Taylor County Electric Cooperative Corporation

2020 Load Forecast

November 2020

Prepared by: EKPC's Load Forecasting Department

EAST KENTUCKY POWER COOPERATIVE

A Touchstone Energy Cooperative

Table of Contents

	Page Number
Introduction and Executive Summary	3
Narrative	9
Key Assumptions	11
Methodology and Results	15
- Residential Forecast	18
- Small Commercial	20
- Large Commercial	22
- Public Street & Highway Lighting	24
- Peak Day Weather Scenarios	26

Introduction
Executive Summary

Taylor County Rural Electric Cooperative Corporation (Taylor County RECC), located in Campbellsville, Kentucky, is an electric distribution cooperative that serves members in nine counties. This load forecast report contains Taylor County RECC's long-range forecast of energy and peak demand.

Taylor County RECC 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 Taylor County RECC for reasonability. Final projections reflect a rigorous analysis of historical data combined with the experience and judgment of the manager and staff of Taylor County RECC. 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 Taylor County RECC. Cooperation helps to ensure that the forecast meets both parties' needs. Taylor County RECC 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 Taylor County RECC 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)	Seasonal Sales (MWh)	Small Comm. Sales (MWh)	Public Buildings Sales (MWh)	Large Comm. Sales (MWh)	Public Street and Highway Lighting Sales (MWh)	Total Sales (MWh)	Office Use (MWh)	% Loss	Purchased Power (MWh)
2010	318,640	0	139,033	0	31,545	652	489,870	429	5.4	518,101
2011	312,639	0	138,906	0	23,345	662	475,552	415	5.7	504,806
2012	288,005	0	135,964	0	17,497	387	441,853	377	5.6	468,642
2013	297,094	0	136,716	0	19,952	697	454,459	353	5.6	481,744
2014	315,722	0	141,382	0	49,102	721	506,927	374	5.2	535,109
2015	303,138	0	137,907	0	44,427	710	486,181	352	5.3	514,003
2016	293,683	0	134,667	0	99,652	707	528,709	315	4.7	555,334
2017	283,514	0	132,035	0	118,208	708	534,465	308	4.7	560,999
2018	323,042	0	135,280	0	124,930	717	583,970	351	4.7	613,327
2019	307,762	0	131,300	0	109,888	705	549,654	333	4.8	577,856
2020	303,040	0	123,398	0	118,088	696	545,222	332	4.9	573,432
2021	314,015	0	133,466	0	121,469	688	569,638	332	4.9	599,097
2022	317,469	0	136,574	0	122,098	680	576,821	332	4.9	606,646
2023	318,831	0	139,083	0	130,473	673	589,059	332	4.9	619,510
2024	320,504	0	140,814	0	132,097	673	594,088	332	4.9	624,796
2025	320,820	0	142,357	0	132,844	673	596,694	332	4.9	627,535
2026	323,677	0	143,925	0	133,607	673	601,881	332	4.9	632,988
2027	328,174	0	145,442	0	134,316	673	608,605	332	4.9	640,055
2028	334,381	0	146,823	0	134,890	673	616,767	332	4.9	648,634
2029	337,794	0	148,150	0	135,410	673	622,028	332	4.9	654,163
2030	339,896	0	149,551	0	135,990	673	626,110	332	4.9	658,454
2031	341,560	0	150,958	0	136,570	673	629,760	332	4.9	662,291
2032	346,049	0	152,387	0	147,060	673	646,169	332	4.9	679,538
2033	349,124	0	153,792	0	147,716	673	651,305	332	4.9	684,937
2034	353,788	0	155,244	0	148,411	673	658,117	332	4.9	692,097
2035	358,469	0	156,667	0	149,071	673	664,881	332	4.9	699,206
2036	365,312	0	158,030	0	149,668	673	673,684	332	4.9	708,459
2037	369,923	0	159,360	0	150,228	673	680,183	332	4.9	715,291
2038	375,187	0	160,667	0	150,760	673	687,287	332	4.9	722,758
2039	380,140	0	161,949	0	151,263	673	694,026	332	4.9	729,841
2040	386,455	0	163,300	0	151,825	673	702,252	332	4.9	738,488

