

Chapter 1 - Appendix A

Supplemental Information

Company Description

Ameren Missouri has been providing electric and gas service for more than 100 years, and the company's electric rates are among the lowest in the nation. Ameren Missouri's mission is to power the quality of life for its 1.2 million electric and 127,000 natural gas customers in central and eastern Missouri. The company's service area covers 64 counties and more than 500 communities, including the greater St. Louis area. For more information, visit Ameren.com/Missouri or follow us at [@AmerenMissouri](https://www.facebook.com/AmerenMissouri) or [Facebook.com/Ameren Missouri](https://www.facebook.com/AmerenMissouri).

Existing Purchase Power Arrangements

In June 2009, Ameren Missouri and Pioneer Prairie Wind Farm, LLC. entered into a 15-year power purchase agreement. Ameren Missouri is purchasing 102.3 MWs of generation from the Pioneer Prairie Wind Farm consisting of 65 turbines, located in Northeast Iowa. The facility site covers approximately 10,000 acres of land located in Mitchell County, Iowa in Wayne and Stacyville Townships. The contract term concludes on August 31, 2024.

Uncertain Factors

The following uncertain factors have been considered in our planning analysis and the selection of the preferred resource plan:

- Natural gas prices – Approximately \$2.58 to \$4.35 per MMBtu in today's dollars.
- Carbon dioxide emissions price – See chart in Chapter 1
- Cost of demand side programs – A range of levels for the cost of inducing customer participation at those levels.

Existing Demand-Side Programs

The summary table below summarizes the programs included in the current MEEIA plan as approved by the Missouri Public Service Commission (MPSC) in File No. EO-2018-0211. The summary table provides the estimated budget allocation and filed gross energy and demand savings targets associated with each program for Program Year 2022 - 2024. Final evaluation results for Program Year 2022 were approved by the MPSC on July 12, 2022. The Independent Evaluator found first year net energy savings of 155,081 MWh (79% of filed goals) and first year net demand savings of 56.2 MW (94% of filed goals).

Programs are currently being implemented for the period January 2023 to December 2024.

Summary of MEEIA 2022-24 Approved Program Extensions

Portfolio Total	Total Allocated Costs			Incremental Gross MWH			Incremental Gross MWH		
	2022	2023	2024	2022	2023	2024	2022	2023	2024
Low-Income	\$13.10	\$14.49	\$14.10	17,858	15,563	14,147	5.35	3.58	3.64
Demand Response	\$11.56	\$13.30	\$15.30	3,135	-	-	43.62	8.09	38.21
Residential	\$18.76	\$19.94	\$19.94	56,301	52,506	52,506	26.18	28.49	28.49
Business	\$27.08	\$26.92	\$26.92	158,681	123,250	123,250	39.89	39.77	39.77
Portfolio-Total	\$70.50	\$74.65	\$76.25	235,975	191,319	189,904	115.05	79.93	110.12
Low-Income									
Multifamily Low-Income	\$6.49	\$6.23	\$8.48	9,754	5,853	8,048	3.29	1.6	2.21
Single Family Low-Income	\$3.06	\$3.05	\$3.05	1,622	1,087	1,087	0.59	0.46	0.46
Targeted Community LED Lighting ¹	\$1.45	\$2.64	\$-	565	3,610	-	0.08	0.54	-
Business Social Services	\$2.09	\$2.57	\$2.57	5,918	5,012	5,012	1.39	0.98	0.98
Low-Income Total	\$13.10	\$14.49	\$14.10	17,858	15,563	14,147	5.35	3.58	3.64
Demand Response									
Residential Demand Response	\$6.58	\$7.74	\$7.74	2,635	-	-	18.62	8.09	1.17
Business Demand Response ²	\$4.98	\$5.56	\$7.56	500	-	-	25	-	37.04
Demand Response Total	\$11.56	\$13.30	\$15.30	3,135	-	-	43.62	8.09	38.21
Residential									
Efficient Products	\$2.20	\$2.15	\$2.15	10,161	5,180	5,180	3.36	1.8	1.8
HVAC	\$11.75	\$12.82	\$12.82	33,087	35,433	35,433	17.23	20.81	20.81
Multifamily Market Rate	\$1.56	\$1.91	\$1.91	4,319	4,181	4,181	1.52	2.28	2.28
PAYS ²	\$3.24	\$3.06	\$3.06	8,735	7,713	7,713	4.07	3.59	3.59
Residential Total	\$18.76	\$19.94	\$19.94	56,301	52,506	52,506	26.18	28.49	28.49
Business									
Custom	\$12.96	\$12.87	\$12.87	77,722	44,994	44,994	22.6	20.09	20.09
Retro-Commissioning	\$1.44	\$1.59	\$1.59	8,111	5,137	5,137	2.97	2.13	2.13
Small Business Direct Install	\$2.74	\$2.65	\$2.65	11,777	12,279	12,279	2.12	2.44	2.44
Standard	\$9.94	\$9.81	\$9.81	61,072	60,841	60,841	12.2	15.12	15.12
Business Total	\$27.08	\$26.92	\$26.92	158,681	123,250	123,250	39.89	39.77	39.77
Notes:									
¹ PY2024 discontinues Targeted Community LED Lighting program									
² PY2024 Business Demand Response includes additional budget & savings to allow Opt-out customer participation									

