Cumberland Valley Electric

2020 Load Forecast

November 2020

Prepared by: EKPC's Load Forecasting Department

Cumberland Valley Electric, Inc.

EAST KENTUCKY POWER COOPERATIVE

A Touchstone Energy Cooperative

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Introduction
Executive Summary

Cumberland Valley Electric, located in Gray, Kentucky, is an electric distribution cooperative that serves members in nine counties in Kentucky and two counties in Tennessee. This load forecast report contains Cumberland Valley Electric's long-range forecast of energy and peak demand.

Cumberland Valley Electric and its power supplier, East Kentucky Power Cooperative (EKPC), worked jointly to prepare the load forecast. Factors considered in preparing the forecast include the national and local economy, population and housing trends, service area industrial development, electric price, household income, weather, and appliance efficiency changes.

EKPC prepared a preliminary load forecast, which was reviewed by Cumberland Valley Electric for reasonability. Final projections reflect a rigorous analysis of historical data combined with the experience and judgment of the President/CEO and staff of Cumberland Valley Electric. Key assumptions are reported beginning on page 11.

Executive Summary *(continued)*

The load forecast is prepared every two years as part of the overall planning cycle at EKPC and Cumberland Valley Electric. Cooperation helps to ensure that the forecast meets both parties' needs Cumberland Valley Electric uses the forecast in developing three-year work plans, long-range work plans, and financial forecasts. EKPC uses the forecast in areas of generation planning, transmission planning, demand-side planning, marketing analysis, and financial forecasting.

The complete load forecast for Cumberland Valley Electric is reported in Table 1-1 on pages 5 and 6. Residential and commercial sales, total purchases, winter and summer peak demands, and load factor are presented for the years 2010 through 2040.

Table 1-1
MWh Summary

Year	Residential Sales (MWh)	Small Comm. Sales (MWh)	Large Comm. Sales (MWh)	Total Sales (MWh)	Office Use (MWh)	% Loss	Purchased Power (MWh)
2010	354,767	85,855	104,534	545,156	421	4.1	568,837
2011	317,071	83,703	106,477	507,251	397	4.1	529,440
2012	300,398	81,539	91,225	473,162	414	4.8	497,706
2013	314,849	81,701	68,690	465,239	588	4.9	489,976
2014	324,559	84,677	68,978	478,214	658	3.9	498,107
2015	306,953	87,538	57,660	452,151	589	4.3	472,918
2016	306,233	80,393	53,850	440,476	534	4.8	463,420
2017	285,649	75,579	52,018	413,246	473	5.1	436,069
2018	316,052	79,674	53,196	448,922	514	4.5	470,541
2019	303,936	79,686	41,156	424,777	533	3.9	442,563
2020	302,162	74,187	39,828	416,177	529	4.5	436,443
2021	312,654	82,904	45,715	441,273	529	4.5	462,728
2022	314,300	82,963	47,617	444,881	529	4.5	466,506
2023	313,914	83,800	48,883	446,596	529	4.5	468,303
2024	313,939	84,227	49,725	447,891	529	4.5	469,659
2025	313,434	84,528	50,285	448,247	529	4.5	470,032
2026	313,170	84,885	50,658	448,714	529	4.5	470,521
2027	313,044	84,910	50,907	448,861	529	4.5	470,675
2028	314,305	84,910	51,072	450,286	529	4.5	472,168
2029	313,607	85,224	51,182	450,013	529	4.5	471,881
2030	312,964	85,528	51,255	449,747	529	4.5	471,603
2031	312,531	85,859	51,304	449,693	529	4.5	471,546
2032	313,915	85,901	51,336	451,152	529	4.5	473,074
2033	313,562	86,040	59,622	459,223	529	4.5	481,528
2034	314,641	86,176	59,636	460,453	529	4.5	482,816
2035	315,844	86,168	59,645	461,657	529	4.5	484,077
2036	318,402	86,375	59,652	464,429	529	4.5	486,980
2037	319,016	86,384	59,656	465,056	529	4.5	487,637
2038	320,524	86,435	59,659	466,618	529	4.5	489,273
2039	322,085	86,481	59,661	468,228	529	4.5	490,959
2040	324,569	86,578	59,662	470,810	529	4.5	493,663