Table 1-1 *(continued)*

Peaks Summary

Winter		Summer						
Season	Non-Coincident Peak Demand	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	135.2	2010	107.9	2010	518,101	43.8%	-4° F	99° F
2010 - 11	136.1	2011	106.2	2011	504,806	42.3%	2° F	96° F
2011 - 12	111.1	2012	107.9	2012	468,642	48.0%	17° F	106° F
2012 - 13	119.3	2013	97.1	2013	481,744	46.1%	14° F	91° F
2013 - 14	156.8	2014	109.8	2014	535,109	39.0%	-1° F	93° F
2014 - 15	164.9	2015	99.7	2015	514,003	35.6%	-12° F	93° F
2015 - 16	139.1	2016	114.2	2016	555,334	45.5%	0° F	92° F
2016 - 17	144.2	2017	115.0	2017	560,999	44.4%	7° F	95° F
2017 - 18	161.7	2018	116.5	2018	613,327	43.3%	-1° F	97° F
2018 - 19	141.9	2019	118.5	2019	577,856	46.5%	11° F	93° F
2019 - 20	133.3	2020	115.1	2020	573,432	49.0%	19° F	95° F
2020 - 21	164.5	2021	122.4	2021	599,097	41.6%		
2021 - 22	166.4	2022	124.2	2022	606,646	41.6%		
2022 - 23	168.0	2023	126.0	2023	619,510	42.1%		
2023 - 24	169.1	2024	126.6	2024	624,796	42.1%		
2024 - 25	169.2	2025	126.9	2025	627,535	42.3%		
2025 - 26	170.2	2026	127.6	2026	632,988	42.5%		
2026 - 27	171.7	2027	128.8	2027	640,055	42.6%		
2027 - 28	173.9	2028	130.2	2028	648,634	42.5%		
2028 - 29	174.8	2029	131.0	2029	654,163	42.7%		
2029 - 30	175.2	2030	131.6	2030	658,454	42.9%		
2030 - 31	175.6	2031	132.1	2031	662,291	43.1%		
2031 - 32	178.1	2032	134.8	2032	679,538	43.4%		
2032 - 33	178.9	2033	135.7	2033	684,937	43.7%		
2033 - 34	180.3	2034	136.9	2034	692,097	43.8%		
2034 - 35	181.8	2035	138.1	2035	699,206	43.9%		
2035 - 36	184.2	2036	139.8	2036	708,459	43.8%		
2036 - 37	185.5	2037	141.1	2037	715,291	44.0%		
2037 - 38	187.2	2038	142.4	2038	722,758	44.1%		
2038 - 39	188.8	2039	143.7	2039	729,841	44.1%		
2039 - 40	190.9	2040	145.2	2040	738,488	44.0%		

EAST KENTUCKY POWER COOPERATIVE
A Touchstone Energy Cooperative

Executive Summary *(continued)*

Overall Results

- Total sales are projected to grow by 1.3 percent a year for the period 2020-2040, compared to a 1.3 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 1.9 percent over the 19 year forecast (2021-2040). Summer peak demands for the same period indicate growth of 1.2 percent.

- Load factor increases from 41.6% to 44.0% through the forecast period.

Executive Summary *(continued)*

Overall Results – Table 1-2

	Time Period	Residential	Small Commercial	Large Commercial	Other	Total Sales
5-Year	2014-2019	-0.5%	-1.5%	17.5%	-0.4%	1.6%
	2020-2025	1.1%	2.9%	2.4%	-0.7%	1.8%
10-Year	2009-2019	0.0%	0.0%	2.8%	0.9%	0.5%
	2020-2030	1.2%	1.9%	1.4%	-0.3%	1.4%
15-Year	2004-2019	0.6%	0.7%	-0.1%	2.2%	0.5%
	2020-2035	1.1%	1.6%	1.6%	-0.2%	1.3%
20-Year	1999-2019	1.1%	2.6%	10.8%	4.3%	2.5%
	2020-2040	1.2%	1.4%	1.3%	-0.2%	1.3%