Implementation

The following key steps will be part of our implementation of the preferred resource plan over the next three years:

- Implementation of MEEIA Cycle 3 energy efficiency and demand response programs in 2024 as extended and filing an updated MEEIA Cycle 4 application with the Commission in early 2024.
- Bid solicitation, contractor selection, applying for certificates of convenience and necessity (CCN), and construction for wind and solar resources. CCN applications are currently before the MPSC for four solar projects totaling 550 MW. Additional solar project CCN applications are expected to be filed with the MPSC in the second quarter of 2024. A new request for proposal process for wind resources will be initiated by the first quarter of 2024.
- Continue with implementation of Huck Finn and Boomtown solar projects.
- Site selection, permitting, engineering, and procurement, as well as steps to secure interconnection within MISO and CCN application in 2024 for the 800 MW dual fuel simple cycle CTG.
- Site selection, permitting, engineering, and procurement, as well as steps to secure interconnection within MISO for the combined cycle generation, which is expected to come online after Sioux Energy Center retirement.
- Preparation for the retirement of Rush Island Energy Center by the end of 2024 and Sioux Energy Center by the end of 2032, including identification, approval, engineering and construction of transmission infrastructure needed to ensure ongoing grid reliability.

Ameren Missouri Base Load Forecasts

Without DSM

Average Annual Class Energy Forecast

Annual Energy Sales Forecast by Rate Class (MWh)