Table 1-1 *(continued)*

Peaks Summary

	Winter		*Summer*					
Season	Non-Coincident Peak Demand (MW)	Year	Non-Coincident Peak Demand (MW)	Year	Purchased Power (MWh)	Load Factor (%)	Temperature at time of Winter Peak	Temperature at time of Summer Peak
2009 - 10	141.3	2010	112.4	2010	568,837	45.9%	5° F	95° F
2010 - 11	148.0	2011	113.1	2011	529,440	40.8%	13° F	91° F
2011 - 12	126.8	2012	106.7	2012	497,706	44.7%	17° F	103° F
2012 - 13	120.1	2013	92.2	2013	489,976	46.6%	10° F	89° F
2013 - 14	155.6	2014	97.9	2014	498,107	36.5%	-1° F	89° F
2014 - 15	161.1	2015	91.6	2015	472,918	33.5%	-7° F	90° F
2015- 16	125.7	2016	93.4	2016	463,420	42.0%	6° F	94° F
2016 - 17	113.3	2017	87.7	2017	436,069	43.9%	8° F	92° F
2017 - 18	143.3	2018	89.4	2018	470,541	37.5%	0° F	93° F
2018 - 19	120.6	2019	88.5	2019	442,563	41.9%	4° F	91° F
2019 - 20	113.6	2020	91.4	2020	436,443	43.7%	15° F	91° F
2020 - 21	144.4	2021	97.6	2021	462,728	36.6%		
2021 - 22	145.6	2022	98.7	2022	466,506	36.6%		
2022 - 23	146.1	2023	99.1	2023	468,303	36.6%		
2023 - 24	146.3	2024	99.0	2024	469,659	36.6%		
2024 - 25	146.3	2025	99.0	2025	470,032	36.7%		
2025 - 26	146.4	2026	99.3	2026	470,521	36.7%		
2026 - 27	146.9	2027	99.8	2027	470,675	36.6%		
2027 - 28	148.0	2028	100.3	2028	472,168	36.3%		
2028 - 29	148.1	2029	100.6	2029	471,881	36.4%		
2029 - 30	148.0	2030	100.8	2030	471,603	36.4%		
2030 - 31	148.1	2031	101.1	2031	471,546	36.3%		
2031 - 32	149.0	2032	101.8	2032	473,074	36.1%		
2032 - 33	150.0	2033	103.6	2033	481,528	36.6%		
2033 - 34	150.7	2034	104.2	2034	482,816	36.6%		
2034 - 35	151.4	2035	104.9	2035	484,077	36.5%		
2035 - 36	152.8	2036	105.8	2036	486,980	36.3%		
2036 - 37	153.2	2037	106.5	2037	487,637	36.3%		
2037 - 38	154.1	2038	107.2	2038	489,273	36.3%		
2038 - 39	155.0	2039	108.0	2039	490,959	36.2%		
2039 - 40	156.3	2040	108.9	2040	493,663	36.1%		

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Executive Summary *(continued)*

Overall Results

- Total sales are projected to grow by 0.6 percent a year for the period 2020-2040, compared to a 0.4 percent growth projected in the 2018 load forecast for the period 2018-2038. Results shown in Table 1-2.

- Winter peak demands are projected to increase 0.4 percent over the 19 year forecast (2021-2040). Summer peak demands for the same period indicate growth of 0.6 percent.

- Load factor decreases from 36.6% to 36.1% through the forecast period.

Executive Summary *(continued)*

Overall Results – Table 1-2

	Time Period	Residential	Small Commercial	Large Commercial	Total Sales
5-Year	2014 - 2019	-1.3%	-1.2%	-9.8%	-2.3%
	2020 - 2025	0.7%	2.6%	4.8%	1.5%
10-Year	2009 - 2019	-0.5%	0.6%	-9.2%	-1.7%
	2020 - 2030	0.4%	1.4%	2.6%	0.8%
15-Year	2004 - 2019	0.0%	0.9%	-5.4%	-0.6%
	2020 - 2035	0.3%	1.0%	2.7%	0.7%
20-Year	1999 - 2019	0.6%	0.0%	-4.9%	-0.4%
	2020 - 2040	0.4%	0.8%	2.0%	0.6%