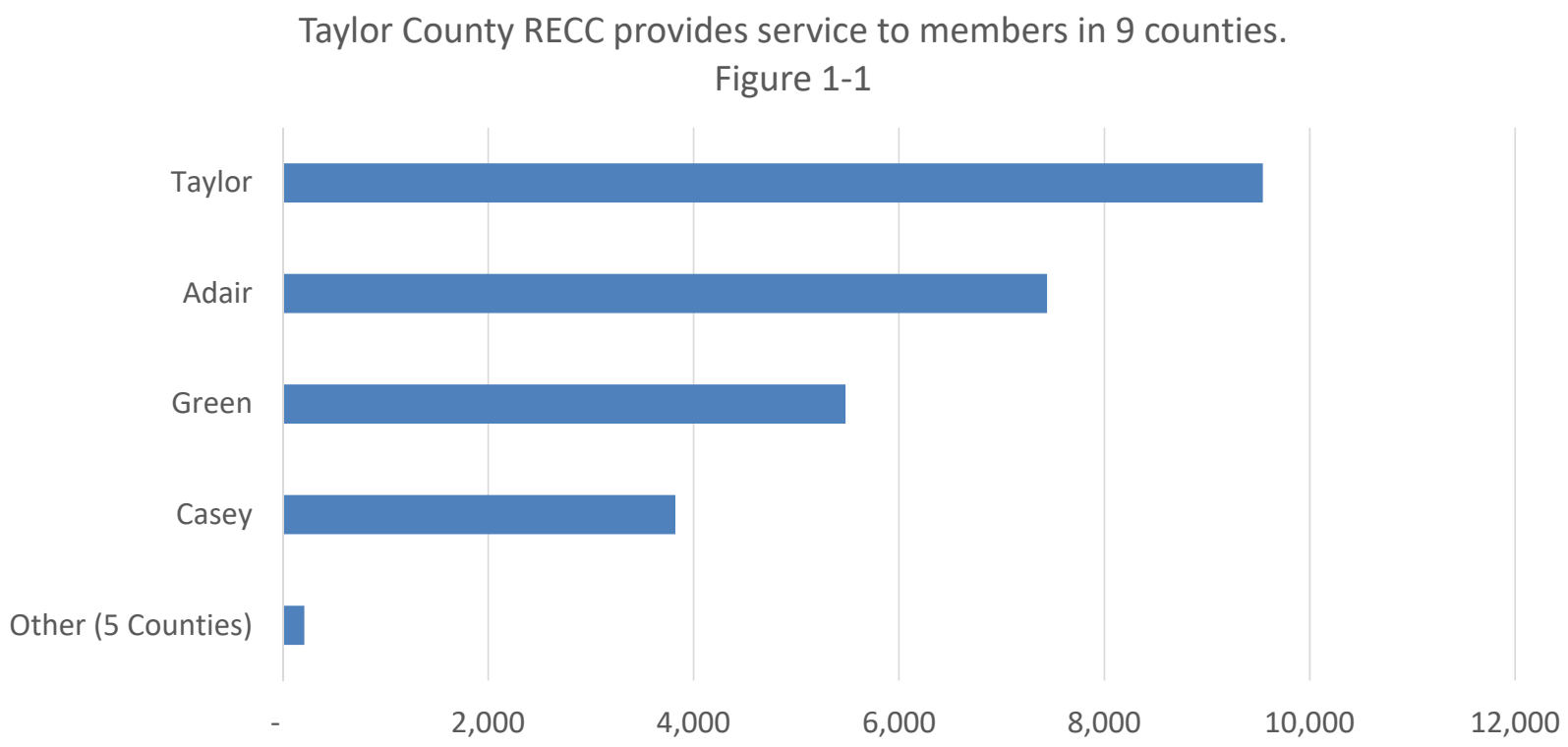
Narrative

Taylor County RECC headquarters is located in Campbellsville, Kentucky. The cooperative furnishes electric service to Adair, Casey, Cumberland, Green, Hart, Marion, Metcalfe, Russell and Taylor counties. Because Kentucky has certified service boundaries, there is little possibility of a change in service territory. There are no plans for merger, consolidation or reorganization.

The average household size is 2.15 people per household; a little over 78% of all homes are headed by someone age 55 or greater.

