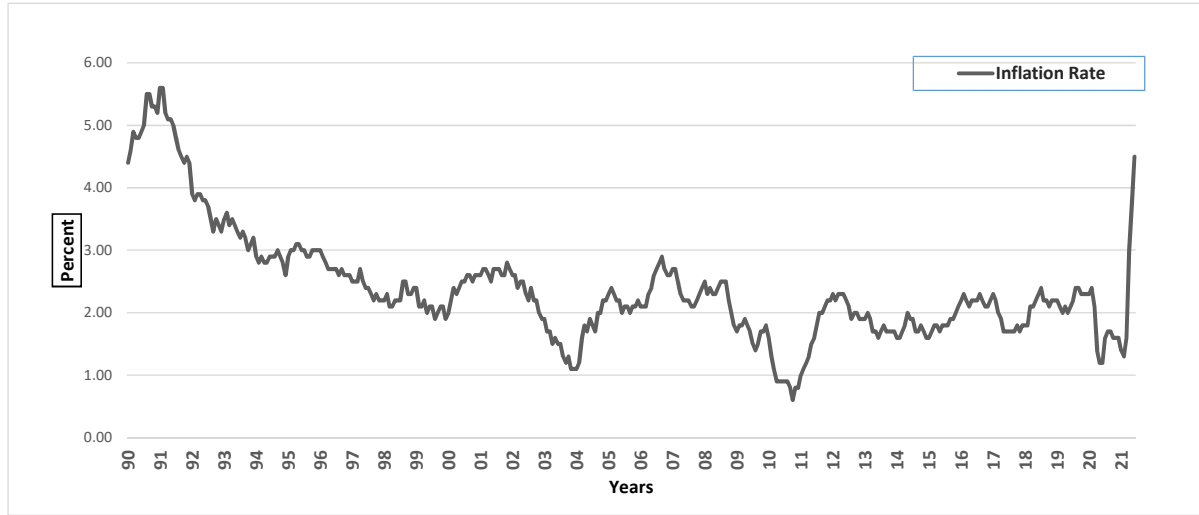
The Empire District Electric Company
ER-2021-0312
Rate of Inflation (CPI)

Consumer Price Index (CPI) Rate of Inflation

Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)
Jan 1990	4.40	Jan 1996	3.00	Jan 2002	2.60	Jan 2008	2.50	Jan 2014	1.60	Jan 2020	2.30
Feb	4.60	Feb	2.90	Feb	2.60	Feb	2.30	Feb	1.60	Feb	2.40
Mar	4.90	Mar	2.80	Mar	2.40	Mar	2.40	Mar	1.70	Mar	2.10
Apr	4.80	Apr	2.70	Apr	2.50	Apr	2.30	Apr	1.80	Apr	1.40
May	4.80	May	2.70	May	2.50	May	2.30	May	2.00	May	1.20
Jun	4.90	Jun	2.70	Jun	2.30	Jun	2.40	Jun	1.90	Jun	1.20
Jul	5.00	Jul	2.70	Jul	2.20	Jul	2.50	Jul	1.90	Jul	1.60
Aug	5.50	Aug	2.60	Aug	2.40	Aug	2.50	Aug	1.70	Aug	1.70
Sep	5.50	Sep	2.70	Sep	2.20	Sep	2.50	Sep	1.70	Sep	1.70
Oct	5.30	Oct	2.60	Oct	2.20	Oct	2.20	Oct	1.80	Oct	1.60
Nov	5.30	Nov	2.60	Nov	2.00	Nov	2.00	Nov	1.70	Nov	1.60
Dec	5.20	Dec	2.60	Dec	1.90	Dec	1.80	Dec	1.60	Dec	1.60
Jan 1991	5.60	Jan 1997	2.50	Jan 2003	1.90	Jan 2009	1.70	Jan 2015	1.60	Jan 2021	
Feb	5.60	Feb	2.50	Feb	1.70	Feb	1.80	Feb	1.70	Feb	
Mar	5.20	Mar	2.50	Mar	1.70	Mar	1.80	Mar	1.80	Mar	
Apr	5.10	Apr	2.70	Apr	1.50	Apr	1.90	Apr	1.80	Apr	
May	5.10	May	2.50	May	1.60	May	1.80	May	1.70	May	
Jun	5.00	Jun	2.40	Jun	1.50	Jun	1.70	Jun	1.80	Jun	
Jul	4.80	Jul	2.40	Jul	1.50	Jul	1.50	Jul	1.80		
Aug	4.60	Aug	2.30	Aug	1.30	Aug	1.40	Aug	1.80		
Sep	4.50	Sep	2.20	Sep	1.20	Sep	1.50	Sep	1.90		
Oct	4.40	Oct	2.30	Oct	1.30	Oct	1.70	Oct	1.90		
Nov	4.50	Nov	2.20	Nov	1.10	Nov	1.70	Nov	2.00		
Dec	4.40	Dec	2.20	Dec	1.10	Dec	1.80	Dec	2.10		
Jan 1992	3.90	Jan 1998	2.20	Jan 2004	1.10	Jan 2010	1.60	Jan 2016	2.20		
Feb	3.80	Feb	2.30	Feb	1.20	Feb	1.30	Feb	2.30		
Mar	3.90	Mar	2.10	Mar	1.60	Mar	1.10	Mar	2.20		
Apr	3.90	Apr	2.10	Apr	1.80	Apr	0.90	Apr	2.10		
May	3.80	May	2.20	May	1.70	May	0.90	May	2.20		
Jun	3.80	Jun	2.20	Jun	1.90	Jun	0.90	Jun	2.20		
Jul	3.70	Jul	2.20	Jul	1.80	Jul	0.90	Jul	2.20		
Aug	3.50	Aug	2.50	Aug	1.70	Aug	0.90	Aug	2.30		
Sep	3.30	Sep	2.50	Sep	2.00	Sep	0.80	Sep	2.20		
Oct	3.50	Oct	2.30	Oct	2.00	Oct	0.60	Oct	2.10		
Nov	3.40	Nov	2.30	Nov	2.20	Nov	0.80	Nov	2.10		
Dec	3.30	Dec	2.40	Dec	2.20	Dec	0.80	Dec	2.20		
Jan 1993	3.50	Jan 1999	2.40	Jan 2005	2.30	Jan 2011	1.00	Jan 2017	2.30		
Feb	3.60	Feb	2.10	Feb	2.40	Feb	1.10	Feb	2.20		
Mar	3.40	Mar	2.10	Mar	2.30	Mar	1.20	Mar	2.00		
Apr	3.50	Apr	2.20	Apr	2.20	Apr	1.30	Apr	1.90		
May	3.40	May	2.00	May	2.20	May	1.50	May	1.70		
Jun	3.30	Jun	2.10	Jun	2.00	Jun	1.60	Jun	1.70		
Jul	3.20	Jul	2.10	Jul	2.10	Jul	1.80	Jul	1.70		
Aug	3.30	Aug	1.90	Aug	2.10	Aug	2.00	Aug	1.70		
Sep	3.20	Sep	2.00	Sep	2.00	Sep	2.00	Sep	1.70		
Oct	3.00	Oct	2.10	Oct	2.10	Oct	2.10	Oct	1.80		
Nov	3.10	Nov	2.10	Nov	2.10	Nov	2.20	Nov	1.70		
Dec	3.20	Dec	1.90	Dec	2.20	Dec	2.20	Dec	1.80		
Jan 1994	2.90	Jan 2000	2.00	Jan 2006	2.10	Jan 2012	2.30	Jan 2018	1.80		
Feb	2.80	Feb	2.20	Feb	2.10	Feb	2.20	Feb	1.80		
Mar	2.90	Mar	2.40	Mar	2.10	Mar	2.30	Mar	2.10		
Apr	2.80	Apr	2.30	Apr	2.30	Apr	2.30	Apr	2.10		
May	2.80	May	2.40	May	2.40	May	2.30	May	2.20		
Jun	2.90	Jun	2.50	Jun	2.60	Jun	2.20	Jun	2.30		
Jul	2.90	Jul	2.50	Jul	2.70	Jul	2.10	Jul	2.40		
Aug	2.90	Aug	2.60	Aug	2.80	Aug	1.90	Aug	2.20		
Sep	3.00	Sep	2.60	Sep	2.90	Sep	2.00	Sep	2.20		
Oct	2.90	Oct	2.50	Oct	2.70	Oct	2.00	Oct	2.10		
Nov	2.80	Nov	2.60	Nov	2.60	Nov	1.90	Nov	2.20		
Dec	2.60	Dec	2.60	Dec	2.60	Dec	1.90	Dec	2.20		
Jan 1995	2.90	Jan 2001	2.60	Jan 2007	2.70	Jan 2013	1.90	Jan 2019	2.20		
Feb	3.00	Feb	2.70	Feb	2.70	Feb	2.00	Feb	2.10		
Mar	3.00	Mar	2.70	Mar	2.50	Mar	1.90	Mar	2.00		
Apr	3.10	Apr	2.60	Apr	2.30	Apr	1.70	Apr	2.10		
May	3.10	May	2.50	May	2.20	May	1.70	May	2.00		
Jun	3.00	Jun	2.70	Jun	2.20	Jun	1.60	Jun	2.10		
Jul	3.00	Jul	2.70	Jul	2.20	Jul	1.70	Jul	2.20		
Aug	2.90	Aug	2.70	Aug	2.10	Aug	1.80	Aug	2.40		
Sep	2.90	Sep	2.60	Sep	2.10	Sept	1.70	Sep	2.40		
Oct	3.00	Oct	2.60	Oct	2.20	Oct	1.70	Oct	2.30		
Nov	3.00	Nov	2.80	Nov	2.30	Nov	1.70	Nov	2.30		
Dec	3.00	Dec	2.70	Dec	2.40	Dec	1.70	Dec	2.30		