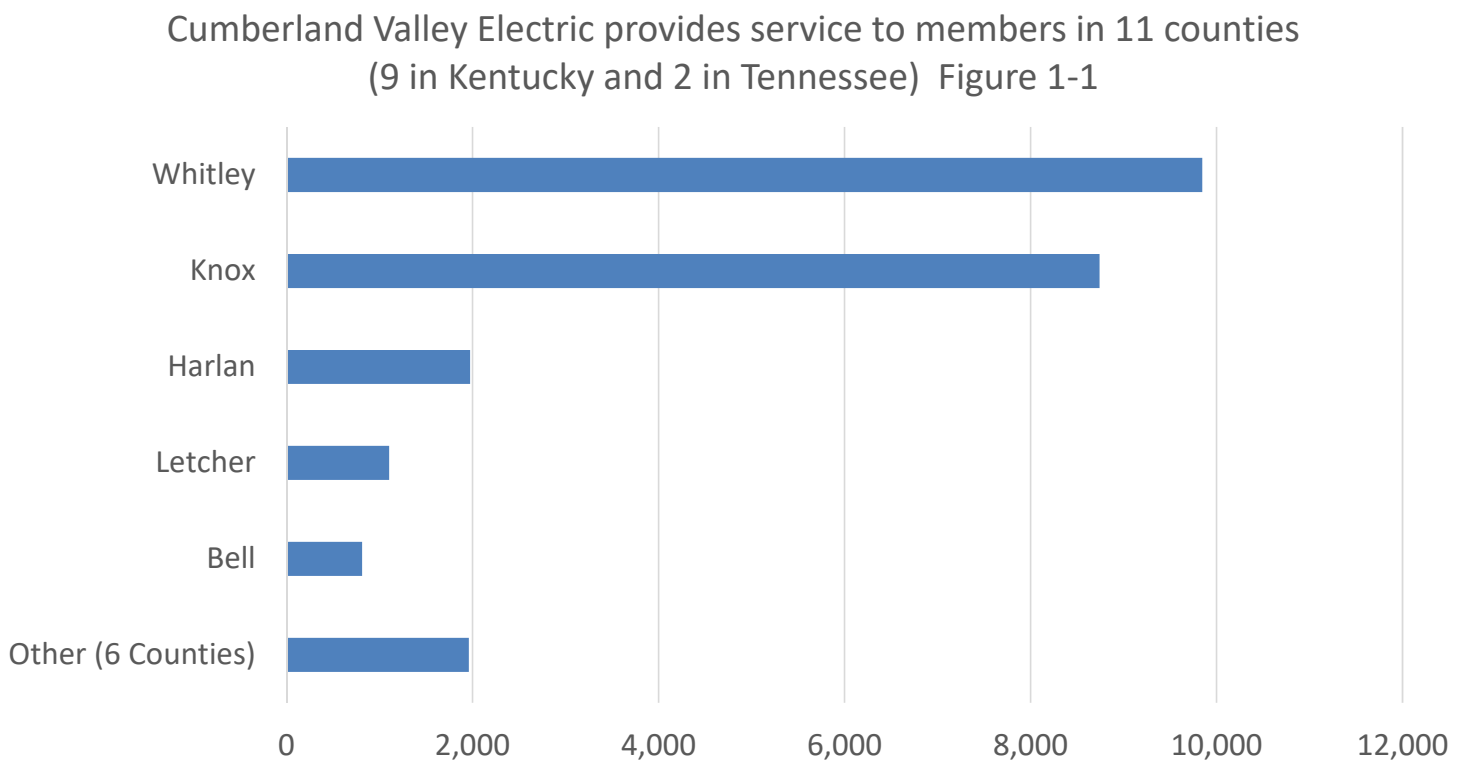
Narrative

The service area of Cumberland Valley Electric is located in the eastern Kentucky Counties of Bell, Clay, Harlan, Knox, Laurel, Leslie, Letcher, McCreary and Whitley. Additionally, they serve Campbell and Claiborne in Tennessee.

The average household has 2.22 people; nearly 81 percent of all homes are headed by someone age 55 or greater.