Narrative *(continued)*

Counties Served



EAST KENTUCKY POWER COOPERATIVE
A Touchstone Energy Cooperative

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	0.1%	0.3%	0.8%	3.2%
	2020-2025	0.1%	0.5%	2.6%	2.9%
10 Year Growth Rates	2009-2019	0.2%	0.4%	0.9%	3.3%
	2020-2030	0.2%	0.6%	1.8%	3.9%
15 Year Growth Rates	2004-2019	0.3%	0.3%	0.8%	3.7%
	2020-2035	0.2%	0.6%	1.5%	4.1%
20 Year Growth Rates	1999-2019	0.4%	0.4%	1.3%	4.1%
	2020-2040	0.2%	0.5%	1.3%	4.1%

- *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.*

EAST KENTUCKY POWER COOPERATIVE
A Touchstone Energy Cooperative

Key Assumptions *(continued)*
Appliance Saturations

- 63% of customers use electric as a primary fuel for heating, while 23% use it as a secondary fuel.
  - 18% use electric furnaces and 66% use electric heat pumps.
- 82% of customers use central air and 19% use electric/window units.
- 88% 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 95%
- Freezer 67%
- 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 Bowling Green 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 Taylor County RECC as reported on RUS Form 7.

Typically, a preliminary forecast is prepared during the first quarter depending on when Taylor County RECC 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 Taylor County RECC 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	518,101,300	-3.6%	489,870,055	-6.4%	27,802,336	5.4%	136.0	25,436	3,203	7.9	$33,336,809	6.4
2011	504,806,378	-2.6%	475,552,088	-2.9%	28,839,106	5.7%	139.6	25,613	3,210	8.0	$35,657,557	7.1
2012	468,642,150	-7.2%	441,853,227	-7.1%	26,412,303	5.6%	117.4	25,728	3,218	8.0	$33,876,701	7.2
2013	481,743,548	2.8%	454,459,048	2.9%	26,931,377	5.6%	119.9	25,888	3,230	8.0	$35,414,608	7.4
2014	535,108,887	11.1%	506,926,990	11.5%	27,808,103	5.2%	163.0	25,958	3,236	8.0	$38,565,673	7.2
2015	514,002,555	-3.9%	486,181,338	-4.1%	27,469,137	5.3%	166.0	26,104	3,248	8.0	$35,688,411	6.9
2016	555,333,797	8.0%	528,709,463	8.7%	26,309,485	4.7%	134.8	26,290	3,264	8.1	$35,600,434	6.4
2017	560,999,221	1.0%	534,465,256	1.1%	26,225,563	4.7%	141.5	26,418	3,273	8.1	$35,345,758	6.3
2018	613,326,993	9.3%	583,969,681	9.3%	29,006,101	4.7%	159.8	26,521	3,286	8.1	$38,194,385	6.2
2019	577,856,395	-5.8%	549,654,195	-5.9%	27,869,070	4.8%	137.2	26,649	3,299	8.1	$35,984,235	6.2
Average						5.2%						