Year	ResGen	ComSGS	ComLGS	ComSPS	ComLPS	IndSGS	IndLGS	IndSPS	IndLPS	Lighting	Economic Development	Total
2024	12,884,297	2,981,069	6,533,681	2,383,555	1,421,326	75,651	771,107	1,139,617	2,264,099	136,989	0	30,591,390
2025	12,746,876	2,974,820	6,531,939	2,392,337	1,423,909	76,638	791,005	1,154,241	2,262,057	134,971	280	30,489,074
2026	12,737,050	2,972,088	6,559,971	2,395,438	1,424,142	77,547	813,563	1,163,937	2,262,914	132,442	561	30,539,654
2027	12,740,524	2,976,187	6,611,314	2,411,633	1,425,649	78,457	840,039	1,173,432	2,263,664	129,767	841	30,651,507
2028	12,849,391	2,979,399	6,723,492	2,422,575	1,428,804	79,127	928,038	1,178,392	2,269,961	129,517	1,121	30,989,816
2029	12,971,452	2,965,495	6,777,497	2,421,234	1,426,125	79,780	1,001,117	1,190,412	2,266,668	129,488	1,332	31,230,599
2030	13,088,605	2,952,801	6,825,908	2,419,849	1,422,413	80,434	1,071,143	1,200,091	2,269,154	129,537	1,472	31,461,406
2031	13,201,700	2,930,053	6,859,691	2,414,529	1,416,330	80,812	1,138,882	1,207,145	2,268,225	129,911	1,542	31,648,820
2032	13,370,537	2,916,383	6,911,616	2,416,442	1,414,804	81,093	1,204,398	1,208,638	2,270,029	129,759	1,542	31,925,242
2033	13,503,164	2,898,526	6,954,820	2,408,558	1,409,241	81,283	1,268,265	1,216,089	2,265,468	129,999	1,542	32,136,954
2034	13,708,043	2,899,457	7,015,594	2,411,239	1,410,139	81,002	1,331,837	1,215,155	2,265,700	129,898	1,542	32,469,605
2035	13,918,130	2,900,205	7,075,113	2,414,553	1,411,412	80,724	1,394,469	1,214,117	2,265,841	129,824	1,542	32,805,929
2036	14,160,658	2,908,941	7,137,610	2,425,769	1,417,320	80,360	1,461,046	1,210,566	2,272,672	129,965	1,542	33,206,448
2037	14,325,654	2,900,259	7,163,481	2,424,118	1,416,738	80,111	1,526,244	1,215,069	2,269,469	130,391	1,542	33,453,076
2038	14,540,123	2,904,917	7,224,944	2,430,835	1,421,140	79,624	1,590,361	1,213,093	2,270,523	130,393	1,542	33,807,495
2039	14,764,635	2,913,594	7,285,941	2,438,684	1,426,620	78,942	1,654,949	1,209,810	2,272,794	130,562	1,542	34,178,073
2040	15,013,432	2,919,319	7,348,561	2,446,367	1,432,216	78,032	1,719,198	1,201,419	2,278,235	130,300	1,542	34,568,621
2041	15,164,204	2,910,192	7,376,493	2,442,890	1,431,987	77,410	1,789,537	1,203,651	2,276,789	130,764	1,542	34,805,460
2042	15,352,550	2,908,349	7,423,386	2,445,977	1,435,552	76,630	1,858,521	1,200,665	2,277,484	130,696	1,542	35,111,351
2043	15,525,977	2,903,189	7,463,524	2,449,528	1,439,874	75,847	1,927,768	1,198,676	2,277,939	130,710	1,542	35,394,573

Without DSM**Forecasted Total Demand at the Time of Annual System Peak****Forecast of Class Demand at the Time of Annual System Peak (MW)**

Year	Residential	ComSGS	ComLGS	ComSPS	ComLPS	IndSGS	IndLGS	IndSPS	IndLPS	Lighting	Economic Development	System Demand
2024	3,644	657	1,382	450	295	12	118	167	324	0.00	0	7,049
2025	3,609	665	1,389	452	296	12	114	163	315	0.00	28	7,043
2026	3,596	662	1,388	450	295	13	125	170	318	0.00	56	7,072
2027	3,586	661	1,393	453	295	13	131	173	320	0.00	84	7,108
2028	3,491	673	1,449	475	307	19	139	177	343	0.00	112	7,184
2029	3,519	669	1,449	471	305	18	142	176	345	0.00	133	7,227
2030	3,528	673	1,469	475	307	19	142	173	339	0.00	147	7,271
2031	3,508	673	1,485	478	309	20	150	176	339	0.00	154	7,292
2032	3,630	647	1,442	449	292	13	184	178	319	0.00	154	7,307
2033	3,627	645	1,449	448	291	14	190	177	323	0.00	154	7,318
2034	3,581	657	1,491	460	297	14	208	180	339	0.00	154	7,382
2035	3,688	654	1,465	455	295	16	182	176	340	0.00	154	7,424
2036	3,725	662	1,476	460	299	16	172	173	337	0.00	154	7,473
2037	3,627	671	1,537	463	300	18	232	172	327	0.00	154	7,501
2038	3,742	643	1,485	443	289	13	230	172	314	0.00	154	7,485
2039	3,764	645	1,496	443	289	13	239	171	316	0.00	154	7,530
2040	3,760	657	1,541	453	294	13	256	169	330	0.00	154	7,627
2041	3,772	659	1,545	475	308	18	212	177	337	0.00	154	7,658
2042	3,784	654	1,559	480	309	16	218	181	351	0.00	154	7,706
2043	3,805	669	1,583	456	297	12	296	173	326	0.00	154	7,772