Narrative *(continued)*

Counties Served



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Key Assumptions

Economic History and Forecast
Table 1-3

	Time Period	Population	Households	Total Employment	Total Real Personal Income
5 Year Growth Rates	2014 - 2019	-0.4%	-0.2%	-0.6%	2.1%
	2020 - 2025	-0.3%	0.1%	2.2%	2.0%
10 Year Growth Rates	2009 - 2019	-0.4%	-0.2%	-0.8%	1.8%
	2020 - 2030	-0.3%	0.2%	1.2%	2.9%
15 Year Growth Rates	2004 - 2019	-0.2%	-0.2%	-0.6%	2.9%
	2020 - 2035	-0.3%	0.2%	0.9%	3.1%
20 Year Growth Rates	1999 - 2019	-0.2%	-0.1%	-0.4%	3.2%
	2020 - 2040	-0.3%	0.2%	0.8%	3.2%

- *EKPC's source for economic forecasts is IHS Global Insight. Total Real Personal Income is reported in millions of 2005 dollars. Growth rates shown are Compound Annual Growth Rates.*

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Key Assumptions *(continued)*
Appliance Saturations

- 59% of customers use electric as a primary fuel for heating, while 22% use it as a secondary fuel.
  - 18% use electric furnaces and 53% use electric heat pumps.
- 80% of customers use central air and 19% use electric/window units.
- 84% of customers use electric water heaters.
- These saturations are not expected to change significantly by 2040.

Key Assumptions *(continued)*

Saturation Rates – Percent of Homes with One or More Non-HVAC Appliances

- Electric Range 82%
- Freezer 60%
- Smart TV 69%

Appliance Efficiency Projections

- Energy Information Association (EIA) projects appliance efficiencies each year.
- Similar to last year's projections, heating and cooling equipment show slow but steady increase.
- Water heater efficiency is remaining relatively flat.

Key Assumptions *(continued)*

Weather

- Weather data is from the Jackson weather station.

- Normal weather, a 20-year average of historical temperatures, is assumed for the forecast years.

Methodology and Results

Introduction

This section briefly describes the methodology used to develop the load forecast and presents results in tabular form for residential and commercial classifications. Table 1-4 reports historical data for Cumberland Valley Electric as reported on RUS Form 7.

Typically, a preliminary forecast is prepared during the first quarter depending on when Cumberland Valley Electric experiences its winter peak. The first step is modeling the regional economy. Employment and real gross county product are among the areas analyzed. The regional model results are used in combination with the historical billing information, appliance saturation data, appliance efficiency data, and weather data to develop the long range forecast.

Table 1-4 Cumberland Valley Electric Comparative Annual Operating Data

Year	kWh Purchased And Generated	Change	kWh Sold	Change	kWh Loss	% Loss	Billing Peak Demand (MW)	Average Number Of Consumers	Miles Of Line	Consumers Per Mile	Cost Of Purchased Power	Cents / kWh
2010	568,837,293	7.5%	545,156,016	8.3%	23,260,657	4.1%	148.0	23,749	2,616	9.1	$36,844,796	6.5
2011	529,439,880	-6.9%	507,250,621	-7.0%	21,792,299	4.1%	140.8	23,684	2,614	9.1	$37,560,882	7.1
2012	497,705,994	-6.0%	473,161,995	-6.7%	24,129,999	4.8%	126.8	23,613	2,626	9.0	$36,085,688	7.3
2013	489,975,525	-1.6%	465,239,391	-1.7%	24,147,957	4.9%	120.1	23,659	2,633	9.0	$35,772,176	7.3
2014	498,106,950	1.7%	478,213,942	2.8%	19,234,772	3.9%	155.6	23,619	2,639	8.9	$36,454,328	7.3
2015	472,918,391	-5.1%	452,150,592	-5.5%	20,178,951	4.3%	161.1	23,586	2,643	8.9	$33,459,526	7.1
2016	463,419,608	-2.0%	440,476,362	-2.6%	22,408,848	4.8%	125.4	23,620	2,655	8.9	$31,802,176	6.9
2017	436,068,508	-5.9%	413,246,369	-6.2%	22,349,260	5.1%	115.6	23,636	2,666	8.9	$30,052,394	6.9
2018	470,541,365	7.9%	448,922,152	8.6%	21,105,493	4.5%	143.3	23,636	2,677	8.8	$31,960,830	6.8
2019	442,563,458	-5.9%	424,777,329	-5.4%	17,252,813	3.9%	120.6	23,663	2,685	8.8	$29,927,607	6.8
Average						4.4%						6.6

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Methodology and Results *(continued)*

The preliminary forecast was presented to Cumberland Valley Electric staff. Changes were made to the forecast as needed based on new information, such as new large loads or subdivisions. In some cases, other assumptions were based on insights from Cumberland Valley Electric staff.