EAST KENTUCKY POWER COOPERATIVE
A Touchstone Energy Cooperative

Methodology and Results *(continued)*

The preliminary forecast was presented to Taylor County RECC staff. Changes were made to the forecast as needed based on new information, such as new large loads or subdivisions. In some instances, other assumptions were based on insights from Taylor County RECC 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 Taylor County RECC'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 Taylor County RECC'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	22,555	95	0.4	1,177	33	2.9	318,640	10,268	3.3
2011	22,666	111	0.5	1,149	-28	-2.4	312,639	-6,001	-1.9
2012	22,699	33	0.1	1,057	-92	-8.0	288,005	-24,634	-7.9
2013	22,790	91	0.4	1,086	29	2.7	297,094	9,089	3.2
2014	22,796	6	0.0	1,154	68	6.2	315,722	18,628	6.3
2015	22,935	139	0.6	1,101	-53	-4.6	303,138	-12,584	-4.0
2016	23,063	128	0.6	1,061	-40	-3.7	293,683	-9,454	-3.1
2017	23,173	110	0.5	1,020	-42	-3.9	283,514	-10,169	-3.5
2018	23,289	116	0.5	1,156	136	13.4	323,042	39,528	13.9
2019	23,423	134	0.6	1,095	-61	-5.3	307,762	-15,281	-4.7
2020	23,589	166	0.7	1,071	-24	-2.2	303,040	-4,722	-1.5
2021	23,742	153	0.6	1,102	32	3.0	314,015	10,975	3.6
2022	23,885	143	0.6	1,108	5	0.5	317,469	3,454	1.1
2023	24,031	146	0.6	1,106	-2	-0.2	318,831	1,362	0.4
2024	24,183	152	0.6	1,104	-1	-0.1	320,504	1,673	0.5
2025	24,342	159	0.7	1,098	-6	-0.6	320,820	316	0.1
2026	24,520	178	0.7	1,100	2	0.2	323,677	2,857	0.9
2027	24,699	179	0.7	1,107	7	0.7	328,174	4,497	1.4
2028	24,871	172	0.7	1,120	13	1.2	334,381	6,206	1.9
2029	25,034	163	0.7	1,124	4	0.4	337,794	3,414	1.0
2030	25,187	153	0.6	1,125	0	0.0	339,896	2,101	0.6
2031	25,328	141	0.6	1,124	-1	-0.1	341,560	1,664	0.5
2032	25,458	130	0.5	1,133	9	0.8	346,049	4,489	1.3
2033	25,589	131	0.5	1,137	4	0.4	349,124	3,075	0.9
2034	25,718	129	0.5	1,146	9	0.8	353,788	4,664	1.3
2035	25,845	127	0.5	1,156	9	0.8	358,469	4,681	1.3
2036	25,970	125	0.5	1,172	16	1.4	365,312	6,843	1.9
2037	26,093	123	0.5	1,181	9	0.8	369,923	4,610	1.3
2038	26,210	117	0.4	1,193	11	1.0	375,187	5,265	1.4
2039	26,318	108	0.4	1,204	11	0.9	380,140	4,953	1.3
2040	26,421	103	0.4	1,219	15	1.3	386,455	6,314	1.7

Methodology and Results *(continued)*

Small Commercial Forecast

Small commercial sales are projected using two equations: a customer equation and a small commercial sales equation. Both are determined through regression analysis and utilize inputs relating to the economy, electric price, and the residential customer forecast. Small commercial 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	2,864	56	2.0	49	2.0	4.3	139,033	8,278	6.3
2011	2,930	66	2.3	47	-1.1	-2.3	138,906	-127	-0.1
2012	3,011	81	2.8	45	-2.3	-4.8	135,964	-2,942	-2.1
2013	3,081	70	2.3	44	-0.8	-1.7	136,716	752	0.6
2014	3,145	64	2.1	45	0.6	1.3	141,382	4,666	3.4
2015	3,151	6	0.2	44	-1.2	-2.6	137,907	-3,475	-2.5
2016	3,209	58	1.8	42	-1.8	-4.1	134,667	-3,240	-2.3
2017	3,227	18	0.6	41	-1.0	-2.5	132,035	-2,632	-2.0
2018	3,215	-12	-0.4	42	1.2	2.8	135,280	3,245	2.5
2019	3,208	-7	-0.2	41	-1.1	-2.7	131,300	-3,980	-2.9
2020	3,220	12	0.4	38	-2.6	-6.4	123,398	-7,902	-6.0
2021	3,250	30	0.9	41	2.7	7.2	133,466	10,068	8.2
2022	3,283	33	1.0	42	0.5	1.3	136,574	3,108	2.3
2023	3,323	40	1.2	42	0.3	0.6	139,083	2,509	1.8
2024	3,350	27	0.8	42	0.2	0.4	140,814	1,731	1.2
2025	3,376	26	0.8	42	0.1	0.3	142,357	1,543	1.1
2026	3,407	31	0.9	42	0.1	0.2	143,925	1,568	1.1
2027	3,439	32	0.9	42	0.0	0.1	145,442	1,518	1.1
2028	3,467	28	0.8	42	0.1	0.1	146,823	1,380	0.9
2029	3,493	26	0.7	42	0.1	0.2	148,150	1,327	0.9
2030	3,524	31	0.9	42	0.0	0.1	149,551	1,401	0.9
2031	3,558	34	1.0	42	0.0	0.0	150,958	1,407	0.9
2032	3,594	36	1.0	42	0.0	-0.1	152,387	1,429	0.9
2033	3,633	39	1.1	42	-0.1	-0.2	153,792	1,405	0.9
2034	3,671	38	1.0	42	0.0	-0.1	155,244	1,453	0.9
2035	3,710	39	1.1	42	-0.1	-0.1	156,667	1,423	0.9
2036	3,749	39	1.1	42	-0.1	-0.2	158,030	1,363	0.9
2037	3,787	38	1.0	42	-0.1	-0.2	159,360	1,330	0.8
2038	3,823	36	1.0	42	-0.1	-0.1	160,667	1,307	0.8
2039	3,858	35	0.9	42	0.0	-0.1	161,949	1,283	0.8
2040	3,894	36	0.9	42	0.0	-0.1	163,300	1,350	0.8

