

Michigan Electric Sales Forecast

Prepared by the Michigan Public Service Commission Staff -- April 2001

Executive Secretary Division

Statistical Analysis Section

Introduction

This is a composite projection of Michigan total electric sales for the years 2001 through 2010. The projection is based primarily on forecasts prepared by Consumers Energy and Detroit Edison.

The purpose of this forecast is to provide information for policy development and for analysis of electric industry issues. Electricity sales projections are required for determining future power supply requirements. More detailed projections are used for setting electricity rates and for assessing the adequacy of generating capacity and efforts to modify customer electricity demand.

Michigan's electric restructuring legislation, enacted into law in June 2000, divides Michigan into two markets, the Upper Peninsula and the Lower Peninsula. This projection provides information on the market size and expected growth in the two peninsulas. In addition, Consumers Energy and Detroit Edison are shown separately, showing the major importance of Michigan largest utilities in the Lower Peninsula market.

Michigan's Electric Utilities

Michigan total electric sales included in this outlook are sales to retail customers by the three types of electric utilities in the state: investor-owned, member-owned cooperatives, and public-owned municipals. Investor-owned electric utilities are regulated by the State. Cooperative electric utilities purchase most of their energy and are also state regulated. Cooperatives operate in more sparsely populated rural areas. Municipal electric utilities are publicly-owned nonprofit municipal government agencies and provide electric service to their communities and adjacent areas. Each utility has an exclusive right, called a franchise, to sell electricity in specific geographic areas. These franchises are granted by either the state or by incorporated units of local government. There are 60 electric utilities in Michigan. Thirty-nine are in the lower Peninsula and 21 are in the Upper Peninsula. Consumers Energy and Detroit Edison alone accounted for 82 percent of Michigan total electric sales in the year 2000. Upper Peninsula utilities account for about 6 percent, and the balance of Lower Peninsula utilities comprise about 12 percent of the state total.

The electricity market is significant in Michigan's economy. At the current average price of 7.1 cents per kilowatt hour, total revenues of Michigan utilities are just over \$6 billion per year. This represents about 2 percent of

Michigan's total personal income of \$289 billion for the year 2000.

Sales Forecast

Michigan's electric restructuring legislation allows the existing utilities to retain the exclusive right to distribute power in its service area. However, customers will be able to purchase generation services from other suppliers. This may significantly impact the amount of electricity sold by the 60 utilities in Michigan. Therefore, the projected sales reflect expected retail sales in a franchise or geographic area but are not intended to reflect sales or the generation market share by the existing utilities. No attempt has been made to determine future shares in the competitive generation market.

Michigan's electric sales are projected to grow at an average rate of 1.9 percent annually from 2000 to 2010. Sales are expected to grow from 104,884 gigawatt-hours (GWh, or million kilowatt-hours) in 2000 to 126,964 GWh in 2010, an increase of 22,080 GWh. This is less than the 2.5 percent annual average rate of growth in the ten year period 1990-2000. However, the projected growth rate is just slightly less than in the 1995 to 2000 period when sales grew an average of 2.1 percent per year. The two major company forecasts included in this projection show much different rates of growth, with Consumers Energy projecting annual sales growth of 2.4 percent and Detroit Edison projecting growth averaging 1.5 percent.

The projected sales reflect long-term trends and are not intended to capture business cycle expansions or recessions. The Consumers and Edison company projections used herein were developed before the economic slowdown at the end of 2000 and extending into 2001, and therefore do not reflect a downturn for the 2001 year. This, in part, explains the 2.6 percent growth for 2001 shown on the summary table. With the economic slowdown seen recently, this 2.6 percent growth is arguably too high for the first year of the projection.

The economic projections used by Consumers and Edison are business-as-usual projections showing moderate growth for Michigan – in line with the moderate electricity sales growth projected. As is typical, each utility has a unique set of variables it uses for forecasting. For vehicle production, Consumers uses U.S. General Motors production and Edison uses Detroit area production. Both of these production forecasts show vehicle production slowly trending downward, and this is in line with most projections for vehicle production for the U.S.

Although this projection does not show sales by the three major sectors (residential, commercial, manufacturing), it is noteworthy that both Consumers Energy and Detroit Edison project the highest sales growth in the commercial sector, at annual rates of 2.8 and 2.0 percent respectively.