Source: U.S. Dept of Labor, Bureau of Labor Statistics, Consumer Price Index - All Urban Consumers, Change for 12-Month Period, Bureau of Labor Statistics, http://www.bls.gov/schedule/archives/cpi_nr.htm

The Empire District Electric Company
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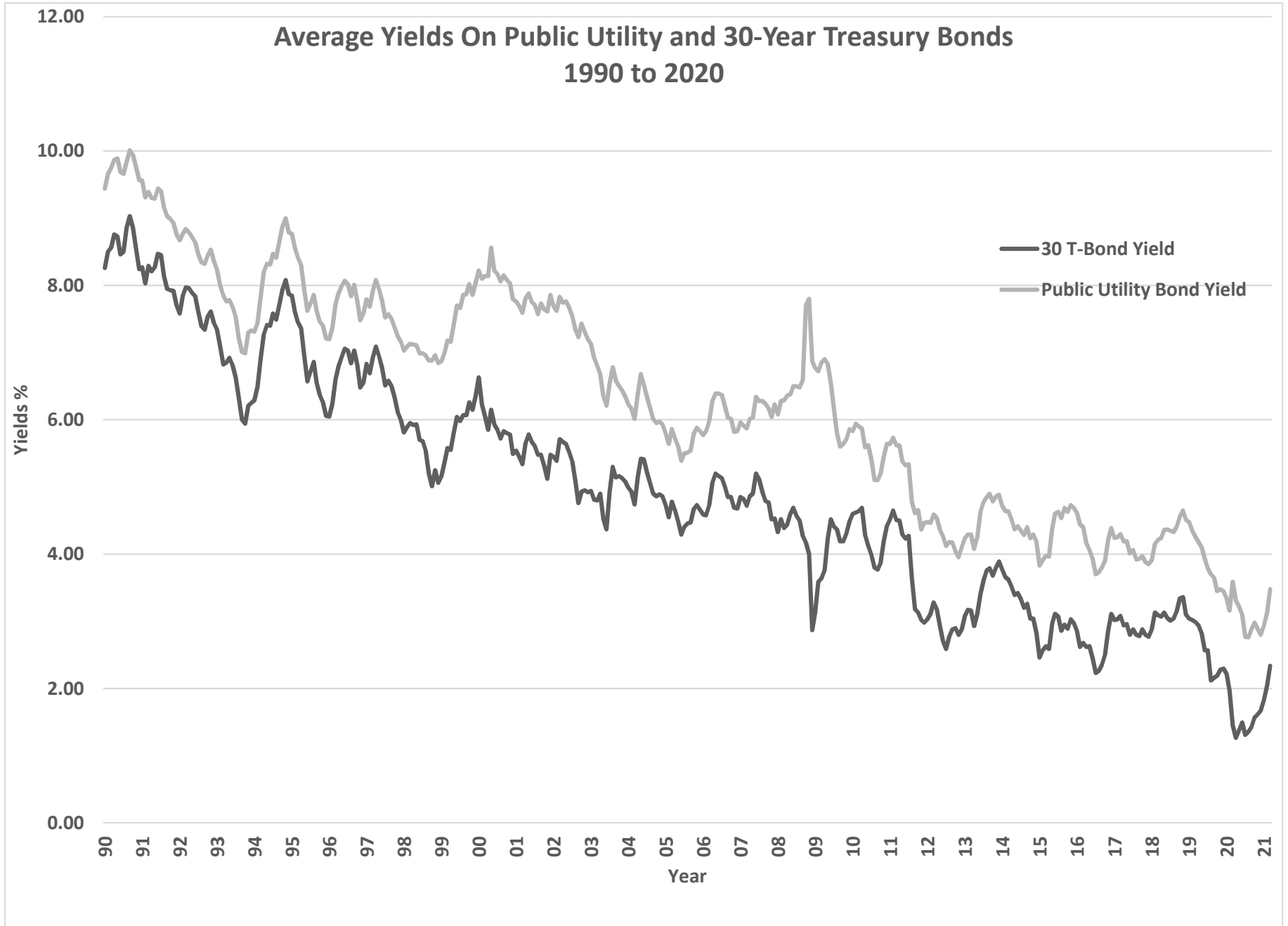