Methodology and Results *(continued)*

Large Commercial Forecast

Large commercial customers are those with loads 1 MW or greater. Taylor County RECC currently has 10 customers in this class and is projected to increase to 13 customers by 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	9	0	0.0	3,505	-5,768	-62.2	31,545	-51,911	-62.2
2011	9	0	0.0	2,594	-911	-26.0	23,345	-8,200	-26.0
2012	10	1	11.1	1,750	-844	-32.5	17,497	-5,848	-25.1
2013	9	-1	-10.0	2,217	467	26.7	19,952	2,455	14.0
2014	9	0	0.0	5,456	3,239	146.1	49,102	29,150	146.1
2015	10	1	11.1	4,443	-1,013	-18.6	44,427	-4,675	-9.5
2016	10	0	0.0	9,965	5,523	124.3	99,652	55,226	124.3
2017	10	0	0.0	11,821	1,856	18.6	118,208	18,555	18.6
2018	10	0	0.0	12,493	672	5.7	124,930	6,722	5.7
2019	10	0	0.0	10,989	-1,504	-12.0	109,888	-15,042	-12.0
2020	10	0	0.0	11,809	820	7.5	118,088	8,200	7.5
2021	11	1	10.0	11,043	-766	-6.5	121,469	3,382	2.9
2022	11	0	0.0	11,100	57	0.5	122,098	628	0.5
2023	12	1	9.1	10,873	-227	-2.0	130,473	8,375	6.9
2024	12	0	0.0	11,008	135	1.2	132,097	1,624	1.2
2025	12	0	0.0	11,070	62	0.6	132,844	747	0.6
2026	12	0	0.0	11,134	64	0.6	133,607	763	0.6
2027	12	0	0.0	11,193	59	0.5	134,316	709	0.5
2028	12	0	0.0	11,241	48	0.4	134,890	575	0.4
2029	12	0	0.0	11,284	43	0.4	135,410	520	0.4
2030	12	0	0.0	11,333	48	0.4	135,990	580	0.4
2031	12	0	0.0	11,381	48	0.4	136,570	580	0.4
2032	13	1	8.3	11,312	-68	-0.6	147,060	10,490	7.7
2033	13	0	0.0	11,363	50	0.4	147,716	656	0.4
2034	13	0	0.0	11,416	53	0.5	148,411	695	0.5
2035	13	0	0.0	11,467	51	0.4	149,071	660	0.4
2036	13	0	0.0	11,513	46	0.4	149,668	597	0.4
2037	13	0	0.0	11,556	43	0.4	150,228	559	0.4
2038	13	0	0.0	11,597	41	0.4	150,760	532	0.4
2039	13	0	0.0	11,636	39	0.3	151,263	503	0.3
2040	13	0	0.0	11,679	43	0.4	151,825	561	0.4

Methodology and Results *(continued)*

Public Street & Highway Lighting Forecast

Taylor County RECC serves street light accounts which are classified in the 'Public Street & Highway Lighting' category. This class is modeled separately. Results are reported in Table 1-8.