Methodology and Results *(continued)*

Residential Forecast

Residential customers are analyzed by means of regression analysis with resulting coefficients used to prepare customer projections. Regressions for residential customers are typically a function of regional economic and demographic variables. Two variables that are very significant are the numbers of households by county and the percent of total households served by the member cooperative. Table 1-5 reports Cumberland Valley Electric's customer forecast.

The residential energy sales were analyzed by means of regression analysis, as a function of residential customers, base 60 heating degree days, base 65 cooling degree days and projected residential rates. Table 1-5 reports Cumberland Valley Electric's energy forecast.

Table 1-5
Residential Summary

	Customers			*Use Per Customer*			*Class Sales*		
	Annual Average	Annual Change	% Change	Monthly Average (kWh)	Change (kWh)	% Change	Total (MWh)	Annual Change (MWh)	% Change
2010	22,261	15	0.1	1,328	125	10.4	354,767	33,629	10.5
2011	22,183	-78	-0.4	1,191	-137	-10.3	317,071	-37,697	-10.6
2012	22,049	-134	-0.6	1,135	-56	-4.7	300,398	-16,672	-5.3
2013	22,087	38	0.2	1,188	53	4.6	314,849	14,451	4.8
2014	22,024	-63	-0.3	1,228	40	3.4	324,559	9,710	3.1
2015	21,982	-42	-0.2	1,164	-64	-5.2	306,953	-17,606	-5.4
2016	22,031	49	0.2	1,158	-5	-0.5	306,233	-720	-0.2
2017	22,047	16	0.1	1,080	-79	-6.8	285,649	-20,584	-6.7
2018	22,049	2	0.0	1,195	115	10.6	316,052	30,404	10.6
2019	22,050	1	0.0	1,149	-46	-3.8	303,936	-12,116	-3.8
2020	22,250	200	0.9	1,132	-17	-1.5	302,162	-1,773	-0.6
2021	22,428	178	0.8	1,162	30	2.7	312,654	10,492	3.5
2022	22,585	157	0.7	1,160	-2	-0.2	314,300	1,647	0.5
2023	22,636	51	0.2	1,156	-4	-0.3	313,914	-386	-0.1
2024	22,677	41	0.2	1,154	-2	-0.2	313,939	26	0.0
2025	22,719	42	0.2	1,150	-4	-0.3	313,434	-506	-0.2
2026	22,739	20	0.1	1,148	-2	-0.2	313,170	-264	-0.1
2027	22,760	21	0.1	1,146	-1	-0.1	313,044	-126	0.0
2028	22,780	20	0.1	1,150	4	0.3	314,305	1,261	0.4
2029	22,801	21	0.1	1,146	-4	-0.3	313,607	-698	-0.2
2030	22,821	20	0.1	1,143	-3	-0.3	312,964	-643	-0.2
2031	22,842	21	0.1	1,140	-3	-0.2	312,531	-433	-0.1
2032	22,863	21	0.1	1,144	4	0.4	313,915	1,384	0.4
2033	22,883	20	0.1	1,142	-2	-0.2	313,562	-353	-0.1
2034	22,904	21	0.1	1,145	3	0.3	314,641	1,080	0.3
2035	22,927	23	0.1	1,148	3	0.3	315,844	1,203	0.4
2036	22,956	29	0.1	1,156	8	0.7	318,402	2,558	0.8
2037	22,986	30	0.1	1,157	1	0.1	319,016	614	0.2
2038	23,016	30	0.1	1,161	4	0.3	320,524	1,508	0.5
2039	23,046	30	0.1	1,165	4	0.4	322,085	1,561	0.5
2040	23,076	30	0.1	1,172	7	0.6	324,569	2,484	0.8

Methodology and Results *(continued)*

Small Commercial Forecast

Small Commercial sales are projected using two equations, a customer equation and an energy equation. Both are determined through regression analysis and utilize inputs relating to the economy, electric price, and the residential customer forecast. Projections are reported in Table 1-6.