The Empire District Electric Company
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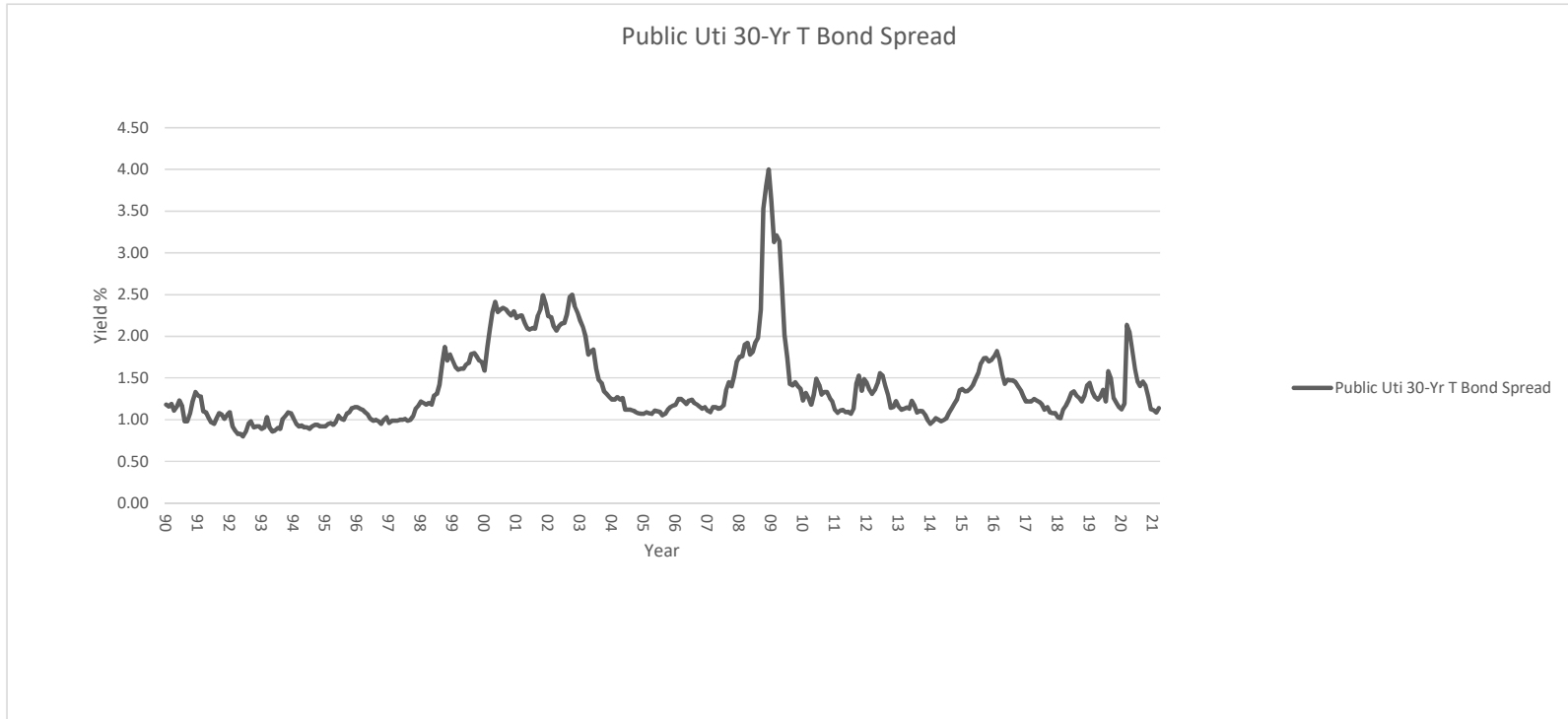
Average Yields on Public Utility Bonds

Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)
Jan 1990	9.44	Jan 1996	7.2	Jan 2002	7.69	Jan 2008	6.08	Jan 2014	4.72	Jan 2020	3.34
Feb	9.66	Feb	7.37	Feb	7.62	Feb	6.28	Feb	4.64	Feb	3.16
Mar	9.75	Mar	7.72	Mar	7.83	Mar	6.29	Mar	4.63	Mar	3.59
Apr	9.87	Apr	7.88	Apr	7.74	Apr	6.36	Apr	4.52	Apr	3.31
May	9.89	May	7.99	May	7.76	May	6.38	May	4.37	May	3.22
Jun	9.69	Jun	8.07	Jun	7.67	Jun	6.5	Jun	4.42	Jun	3.10
Jul	9.66	Jul	8.02	Jul	7.54	Jul	6.5	Jul	4.35	Jul	2.77
Aug	9.84	Aug	7.84	Aug	7.34	Aug	6.48	Aug	4.29	Aug	2.76
Sep	10.01	Sep	8.01	Sep	7.23	Sep	6.59	Sep	4.4	Sep	2.88
Oct	9.94	Oct	7.76	Oct	7.43	Oct	7.7	Oct	4.24	Oct	2.98
Nov	9.76	Nov	7.48	Nov	7.31	Nov	7.8	Nov	4.29	Nov	2.89
Dec	9.57	Dec	7.58	Dec	7.2	Dec	6.87	Dec	4.18	Dec	2.8
Jan 1991	9.56	Jan 1997	7.79	Jan 2003	7.13	Jan 2009	6.77	Jan 2015	3.83	Jan 2021	2.94
Feb	9.31	Feb	7.68	Feb	6.92	Feb	6.72	Feb	3.91	Feb	3.13
Mar	9.39	Mar	7.92	Mar	6.8	Mar	6.85	Mar	3.97	Mar	3.48
Apr	9.3	Apr	8.08	Apr	6.68	Apr	6.9	Apr	3.96	Apr	3.33
May	9.29	May	7.94	May	6.35	May	6.83	May	4.38	May	3.36
Jun	9.44	Jun	7.77	Jun	6.21	Jun	6.54	Jun	4.6	Jun	3.19
Jul	9.4	Jul	7.52	Jul	6.54	Jul	6.15	Jul	4.63	Jul	2.99
Aug	9.16	Aug	7.57	Aug	6.78	Aug	5.8	Aug	4.54	August	2.99
Sep	9.03	Sep	7.5	Sep	6.58	Sep	5.6	Sep	4.68		
Oct	8.99	Oct	7.37	Oct	6.5	Oct	5.64	Oct	4.63		
Nov	8.93	Nov	7.24	Nov	6.44	Nov	5.71	Nov	4.73		
Dec	8.76	Dec	7.16	Dec	6.36	Dec	5.86	Dec	4.69		
Jan 1992	8.67	Jan 1998	7.03	Jan 2004	6.23	Jan 2010	5.83	Jan 2016	4.62		
Feb	8.77	Feb	7.09	Feb	6.17	Feb	5.94	Feb	4.44		
Mar	8.84	Mar	7.13	Mar	6.01	Mar	5.9	Mar	4.4		
Apr	8.79	Apr	7.12	Apr	6.38	Apr	5.87	Apr	4.16		
May	8.72	May	7.11	May	6.68	May	5.59	May	4.06		
Jun	8.64	Jun	6.99	Jun	6.53	Jun	5.62	Jun	3.93		
Jul	8.46	Jul	6.99	Jul	6.34	Jul	5.41	Jul	3.7		
Aug	8.34	Aug	6.96	Aug	6.18	Aug	5.1	Aug	3.73		
Sep	8.32	Sep	6.88	Sep	6.01	Sep	5.1	Sep	3.8		
Oct	8.44	Oct	6.88	Oct	5.95	Oct	5.2	Oct	3.9		
Nov	8.53	Nov	6.96	Nov	5.97	Nov	5.45	Nov	4.21		
Dec	8.36	Dec	6.84	Dec	5.93	Dec	5.61	Dec	4.39		
Jan 1993	8.23	Jan 1999	6.87	Jan 2005	5.8	Jan 2011	5.69	Jan 2017	4.24		
Feb	8	Feb	7	Feb	5.64	Feb	5.82	Feb	4.25		
Mar	7.85	Mar	7.18	Mar	5.86	Mar	5.74	Mar	4.3		
Apr	7.76	Apr	7.16	Apr	5.72	Apr	5.76	Apr	4.19		
May	7.78	May	7.42	May	5.6	May	5.57	May	4.19		
Jun	7.68	Jun	7.7	Jun	5.39	Jun	5.52	Jun	4.01		
Jul	7.53	Jul	7.66	Jul	5.5	Jul	5.61	Jul	4.06		
Aug	7.21	Aug	7.86	Aug	5.51	Aug	5.26	Aug	3.92		
Sep	7.01	Sep	7.87	Sep	5.54	Sep	5.01	Sep	3.93		
Oct	6.99	Oct	8.02	Oct	5.79	Oct	5.11	Oct	3.97		
Nov	7.3	Nov	7.86	Nov	5.88	Nov	5	Nov	3.92		
Dec	7.33	Dec	8.04	Dec	5.83	Dec	4.96	Dec	3.93		
Jan 1994	7.31	Jan 2000	8.22	Jan 2006	5.77	Jan 2012	4.97	Jan 2018	3.97		
Feb	7.44	Feb	8.1	Feb	5.83	Feb	4.99	Feb	3.88		
Mar	7.83	Mar	8.14	Mar	5.98	Mar	5.13	Mar	3.85		
Apr	8.2	Apr	8.14	Apr	6.28	Apr	5.05	April	4.24		
May	8.32	May	8.55	May	6.39	May	4.84	May	4.36		
Jun	8.31	Jun	8.22	Jun	6.39	Jun	4.67	Jun	4.37		
Jul	8.47	Jul	8.17	Jul	6.37	Jul	4.56	Jul	4.35		
Aug	8.41	Aug	8.05	Aug	6.2	Aug	4.71	August	4.33		
Sep	8.65	Sep	8.16	Sep	6.03	Sep	4.75	Sep	4.41		
Oct	8.88	Oct	8.08	Oct	6.01	Oct	4.69	Oct	4.56		
Nov	9	Nov	8.03	Nov	5.82	Nov	4.53	Nov	4.65		
Dec	8.79	Dec	7.79	Dec	5.83	Dec	4.28	Dec	4.51		
Jan 1995	8.77	Jan 2001	7.76	Jan 2007	5.96	Jan 2013	4.45	Jan 2019	4.48		
Feb	8.56	Feb	7.69	Feb	5.91	Feb	4.49	Feb	4.35		
Mar	8.41	Mar	7.59	Mar	5.87	Mar	4.45	Mar	4.26		
Apr	8.3	Apr	7.81	Apr	6.01	Apr	4.19	April	4.18		
May	7.93	May	7.88	May	6.03	May	4.36	May	4.1		
Jun	7.62	Jun	7.75	Jun	6.34	Jun	4.7	Jun	3.93		
Jul	7.73	Jul	7.71	Jul	6.28	Jul	4.9	Jul	3.79		
Aug	7.86	Aug	7.57	Aug	6.28	Aug	5	Aug	3.7		
Sep	7.62	Sep	7.73	Sep	6.24	Sep	5.05	Sep	3.65		
Oct	7.46	Oct	7.64	Oct	6.17	Oct	4.94	Oct	3.45		
Nov	7.4	Nov	7.61	Nov	6.04	Nov	5.04	Nov	3.48		
Dec	7.21	Dec	7.86	Dec	6.23	Dec	4.89	Dec	3.45		

Source:
Mergent Bond Record (through November 2010); BondsOnline (December 2010 - November 2013); Mergent Bond Record (December 2013 - Present).



The Empire District Electric Company
Case No. ER-2021-0312



The Empire District Electric Company
Criteria For Selecting Comparable Electric Utility Companies
ER-2021-0312