With DSM

Average Annual Class Energy Forecast

Annual Energy Sales Forecast by Rate Class (MWh)¹

Year	ResGen	ComSGS	ComLGS	ComSPS	ComLPS	IndSGS	IndLGS	IndSPS	IndLPS	Lighting	Economic Development	Total
2024	12,760,901	2,952,519	6,471,106	2,360,728	1,407,713	74,927	763,722	1,128,703	2,242,415	136,989	0	30,299,722
2025	12,502,889	2,917,879	6,406,912	2,346,545	1,396,654	75,171	775,865	1,132,148	2,218,760	134,971	280,320	30,188,113
2026	12,372,473	2,887,017	6,372,203	2,326,873	1,383,379	75,328	790,276	1,130,621	2,198,142	132,442	560,640	30,229,394
2027	12,259,056	2,863,717	6,361,471	2,320,497	1,371,774	75,492	808,294	1,129,088	2,178,119	129,767	840,960	30,338,234
2028	12,252,769	2,841,059	6,411,308	2,310,090	1,362,462	75,453	884,947	1,123,677	2,164,563	129,517	1,121,280	30,677,124
2029	12,262,118	2,803,329	6,406,875	2,288,831	1,348,138	75,417	946,372	1,125,315	2,142,717	129,488	1,331,520	30,860,120
2030	12,274,147	2,769,059	6,401,156	2,269,270	1,333,901	75,429	1,004,489	1,125,414	2,127,953	129,537	1,471,680	30,982,035
2031	12,281,482	2,725,815	6,381,540	2,246,226	1,317,605	75,179	1,059,497	1,123,002	2,110,119	129,911	1,541,760	30,992,136
2032	12,343,765	2,692,423	6,380,848	2,230,875	1,306,156	74,866	1,111,908	1,115,823	2,095,705	129,759	1,541,760	31,023,888
2033	12,379,245	2,657,271	6,375,944	2,208,085	1,291,944	74,517	1,162,702	1,114,869	2,076,905	129,999	1,541,760	31,013,241
2034	12,487,024	2,641,193	6,390,692	2,196,462	1,284,533	73,787	1,213,206	1,106,918	2,063,886	129,898	1,541,760	31,129,359
2035	12,602,325	2,626,023	6,406,239	2,186,284	1,277,978	73,092	1,262,638	1,099,336	2,051,630	129,824	1,541,760	31,257,129
2036	12,756,227	2,620,437	6,429,714	2,185,185	1,276,753	72,390	1,316,141	1,090,504	2,047,272	129,965	1,541,760	31,466,348
2037	12,845,562	2,600,611	6,423,368	2,173,664	1,270,364	71,834	1,368,557	1,089,531	2,034,993	130,391	1,541,760	31,550,634
2038	12,990,050	2,595,233	6,454,718	2,171,692	1,269,637	71,136	1,420,818	1,083,769	2,028,470	130,393	1,541,760	31,757,676
2039	13,153,520	2,595,663	6,490,900	2,172,576	1,270,948	70,328	1,474,361	1,077,796	2,024,787	130,562	1,541,760	32,003,201
2040	13,343,877	2,594,679	6,531,371	2,174,321	1,272,947	69,355	1,528,017	1,067,816	2,024,886	130,300	1,541,760	32,279,328
2041	13,442,287	2,579,735	6,538,882	2,165,496	1,269,383	68,620	1,586,333	1,066,975	2,018,257	130,764	1,541,760	32,408,491
2042	13,581,265	2,572,801	6,566,921	2,163,775	1,269,926	67,789	1,644,096	1,062,139	2,014,721	130,696	1,541,760	32,615,889
2043	13,709,936	2,563,609	6,590,531	2,163,012	1,271,455	66,975	1,702,281	1,058,469	2,011,493	130,710	1,541,760	32,810,231

¹ The DSM Potential Study is not performed at the rate class level; therefore, allocation factors were used to attribute RAP energy efficiency impacts to the classes reported.