However, Consumers projects residential sales to grow at a faster rate than its manufacturing sales, whereas Edison shows manufacturing sales growing faster than residential sales. This difference is due to the fact that Consumers projects faster growth in the number of residential customers than Edison, 1.3 percent versus 0.9 percent annually. This variation in customer growth is consistent with historic differences in customer growth when comparing Detroit with out-state Michigan.

Projection Methods

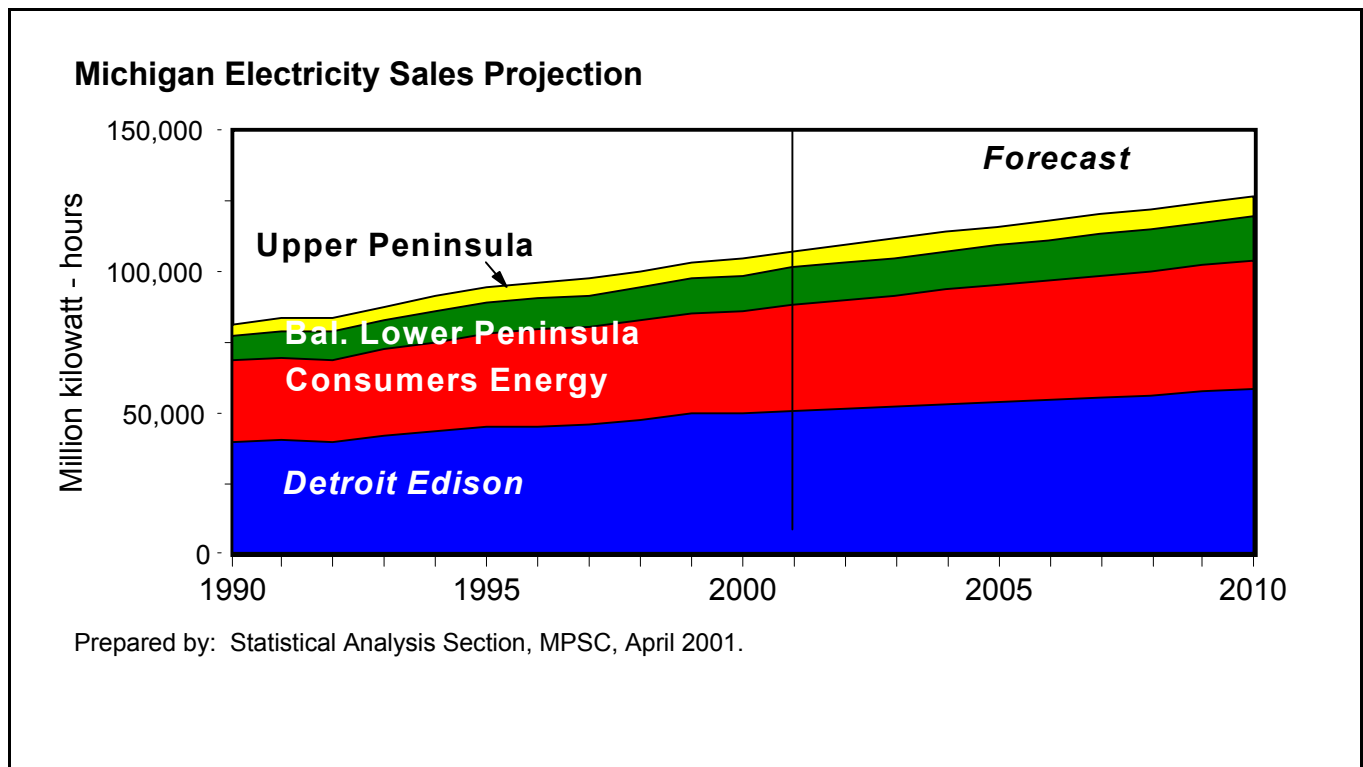
Historical Michigan electric sales data for 1990 through 1999 were compiled from annual editions of "Electric Sales and Revenue," Energy Information Administration, U.S. Department of Energy. Year 2000 sales for Detroit Edison and Consumers Energy are from company reports. The remainder of the state total is estimated using the first ten months of actual sales for Michigan.

The sales forecast for Detroit Edison for 2001 through the 2010 projection period is the company projection of

October 2000. For 2000 through 2005, the Consumers sales projection is the Consumers company projection of April 2000. For the post-2005 period, the Consumers company projection is simply trended to 2010.