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		(9)	(10)	(12)
		Stock Publicly Traded	80% of Assets U.S. Regulated (EEI)	At Least Investment Grade Credit Rating (2 of 3 agencies)	L- T Growth Coverage from at least 2 equity analysts and L-T Growth Available	No Pending Merger or Acquisition	No Reduced Dividend Since 2018	At Least 80% of Income from U.S. Regulated Utility Operations	At least 50% of Plant from Electric Utility	At least 25% of Plant Electric Plant Generation	Comparable Company Met All Criteria
Edison Electric Institute											
Power Companies	Ticker										
ALLETE, Inc.	ALE	YES	NO								
Alliant Energy Corporation	LNT	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Ameren Corporation ¹	AEE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
American Electric Power Company, Inc.	AEP	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
AVANGRID, Inc.	AGR	YES	NO								
Avista Corporation	AVA	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Black Hills Corporation	BKH	YES	YES	YES	YES	YES	YES	YES	NO		
CenterPoint Energy, Inc.	CNP	YES	NO								
CMS Energy Corporation	CMS	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Consolidated Edison, Inc.	ED	YES	YES	YES	YES	YES	YES	YES	YES	NO	
Dominion Resources, Inc.	D	YES	NO								
DTE Energy Company	DTE	YES	NO								
Duke Energy Corporation	DUK	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Edison International	EIX	YES	YES	YES	YES	YES	YES	YES	YES	NO	
El Paso Electric Company	EE	NO									
Entergy Corporation ²	ETR	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Energy, Inc.	EVRG	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Eversource Energy	ES	YES	YES	YES	YES	YES	YES	YES	YES	NO	
Exelon Corporation	EXC	YES	NO								
FirstEnergy Corp.	FE	YES	YES	NO							
Hawaiian Electric Industries, Inc.	HE	YES	NO								
IDACORP, Inc.	IDA	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
MDU Resources Group, Inc.	MDU	YES	NO								
MGE Energy, Inc.	MGEE	YES	NO								
NextEra Energy, Inc.	NEE	YES	NO								
NiSource Inc.	NI	YES	YES	YES	YES	YES	YES	YES	NO		
NorthWestern Corporation	NWE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
OGE Energy Corp.	OGE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Otter Tail Corporation	OTTR	YES	YES	YES	NO						
PG&E Corporation	PCG	YES	YES	NO							
Pinnacle West Capital Corporation	PNW	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
PNM Resources, Inc.	PNM	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Portland General Electric Company	POR	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
PPL Corporation	PPL	YES	YES	YES	YES	YES	YES	NO			
Public Service Enterprise Group Inc.	PEG	YES	NO								
SCANA Corporation	SCG	NO									
Sempra Energy	SRE	YES	NO								
Southern Company	SO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Unitil Corporation	UTL	YES	YES	YES	NO						
Vectren Corporation	VVC	NO									
WEC Energy Group, Inc.	WEC	YES	YES	YES	YES	YES	YES				
Xcel Energy, Inc.	XEL	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Sources: Columns 1, 2, 3, 4 = Edison Electric Institute
Column 5,6,7,8,9,10,11 = SNL Finance

Notes: 1 Ameren appears in Staff's Schedules for reference. Staff's analysis of the proxy group excludes Ameren Data.

2 Entergy Corporation was not included because losses from its wholesale commodities business have led to considerable volatility in revenues, compared to the proxy group.

**The Empire District Electric Company
 Comparable Electric Utility Companies
 For Empire District Electric Company
 Case No. ER-2021-0312**

Number	Company Name	Ticker Symbol	S&P Corporate Credit Rating	
1	Alliant Energy Corporation	LNT	A-	1
2	Ameren Corporation	AEE	BBB+	2
3	American Electric Power Company, Inc.	AEP	A-	1
4	Avista Corporation	AVA	BBB	3
5	CMS Energy Corporation	CMS	BBB+	2
6	Duke Energy Corporation	DUK	BBB+	2
7	Evergy, Inc.	EVRG	A-	1
8	IDACORP, Inc.	IDA	BBB	3
9	NorthWestern Corporation	NWE	BBB	3
10	OGE Energy Corp.	OGE	BBB+	2
11	Pinnacle West Capital Corporation	PNW	A-	1
12	PNM Resources, Inc.	PNM	BBB	3
13	Portland General Electric Company	POR	BBB+	2
14	Southern Company	SO	A-	1
15	Xcel Energy, Inc.	XEL	A-	1
				28
	Average Credit Ratings		BBB+	1.9

The Empire District Electric Company
Case No. ER-2021-0312
Empire District Electric Company Pro Forma Capital Structure
as of September 30, 2021

Line No.	Description	Capital per Books 9/30/20 (1)	Capital Ratio 9/30/20	Pro Forma Adjustments (2)	Adjusted Capital 9/30/20	Pro Forma Capital Ratio
	(a)	(b)	(c)	(d)	(e) = (b) + (d)	(f)
1	Long Term Debt	\$ 735,000,000	40.65%	\$ 425,000,000	\$ 1,160,000,000	47.56%
2	Preferred Stock	-	0.00%		\$ -	0.00%
3	Common Equity	1,072,982,332	59.35%	205,978,724	\$ 1,278,961,056	52.44%
4	Total Capital	<u>\$ 1,807,982,332</u>	<u>100.00%</u>	<u>\$ 630,978,724</u>	<u>\$ 2,438,961,056</u>	<u>100.00%</u>

(1) Empire District Electric Company Consolidated per MPSC Order ER-2019-0374

(2) Reflects common equity changes from September 30, 2020 through March 2021 and Empire financing of wind farm rate base investments. Excludes February/March extraordinary fuel purchases which will be permanently financed based on the Pro Forma Capital Ratios in column (f) pending further discussions with the staff of the Missouri Public Service Commission.

Source: Todd Mooney's Direct Testimony, Case No. ER-2021-0312, Schedule TM-3

The Empire District Electric Company
Case No. ER-2021-0312
Liberty Utilities Company Pro Forma Capital Structure
as of September 30, 2021

Line No.	Description (a)	Capital per Books 9/30/20 (b)	Capital Ratio 9/30/20 (c)	Pro Forma Adjustments (2) (d)	Adjusted Capital 9/30/20 (e) = (b) + (d)	Pro Forma Capital Ratio (f)	ER-2019-0374 Adjustments (3) (g)	Adjusted Capital 9/30/20 Post ER- 2019-0374 (h) = (e) + (g)	Adjusted Capital Ratio (i)
1	Long Term Debt	\$ 1,881,030,000	38.07%	\$ 584,089,000	\$ 2,465,119,000	37.62%	\$ 628,500,000	\$ 3,093,619,000	47.21%
2	Preferred Shares	-	0.00%		-	0.00%		\$ -	0.00%
3	Redeemable Non Controlling Interest (1)	22,895,000	0.46%	(2,036,000)	20,859,000	0.32%		20,859,000	0.32%
4	Common Equity	3,036,870,000	61.47%	1,029,823,000	4,066,693,000	62.06%	(628,500,000)	3,438,193,000	52.47%
5	Total Equity	3,059,765,000	61.93%	1,027,787,000	4,087,552,000	62.38%	(628,500,000)	3,459,052,000	52.79%
6	Total Capital	<u>\$ 4,940,795,000</u>	<u>100.00%</u>	<u>\$ 1,611,876,000</u>	<u>\$ 6,552,671,000</u>	<u>100.00%</u>	<u>\$ -</u>	<u>\$ 6,552,671,000</u>	<u>100.00%</u>

(1) Redeemable Non Controlling Interests relate to third party tax equity investments in solar projects that are not expected to be redeemed.

(2) Reflects estimated changes in common equity from September 30, 2020 through March 31, 2021 and financing of wind farm investments.

(3) In ER-2019-0374, OPC increased Long-Term Debt to reflect guarantees by LUCO of Affiliate Debt not reflected on LUCO's balance sheet. In addition, OPC also subtracted the same amounts from Common Equity. Empire does not agree with these adjustments but has reflected them per the 2019-0374 Order. The issue is on appeal before the Missouri Court of Appeals, Western District. Besides disagreement with the underlying methodology Empire also does not agree with the common equity adjustment in column (g).