With DSM**Forecasted Total Demand at the time of Annual System Peak****Forecast of Class Demand at the Time of Annual System Peak (MW)²**

Year	Residential	ComSGS	ComLGS	ComSPS	ComLPS	IndSGS	IndLGS	IndSPS	IndLPS	Lighting	Economic Development	System Demand
2024	3,592	648	1,362	444	291	12	116	164	319	0.00	0	6,948
2025	3,506	646	1,349	439	287	12	110	158	306	0.00	28	6,841
2026	3,441	633	1,328	431	282	12	120	162	304	0.00	56	6,769
2027	3,380	623	1,313	427	278	12	124	163	301	0.00	84	6,705
2028	3,243	625	1,346	441	285	18	129	165	318	0.00	112	6,682
2029	3,223	612	1,327	431	279	17	130	161	316	0.00	133	6,629
2030	3,193	609	1,329	430	278	17	128	157	307	0.00	147	6,595
2031	3,139	602	1,329	428	277	17	134	158	304	0.00	154	6,541
2032	3,211	572	1,275	397	258	12	163	157	282	0.00	154	6,482
2033	3,176	565	1,269	392	255	12	166	155	283	0.00	154	6,427
2034	3,109	571	1,295	400	258	12	180	156	295	0.00	154	6,429
2035	3,176	563	1,261	392	254	13	157	151	293	0.00	154	6,414
2036	3,186	566	1,262	393	256	14	147	148	288	0.00	154	6,414
2037	3,083	571	1,307	393	255	15	197	146	278	0.00	154	6,400
2038	3,162	543	1,255	374	244	11	195	145	265	0.00	154	6,348
2039	3,170	543	1,260	373	244	11	201	144	266	0.00	154	6,366
2040	3,162	552	1,296	381	247	11	215	142	277	0.00	154	6,438
2041	3,164	553	1,296	399	259	15	178	149	283	0.00	154	6,447
2042	3,167	547	1,305	402	259	13	183	151	294	0.00	154	6,475
2043	3,181	560	1,324	382	248	10	248	145	273	0.00	154	6,523

² The DSM Potential Study is not performed at the rate class level; therefore, allocation factors were used to attribute RAP energy efficiency impacts to the classes reported.

Economic Assumptions

Several economic indicators were used as independent variables (independent variables in the forecasting models are often referred to as “drivers”) in our energy forecasting process.

- For the residential class, income, population, and the number of households in the service territory were used as drivers. These drivers are consistent with drivers used in all recent IRP forecasts.
- For the four classes of commercial sales (small general service, large general service, small primary service, large primary service), gross domestic product (GDP) for one or more of six sectors of the economy were used as drivers. Those six sectors were Retail Trade, Information Services, Financial Services, and Education/Health Services, Leisure, and Other Services and these six sectors account for almost all the non-manufacturing and non-government entries in the top employers list. These drivers are consistent with drivers used in all recent IRP forecasts except to the extent that a different sector may have been included for a particular rate class as compared with a previous forecast, only if the analysis of historical correlation of that driver to the historical loads indicated a better relationship between the two.
- For the four classes of industrial sales (same classes as in commercial listed above), one or more of the following drivers were used: GDP, Manufacturing GDP, Employment, and Manufacturing Employment. These variables are consistent with past load forecast drivers for the industrial class.
- The table below illustrates these drivers and their expected growth over the IRP horizon.

Growth Rates of Select Economic Drivers

Driver Variable	2024-2043 Compound Growth Rate
Households	0.1%
Population	-0.2%
Real Personal Income	3.7%
GDP Retail	1.7%
GDP Info	2.6%
GDP Financial	1.2%
GDP Education /Health	1.9%
GDP Leisure	1.8%
GDP Other Services	-0.2%
GDP Total	1.6%
GDP Manufacturing	1.8%
Employment Total	0.0%
Manufacturing Employment	-1.1%

As in prior IRPs and IRP Annual Updates, the economic forecasting firm Moody's Analytics was used as the source for the forecasts of these economic drivers. Moody's Analytics is a highly reputable firm in the macroeconomic forecasting arena with a specialized competency in doing this work, and Ameren Missouri has extensive history using their forecasts and has consistently found them to be credible. Their forecasts are done for individual counties and Ameren Missouri aggregates those counties that make up its service territory. The forecasting models used by Moody's are proprietary and not available to Ameren Missouri.

Performance Measures – Preferred Resource Plan

Annual Revenue Requirements and Rates

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Financial Measures³

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³ The table includes an adjusted debt/adjusted capitalization ratio.