Table 1-8

Public Street & Highway Lighting 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	8	0	0.0	6,787	91	1.4	652	9	1.4
2011	8	0	0.0	6,892	104	1.5	662	10	1.5
2012	8	0	0.0	4,036	-2,856	-41.4	387	-274	-41.4
2013	8	0	0.0	7,265	3,229	80.0	697	310	80.0
2014	8	0	0.0	7,511	246	3.4	721	24	3.4
2015	8	0	0.0	7,394	-117	-1.6	710	-11	-1.6
2016	8	0	0.0	7,364	-30	-0.4	707	-3	-0.4
2017	8	0	0.0	7,377	13	0.2	708	1	0.2
2018	7	-1	-12.5	8,540	1,163	15.8	717	9	1.3
2019	8	1	14.3	7,345	-1,196	-14.0	705	-12	-1.7
2020	9	1	12.5	6,444	-901	-12.3	696	-9	-1.3
2021	9	0	0.0	6,366	-77	-1.2	688	-8	-1.2
2022	9	0	0.0	6,296	-70	-1.1	680	-8	-1.1
2023	9	0	0.0	6,233	-63	-1.0	673	-7	-1.0
2024	9	0	0.0	6,233	0	0.0	673	0	0.0
2025	9	0	0.0	6,233	0	0.0	673	0	0.0
2026	9	0	0.0	6,233	0	0.0	673	0	0.0
2027	9	0	0.0	6,233	0	0.0	673	0	0.0
2028	9	0	0.0	6,233	0	0.0	673	0	0.0
2029	9	0	0.0	6,233	0	0.0	673	0	0.0
2030	9	0	0.0	6,233	0	0.0	673	0	0.0
2031	9	0	0.0	6,233	0	0.0	673	0	0.0
2032	9	0	0.0	6,233	0	0.0	673	0	0.0
2033	9	0	0.0	6,233	0	0.0	673	0	0.0
2034	9	0	0.0	6,233	0	0.0	673	0	0.0
2035	9	0	0.0	6,233	0	0.0	673	0	0.0
2036	9	0	0.0	6,233	0	0.0	673	0	0.0
2037	9	0	0.0	6,233	0	0.0	673	0	0.0
2038	9	0	0.0	6,233	0	0.0	673	0	0.0
2039	9	0	0.0	6,233	0	0.0	673	0	0.0
2040	9	0	0.0	6,233	0	0.0	673	0	0.0

Methodology and Results *(continued)*

Peak Day Weather Scenarios

Extreme temperatures can dramatically influence Taylor County RECC's peak demands. Tables 1-9 report the impact of extreme weather on system demands.

Table 1-9: Seasonal Peaks by Weather Scenario

Winter Peak Day Minimum Temperatures					
	Mild	Normal		**Extreme**	
Degrees	13	1	-8	-12	-18
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	154	165	175	179	186
2021 - 22	156	166	177	181	188
2022 - 23	158	168	178	183	190
2023 - 24	159	169	179	184	191
2024 - 25	159	169	180	184	191
2025 - 26	160	170	181	185	192
2026 - 27	161	172	182	187	194
2027 - 28	163	174	185	189	196
2028 - 29	164	175	186	190	198
2029 - 30	164	175	186	191	198
2030 - 31	165	176	186	191	199
2031 - 32	167	178	189	194	201
2032 - 33	168	179	190	195	202
2033 - 34	169	180	191	196	204
2034 - 35	171	182	193	198	205
2035 - 36	173	184	195	200	208
2036 - 37	174	186	197	202	209
2037 - 38	176	187	198	203	211
2038 - 39	177	189	200	205	213
2039 - 40	179	191	202	207	215

Summer Peak Day Maximum Temperatures				
	Normal		**Extreme**	
Degrees	99	103	105	107
Probability	*50%*	*20%*	*10%*	*3%*
	2 Years	**5 Years**	**10 Years**	**30 Years**
Non-Coincident Summer Peak Demand - MW				
Year	Normal		Extreme	
2021	122	129	133	137
2022	124	131	135	138
2023	126	133	137	140
2024	127	134	137	141
2025	127	134	138	141
2026	128	135	139	142
2027	129	136	140	143
2028	130	137	141	145
2029	131	138	142	146
2030	132	139	143	147
2031	132	140	143	147
2032	135	142	146	150
2033	136	143	147	151
2034	137	144	148	152
2035	138	146	150	153
2036	140	147	151	155
2037	141	149	153	157
2038	142	150	154	158
2039	144	151	155	159
2040	145	153	157	161

EAST KENTUCKY POWER COOPERATIVE
A Touchstone Energy Cooperative