The Empire District Electric Company
Case No. ER-2021-0312
Algonquin Power and Utilities Corp. Pro Forma Capital Structure
as of September 30, 2021

Line No.	Description (a)	Capital per Books 9/30/20 (b)	Capital Ratio 9/30/20 (c)	Pro Forma Adjustments (2) (d)	Adjusted Capital 9/30/20 (e) = (b) + (d)	Pro Forma Capital Ratio (f)	ER-2019-0374 Adjustments (3) (g)	Adjusted Capital 9/30/20 Post ER- 2019-0374 (h) = (e) + (g)	Adjusted Capital Ratio (i)
1	Long Term Debt	\$ 3,977,705,000	41.80%	\$ 1,022,854,000	\$ 5,000,559,000	43.04%	\$ (318,750,000)	\$ 4,681,809,000	40.30%
2	Preferred Shares	184,299,000	1.94%		184,299,000	1.59%	(92,150,000)	92,149,000	0.79%
3	Redeemable Non Controlling Interest, held by Related Party	306,234,000	3.22%	\$ 82,000	306,316,000	2.64%		306,316,000	2.64%
4	Redeemable Non Controlling Interest (1)	22,896,000	0.24%	(2,037,000)	20,859,000	0.18%		20,859,000	0.18%
5	Common Equity	5,024,186,000	52.80%	1,082,496,000	6,106,682,000	52.56%	410,900,000	6,517,582,000	56.10%
6	Total Equity	<u>5,047,082,000</u>	<u>53.04%</u>	<u>1,080,459,000</u>	<u>6,127,541,000</u>	<u>52.74%</u>	<u>410,900,000</u>	<u>6,538,441,000</u>	<u>56.28%</u>
7	Total Capital	<u>\$ 9,515,320,000</u>	<u>100.00%</u>	<u>\$ 2,103,395,000</u>	<u>\$ 11,618,715,000</u>	<u>100.00%</u>	<u>\$ -</u>	<u>\$ 11,618,715,000</u>	<u>100.00%</u>

(1) Redeemable Non Controlling Interests relate to third party tax equity investments in solar projects that are not expected to be redeemed.

(2) Reflects estimated changes in accounts from September 30, 2020 through March 31, 2021 and consolidated financing of wind farm projects.

(3) In ER-2019-0374, OPC adjusted Long-Term Debt down by half of the outstanding balance of the hybrid loans, and the preferred stock also by one half, and added those amounts to common equity.

The Empire District Electric Company
Case No. ER-2021-0312
Pro Forma Capital Structure
as of September 30, 2021

	Dollar Values	Ratios
Long-Term Debt	\$ 1,160,000,000.00	47.56%
Preferred Stock		0.00%
Common Stock	\$ 1,278,961,056.00	52.44%
Total	\$ 2,438,961,056.00	100.00%

Source: Todd Mooney's Direct Testimony, Case No. ER-2021-0312, Schedule TM-3

The Empire District Electric Company
Case No. ER-2021-0312
Electric Proxy Group Per Share Growth Rate

Company Name	Ticker Symbol	[1] Ten-Year Historic Growth Rates				[2] Five-Year Historic Growth Rates				[3] 10-Year and 5-Year Average		[4] [5] [6] Projected Growth Rates				
		EPS	DPS	BVPS	Average	EPS	DPS	BVPS	Average	Average	EPS (Market Intelligence)	EPS (VL)	Average	DPS	BVPS	Average
Alliant Energy Corporation	LNT	6.00%	7.00%	4.50%	5.83%	6.00%	7.00%	5.50%	6.17%	6.00%	5.90%	5.50%	5.70%	6.00%	6.00%	5.90%
Ameren Corporation	AEE	2.00%	0.50%	NM	1.25%	8.00%	3.50%	3.50%	5.00%	3.13%	7.32%	6.00%	6.66%	7.00%	6.00%	6.55%
American Electric Power Company, Inc.	AEP	4.00%	5.00%	4.00%	4.33%	4.00%	5.50%	3.00%	4.17%	4.25%	5.89%	6.50%	6.19%	5.50%	5.50%	5.73%
Avista Corporation	AVA	6.50%	8.00%	4.00%	6.17%	7.00%	4.00%	4.50%	5.17%	5.67%	5.08%	1.00%	3.04%	4.00%	2.50%	3.18%
CMS Energy Corporation	CMS	7.50%	11.50%	5.00%	8.00%	7.00%	7.00%	5.00%	6.33%	7.17%	7.20%	7.50%	7.35%	7.00%	8.00%	7.45%
Duke Energy Corporation	DUK	3.00%	3.00%	2.00%	2.67%	2.50%	3.00%	1.00%	2.17%	2.42%	5.14%	7.00%	6.07%	2.50%	2.00%	3.52%
Evergy, Inc.	EVRG	NM	NM	NM	NM	NM	NM	NM	NM	NM	6.33%	8.00%	7.17%	5.50%	2.50%	5.06%
IDACORP, Inc.	IDA	7.00%	7.00%	5.00%	6.33%	4.00%	9.00%	5.00%	6.00%	6.17%	3.53%	4.50%	4.02%	6.50%	4.00%	4.84%
NorthWestern Corporation	NWE	7.00%	5.50%	6.00%	6.17%	6.00%	7.50%	7.00%	6.83%	6.50%	4.99%	2.50%	3.75%	4.00%	3.00%	3.58%
OGE Energy Corp.	OGE	4.50%	7.50%	6.00%	6.00%	3.00%	9.50%	4.00%	5.50%	5.75%	2.44%	4.00%	3.22%	4.50%	1.50%	3.07%
Pinnacle West Capital Corporation	PNW	6.50%	3.00%	3.00%	4.17%	5.00%	3.50%	4.00%	4.17%	4.17%	2.78%	4.50%	3.64%	6.00%	3.50%	4.38%
PNM Resources, Inc.	PNM	15.00%	5.00%	0.50%	6.83%	7.00%	10.00%	NM	8.50%	7.67%	5.34%	7.50%	6.42%	6.50%	6.00%	6.31%
Portland General Electric Company	POR	3.50%	4.00%	3.00%	3.50%	4.50%	5.50%	3.50%	4.50%	4.00%	5.80%	4.00%	4.90%	6.00%	2.50%	4.47%
Southern Company	SO	3.00%	3.50%	3.50%	3.33%	3.00%	3.50%	3.00%	3.17%	3.25%	5.53%	5.00%	5.26%	3.00%	3.50%	3.92%
Xcel Energy, Inc.	XEL	5.50%	5.00%	4.00%	4.83%	5.00%	6.50%	4.50%	5.33%	5.08%	6.18%	6.00%	6.09%	6.00%	5.50%	5.86%
Average		5.79%	5.39%	3.88%	4.96%	5.14%	6.07%	4.12%	5.21%	5.09%	5.30%	5.30%	5.30%	5.33%	4.13%	4.92%