Table 1-6
Small Commercial Summary

	Customers			*Use Per Customer*			*Class Sales*		
	Annual Average	Annual Change	% Change	Annual Average (MWh)	Change (MWh)	% Change	Total (MWh)	Annual Change (MWh)	% Change
2010	1,472	-2	-0.1	58	8	15.0	85,855	11,101	14.9
2011	1,486	14	1.0	56	-2	-3.4	83,703	-2,152	-2.5
2012	1,547	61	4.1	53	-4	-6.4	81,539	-2,165	-2.6
2013	1,556	9	0.6	53	0	-0.4	81,701	162	0.2
2014	1,580	24	1.5	54	1	2.1	84,677	2,976	3.6
2015	1,589	9	0.6	55	1	2.8	87,538	2,861	3.4
2016	1,578	-11	-0.7	51	-4	-7.5	80,393	-7,145	-8.2
2017	1,578	0	0.0	48	-3	-6.0	75,579	-4,814	-6.0
2018	1,576	-2	-0.1	51	3	5.6	79,674	4,094	5.4
2019	1,603	27	1.7	50	-1	-1.7	79,686	12	0.0
2020	1,613	10	0.6	46	-4	-7.5	74,187	-5,499	-6.9
2021	1,621	8	0.5	51	5	11.2	82,904	8,718	11.8
2022	1,622	1	0.1	51	0	0.0	82,963	59	0.1
2023	1,625	3	0.2	52	0	0.8	83,800	836	1.0
2024	1,627	2	0.1	52	0	0.4	84,227	427	0.5
2025	1,630	3	0.2	52	0	0.2	84,528	301	0.4
2026	1,634	4	0.2	52	0	0.2	84,885	357	0.4
2027	1,637	3	0.2	52	0	-0.2	84,910	25	0.0
2028	1,640	3	0.2	52	0	-0.2	84,910	-1	0.0
2029	1,643	3	0.2	52	0	0.2	85,224	315	0.4
2030	1,646	3	0.2	52	0	0.2	85,528	304	0.4
2031	1,649	3	0.2	52	0	0.2	85,859	331	0.4
2032	1,652	3	0.2	52	0	-0.1	85,901	42	0.0
2033	1,655	3	0.2	52	0	0.0	86,040	139	0.2
2034	1,657	2	0.1	52	0	0.0	86,176	137	0.2
2035	1,660	3	0.2	52	0	-0.2	86,168	-9	0.0
2036	1,662	2	0.1	52	0	0.1	86,375	207	0.2
2037	1,664	2	0.1	52	0	-0.1	86,384	9	0.0
2038	1,666	2	0.1	52	0	-0.1	86,435	51	0.1
2039	1,668	2	0.1	52	0	0.0	86,481	47	0.1
2040	1,670	2	0.1	52	0	0.0	86,578	97	0.1

Methodology and Results *(continued)*

Large Commercial Forecast

Large commercial customers are those with loads 1 MW or greater. Cumberland Valley Electric currently has 11 customers in this class and is projected to increase to 12 through 2040. Large commercial results are reported in Table 1-7.