For each of the other Michigan utilities, initial sales projections were made by using a linear trend of the historic sales 1990-1999. For seven of these utilities, the linear regression trend projection appeared to be obviously too high or too low, and adjustments were made. For instance, the City of Detroit initial trend was a 3 percent annual decline, and so a new trend was made using only the historic sales 1995-1999. The adjustments were generally necessary for utilities where the 1990-2000 annual data was inconsistent, such as that which would occur with a post-1990 merge of two or more utilities.

The electricity sales projections for each utility are not provided in this document. The simple trending of the sales data for a single utility is not seen as a method which would an acceptable planning projection for a small utility. However, summing these projections to larger geographic area, in this case the Upper and Lower Peninsula totals, tends to remove the errors which are naturally induced when attempting to project electric sales or economic growth for small geographic areas. The aggregates of these individual utility trend projections for the Upper and Lower Peninsulas are a reasonable scenario of expected electricity sales growth



for these two electricity markets.

Michigan Statewide Electric Sales Forecast

Year	----- Annual Sales (GWh) -----				Total Sales	Sales Change	Percent Change
	Detroit Edison	Consumers	Balance of Lower	Upper Peninsula			
1990	39,674	28,668	9,048	4,183	81,573		
1991	40,135	29,593	9,258	4,838	83,825	2,251	2.8%
1992	39,377	29,428	9,983	5,052	83,840	15	0.0%
1993	41,716	30,729	10,263	4,880	87,589	3,749	4.5%
1994	43,211	31,932	10,735	5,281	91,160	3,571	4.1%
1995	44,926	33,266	11,119	5,390	94,701	3,541	3.9%
1996	45,328	34,015	11,392	5,567	96,302	1,601	1.7%
1997	45,822	34,451	11,539	5,578	97,391	1,089	1.1%
1998	47,905	35,061	11,838	5,702	100,506	3,116	3.2%
1999	49,822	35,755	12,326	5,577	103,480	2,973	3.0%
2000	50,131	36,241	12,557	5,955	104,884	1,404	1.4%
----- Forecast -----							
2001	50,735	37,804	12,866	6,085	107,490	2,607	2.6%
2002	51,131	38,715	13,173	6,215	109,234	1,744	1.6%
2003	51,914	39,832	13,481	6,346	111,573	2,339	2.1%
2004	52,852	40,826	13,788	6,476	113,942	2,369	2.1%
2005	53,722	41,784	14,095	6,607	116,208	2,266	2.0%
2006	54,584	42,267	14,401	6,737	117,989	1,781	1.5%
2007	55,490	43,136	14,708	6,868	120,201	2,212	1.9%
2008	56,423	44,005	15,014	6,998	122,441	2,239	1.9%
2009	57,415	44,874	15,321	7,129	124,740	2,299	1.9%
2010	58,333	45,743	15,628	7,260	126,964	2,225	1.8%

Compound Annual Growth Rates:

1995-2000	2.2%	1.7%	2.5%	2.0%	2.1%
1990-2000	2.4%	2.4%	3.3%	3.6%	2.5%
2001-2010	1.5%	2.4%	2.2%	2.0%	1.9%

Prepared by: Statistical Analysis Section, Michigan Public Service Commission, April 2001.

Note: GWh is gigawatt-hour. One gigawatt-hour is one million kilowatt hours.

Sources: 1990-1999, annual editions of Electric Sales and Revenue, Energy Information Administration, U.S. DOE, DOE/EIA-0540.

Year 2000 Detroit Edison and Consumer Energy sales are from company documents. Year 2000 other areas are estimated.

The projection 2001-2010 for Detroit Edison is the company projection, October 18, 2000. The Consumers Energy company projection of April 2000 is used through the end of the Consumers 2001-2005 projection period. For 2006-2010, the Consumers projection was simply trended through 2010.

The projections for the balance of the Lower Peninsula and the Upper Peninsula are the sum of projected sales for each of Michigan's utilities in these geographic areas. For these 58 utilities, sales were projected using linear trend models. The sales 2000-2010 were initially projected by trending the 1990-1999 sales. For seven of these, the initial trend projection was judged to be unreasonable, and this was typically due to some major change in sales in the 1990-1999 period which left the historic sales data disjoint. For these seven, an alternate trend was developed by dropping selected years from the data.