[1] Source: Value Line

[2] Source: Value Line

[3] Source: Market Intelligence, as of July 30, 2021

[4] Analysts Earnings per Share Estimate from Value Line: LNT, AEE, AEP, CMS, EVRG, OGE were pulled from the February 12, 2021 Value Publication; AVA, IDA, NWE, PNM, PNW, POR, XEL were pulled from the January 22, 2021 Value Line Publication; DUK and SO were pulled from the May 14, 2021 Value Line Publication

[5] Average of [3] and [4]

[6] Source: Value Line. LNT, AEE, AEP, CMS, EVRG, OGE were pulled from the February 12, 2021 Value Publication
IDA, NWE, PNM, PNW, POR, XEL were pulled from the January 22, 2021 Value Line Publication
DUK and SO were pulled from the May 14, 2021 Value Line Publication

The Empire District Electric Company
Case No. ER-2021-0312
Constant-Growth Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies

	[1]	[2]	[3]	[4]	[5]	
Company Name	Ticker Symbol	Analysts EPS		Average	Projected	Average Growth Rate
		Estimate (Market Intelligence)	Analysts EPS Estimate (Value Line)		Long-Term GDP Growth Rate	
Alliant Energy Corporation	LNT	5.90%	5.50%	5.70%	3.83%	5.08%
Ameren Corporation	AEE	7.32%	6.00%	6.66%	3.83%	5.72%
American Electric Power Company, Inc.	AEP	5.89%	6.50%	6.19%	3.83%	5.41%
Avista Corporation	AVA	5.08%	1.00%	3.04%	3.83%	3.30%
CMS Energy Corporation	CMS	7.20%	7.50%	7.35%	3.83%	6.18%
Duke Energy Corporation	DUK	5.14%	7.00%	6.07%	3.83%	5.32%
Evergy, Inc.	EVRG	6.33%	8.00%	7.17%	3.83%	6.05%
IDACORP, Inc.	IDA	3.53%	4.50%	4.02%	3.83%	3.95%
NorthWestern Corporation	NWE	4.99%	2.50%	3.75%	3.83%	3.77%
OGE Energy Corp.	OGE	2.44%	4.00%	3.22%	3.83%	3.42%
Pinnacle West Capital Corporation	PNW	2.78%	4.50%	3.64%	3.83%	3.70%
PNM Resources, Inc.	PNM	5.34%	7.50%	6.42%	3.83%	5.56%
Portland General Electric Company	POR	5.80%	4.00%	4.90%	3.83%	4.54%
Southern Company	SO	5.53%	5.00%	5.26%	3.83%	4.79%
Xcel Energy, Inc.	XEL	6.18%	6.00%	6.09%	3.83%	5.34%
Average		5.30%	5.30%	5.30%	3.83%	4.81%

[1] Analysts Earnings per Share Estimate from S&P Market Intelligence, as of August 31, 2021.

[2] Analysts Earnings per Share Estimate from Value Line: LNT, AEE, AEP, CMS, EVRG, OGE were pulled from the February 12, 2021 Value Publication; AVA, IDA, NWE, PNM, PNW, POR, XEL were pulled from the January 22, 2021 Value Line Publication; DUK and SO were pulled from the May 14, 2021 Value Line Publication

[3] Average of [1] and [2]

[4] Source: CBO, Fed and

[5] $(2/3)*[3]+(1/3)*[4]$

The Empire District Electric Company
Case No. ER-2019-0374

Recalculated Constant-Growth Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies

	(1)	(2)	(3)	(4)
Company Name	Expected Annual Dividend	Average High/Low Stock Price	Projected Dividend Yield	Recalculated Estimated Cost of Equity
Alliant Energy Corporation	\$1.50	\$52.87	2.83%	7.90%
Ameren Corporation	\$2.00	\$76.78	2.60%	8.09%
American Electric Power Company, Inc.	\$2.79	\$92.32	3.02%	8.20%
Avista Corporation	\$1.59	\$47.66	3.34%	7.29%
CMS Energy Corporation	\$1.60	\$62.68	2.55%	8.44%
Duke Energy Corporation	\$3.89	\$93.24	4.18%	8.52%
Evergy, Inc.	\$3.74	\$116.65	3.21%	8.62%
IDACORP, Inc.	\$2.62	\$108.32	2.42%	6.05%
NorthWestern Corporation	\$2.37	\$72.90	3.25%	6.82%
OGE Energy Corp.	\$1.57	\$43.46	3.62%	8.37%
Pinnacle West Capital Corporation	\$3.15	\$92.74	3.40%	8.22%
PNM Resources, Inc.	\$1.58	\$50.54	3.12%	8.45%
Portland General Electric Company	\$1.60	\$56.13	2.85%	7.23%
Southern Company	\$2.53	\$61.35	4.12%	8.43%
Xcel Energy Inc.	\$1.64	\$63.11	2.59%	7.51%
Average	\$2.28	\$72.72	3.14%	7.88%
			High	8.62%
			Low	6.05%

Proposed Dividend Yield: 3.14%

Proposed Range of Growth: 4.20%-5.00%

Estimated Proxy Cost of Common Equity: 7.34% - 8.14%

Notes: Column 1 = Expected Annual Dividend based on the sum of equity analysts' expected next four quarters of DPS.

FactSet projected dividends per share according to SNL Financial.

Sources: Column 1 = SNL Financial

Column 2 = Schedule 11.

Column 3 = Column 1/Column 2

Column 4 =

**The Empire District Electric Company
Case No. ER-2021-0312**

**Constant-Growth Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies**

		[1]	[2]	[3]	[4]	[5]
		Projected		Expected	Estimated	
Company Name	Ticker Symbol	Annual Dividend	Stock Price	Dividend Yield	Growth Rate	DCF COE Estimate
Alliant Energy Corporation	LNT	1.66	\$ 58.61	2.83%	5.08%	7.91%
Ameren Corporation	AEE	2.21	\$ 84.84	2.60%	5.72%	8.32%
American Electric Power Company, Inc.	AEP	3.15	\$ 86.75	3.63%	5.41%	9.04%
Avista Corporation	AVA	1.72	\$ 43.15	3.99%	3.30%	7.29%
CMS Energy Corporation	CMS	1.81	\$ 61.64	2.94%	6.18%	9.11%
Duke Energy Corporation	DUK	4.18	\$ 103.29	4.05%	5.32%	9.37%
Evergy, Inc.	EVRG	2.03	\$ 64.57	3.14%	6.05%	9.20%
IDACORP, Inc.	IDA	2.95	\$ 102.56	2.87%	3.95%	6.83%
NorthWestern Corporation	NWE	2.53	\$ 62.58	4.04%	3.77%	7.81%
OGE Energy Corp.	OGE	1.65	\$ 34.49	4.79%	3.42%	8.21%
Pinnacle West Capital Corporation	PNW	3.48	\$ 82.76	4.21%	3.70%	7.91%
PNM Resources, Inc.	PNM	1.33	\$ 48.70	2.74%	5.56%	8.30%
Portland General Electric Company	POR	1.70	\$ 48.77	3.49%	4.54%	8.03%
Southern Company	SO	2.69	\$ 63.70	4.22%	4.79%	9.00%
Xcel Energy, Inc.	XEL	1.89	\$ 68.44	2.76%	5.34%	8.09%
		2.33	\$ 67.66	3.49%	4.81%	8.30%
					Mean	8.30%
					High	9.37%
					Low	6.83%

[1] = Projected Annual Dividend is analysts' estimated average high/low dividends for the next 12 months (as of July 30, 2021) from Market Intelligence

[2] = Average of the opening and closing recent three-months stock prices, ending July 30, 2021.