Table 1-7
Large Commercial Summary

	Customers			*Use Per Customer*			*Class Sales*		
	Annual Average	Annual Change	% Change	Annual Average (MWh)	Change (MWh)	% Change	Total (MWh)	Annual Change (MWh)	% Change
2010	16	-1	-5.9	6,602	394	6.3	104,534	-3,074	-2.9
2011	15	-1	-6.3	6,907	304	4.6	106,477	1,943	1.9
2012	17	2	13.3	5,366	-1,540	-22.3	91,225	-15,252	-14.3
2013	16	-1	-5.9	4,293	-1,073	-20.0	68,690	-22,535	-24.7
2014	15	-1	-6.3	4,599	305	7.1	68,978	289	0.4
2015	15	0	0.0	3,844	-755	-16.4	57,660	-11,319	-16.4
2016	11	-4	-26.7	4,895	1,051	27.4	53,850	-3,810	-6.6
2017	11	0	0.0	4,729	-167	-3.4	52,018	-1,832	-3.4
2018	11	0	0.0	4,836	107	2.3	53,196	1,178	2.3
2019	11	0	0.0	3,741	-1,095	-22.6	41,156	-12,040	-22.6
2020	11	0	0.0	3,621	-121	-3.2	39,828	-1,328	-3.2
2021	11	0	0.0	4,156	535	14.8	45,715	5,887	14.8
2022	11	0	0.0	4,329	173	4.2	47,617	1,902	4.2
2023	11	0	0.0	4,444	115	2.7	48,883	1,266	2.7
2024	11	0	0.0	4,520	77	1.7	49,725	842	1.7
2025	11	0	0.0	4,571	51	1.1	50,285	561	1.1
2026	11	0	0.0	4,605	34	0.7	50,658	373	0.7
2027	11	0	0.0	4,628	23	0.5	50,907	248	0.5
2028	11	0	0.0	4,643	15	0.3	51,072	165	0.3
2029	11	0	0.0	4,653	10	0.2	51,182	110	0.2
2030	11	0	0.0	4,660	7	0.1	51,255	73	0.1
2031	11	0	0.0	4,664	4	0.1	51,304	49	0.1
2032	11	0	0.0	4,667	3	0.1	51,336	32	0.1
2033	12	1	9.1	4,968	302	6.5	59,622	8,286	16.1
2034	12	0	0.0	4,970	1	0.0	59,636	14	0.0
2035	12	0	0.0	4,970	1	0.0	59,645	10	0.0
2036	12	0	0.0	4,971	1	0.0	59,652	6	0.0
2037	12	0	0.0	4,971	0	0.0	59,656	4	0.0
2038	12	0	0.0	4,972	0	0.0	59,659	3	0.0
2039	12	0	0.0	4,972	0	0.0	59,661	2	0.0
2040	12	0	0.0	4,972	0	0.0	59,662	1	0.0

Methodology and Results *(continued)*

Peak Day Weather Scenarios

Extreme temperatures can dramatically influence Cumberland Valley Electric's peak demands. Table 1-8 reports the impact of extreme weather on system demands.

Table 1-8: Seasonal Peaks by Weather Scenario

Winter Peak Day Minimum Temperatures					
	Mild	Normal		**Extreme**	
Degrees	10	1	-7	-10	-15
Probability	*99%*	*50%*	*20%*	*10%*	*3%*
Occurs Once Every		**2 Years**	**5 Years**	**10 Years**	**30 Years**
Non-Coincident Winter Peak Demand - MW					
Season	Mild	Normal		Extreme	
2020 - 21	133	144	154	158	164
2021 - 22	135	146	155	159	165
2022 - 23	135	146	156	160	166
2023 - 24	135	146	156	160	166
2024 - 25	135	146	156	160	166
2025 - 26	135	146	156	160	166
2026 - 27	136	147	157	160	167
2027 - 28	137	148	158	162	168
2028 - 29	137	148	158	162	168
2029 - 30	137	148	158	162	168
2030 - 31	137	148	158	162	168
2031 - 32	138	149	159	163	169
2032 - 33	139	150	160	164	170
2033 - 34	140	151	161	164	171
2034 - 35	140	151	161	165	171
2035 - 36	142	153	163	166	173
2036 - 37	142	153	163	167	173
2037 - 38	143	154	164	168	174
2038 - 39	144	155	165	169	175
2039 - 40	145	156	166	170	176

Summer Peak Day Maximum Temperatures				
	Normal		**Extreme**	
Degrees	94	97	99	101
Probability	*50%*	*20%*	*10%*	*3%*
	2 Years	**5 Years**	**10 Years**	**30 Years**
Non-Coincident Summer Peak Demand - MW				
Year	Normal		Extreme	
2021	98	102	106	109
2022	99	104	107	110
2023	99	104	107	111
2024	99	104	107	111
2025	99	104	107	111
2026	99	104	108	111
2027	100	105	108	111
2028	100	105	109	112
2029	101	106	109	112
2030	101	106	109	112
2031	101	106	109	113
2032	102	107	110	113
2033	104	109	112	115
2034	104	109	113	116
2035	105	110	113	117
2036	106	111	114	118
2037	106	111	115	118
2038	107	112	116	119
2039	108	113	116	120
2040	109	114	117	121