[3] = [1]/[2]

[4] = Average of analysts' estimated earnings per share growth rate for the next five years, as of July 30, 2021.

Source: Market Intelligence and Value Line (see PC-8-2).

[5] = [3]+[4]

The Empire District Electric Company
Case No. ER-2021-0312
Capital Asset Pricing Model (CAPM) Estimated Costs of Equity
for the Comparable Electric Utility Companies

	[1]	[2]	[3]	[4]	[5]	[6]	
Company Name	Ticker Symbol	Risk Free Rate	Beta	Arithmetic Average Market Risk Premium	Geometric Average Market Risk Premium	Average Risk Premium	CAPM COE Estimate
Alliant Energy Corporation	LNT	2.01%	0.85	6.07%	4.62%	5.35%	6.55%
Ameren Corporation	AEE	2.01%	0.85	6.07%	4.62%	5.35%	6.55%
American Electric Power Company, Inc.	AEP	2.01%	0.75	6.07%	4.62%	5.35%	6.02%
Avista Corporation	AVA	2.01%	0.95	6.07%	4.62%	5.35%	7.09%
CMS Energy Corporation	CMS	2.01%	0.80	6.07%	4.62%	5.35%	6.29%
Duke Energy Corporation	DUK	2.01%	0.90	6.07%	4.62%	5.35%	6.82%
Evergy, Inc.	EVRG	2.01%	0.95	6.07%	4.62%	5.35%	7.09%
IDACORP, Inc.	IDA	2.01%	0.85	6.07%	4.62%	5.35%	6.55%
NorthWestern Corporation	NWE	2.01%	0.95	6.07%	4.62%	5.35%	7.09%
OGE Energy Corp.	OGE	2.01%	1.05	6.07%	4.62%	5.35%	7.62%
Pinnacle West Capital Corporation	PNW	2.01%	0.90	6.07%	4.62%	5.35%	6.82%
PNM Resources, Inc.	PNM	2.01%	0.95	6.07%	4.62%	5.35%	7.09%
Portland General Electric Company	POR	2.01%	0.90	6.07%	4.62%	5.35%	6.82%
Southern Company	SO	2.01%	0.95	6.07%	4.62%	5.35%	7.09%
Xcel Energy, Inc.	XEL	2.01%	0.80	6.07%	4.62%	5.35%	6.29%
Average			0.89				6.78%
						Mean	6.78%
						High	7.62%
						Low	6.02%

[1] = The appropriate Risk-free rate is the average yield on 30-Year Treasury Bond for the months of February, March and April of 2021 obtained from St. Louis Fed: <https://fred.stlouisfed.org/series/DGS30>.

[2] = Beta is a measure of volatility or risk of a stock relative to the market as a whole. Betas for AEE, AEP, CMS, EVRG and OGE were pulled from Value Line Published on September 10, 2021. Betas for DUK and SO were pulled from the Value Line published on August 13, 2021. Betas for AVA, IDA, NWE, PNM, PNW, POR and XEL were pulled from the Value Line published on July 23, 2021

[3] = The Market Risk Premium represents the expected return from holding the entire market portfolio less the return from holding a risk-free investment. The appropriate Market Risk Premium for the period 1926-2020 was determined to be 4.62%, geometric average, based on Stocks, Bonds, Bills and Inflation Data provided by Ibbotson.

[4] = The Market Risk Premium represents the expected return from holding the entire market portfolio less the return from holding a risk-free investment. The appropriate Market Risk Premium for the period 1926-2020 was determined to be 6.04%, arithmetic average, based on Stocks, Bonds, Bills and Inflation provided by Ibbotson.

[5] = Average of [3] and [4]

[6] = [1]+([2]*[5])

The Empire District Electric Company
Case No. ER-2021-0312

Summary of Staff's Cost of Equity Estimates

Current Cost of Equity Estimates for the Proxy Group

DCF Range	<u>Mean</u>	1
	8.30%	

Reproduced Cost of Equity Estimates for the Proxy Group in the Empire Case No. ER-2019-0374

DCF Range	<u>Mean</u>	2
	7.88%	

DCF COE Difference Between The Current Case and Empire Rate Case	0.42%	3
Commission Allowed ROE in Empire Rate Case	9.25%	4
Adjustment of Empire's Authorized ROE with DCF COE estimate to reflect Increase in COE, and setting of Upper Limit of Range of Reasonableness	9.67%	5
Lower Limit of Range of Reasonableness	9.25%	6
Range of Reasonableness with Upper Limit rounded down to 9.75%	9.25% - 9.75%	7

Recommended Authorized ROE; Midpoint of the Reasonable Range	9.50%	8
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¹ Schedule PC-9-1

² Schedule PC-9-2

³ H6⁽¹⁾-H12⁽³⁾

⁴ Empire Commission Authorized ROE, Case No. ER-2019-0374

⁵ H15⁽⁴⁾+H14⁽³⁾

⁶ Empire Commission Authorized ROE, Case No. ER-2019-0374

⁷ Range of reasonableness

⁸ Point Estimate of Recommended Authorized ROE

**Recommended Allowed Rate of Return as of October 29, 2021
for The Empire District Electric Company**

	[1]	[2]	[3]	[4]	[5]
	Allowed Rate of Return Using Common Equity Return of:				
Capital Components	Percentage of Capital	Embedded Cost			
			9.25%	9.50%	9.75%
Long-Term Debt	47.56%	3.76%	1.79%	1.79%	1.79%
Common Equity	52.44%	---	4.85%	4.98%	5.11%
Total	100%		6.64%	6.77%	6.90%

[1] Capital Structure Ratios, Response to DR. 0651

[2] Source: Long-Term Debt Cost - Response to Data Request No. 0114, Case No. GR-2021-0241
Preferred Stock - Response to Data Request No. 0114, Case No. GR-2021-0241