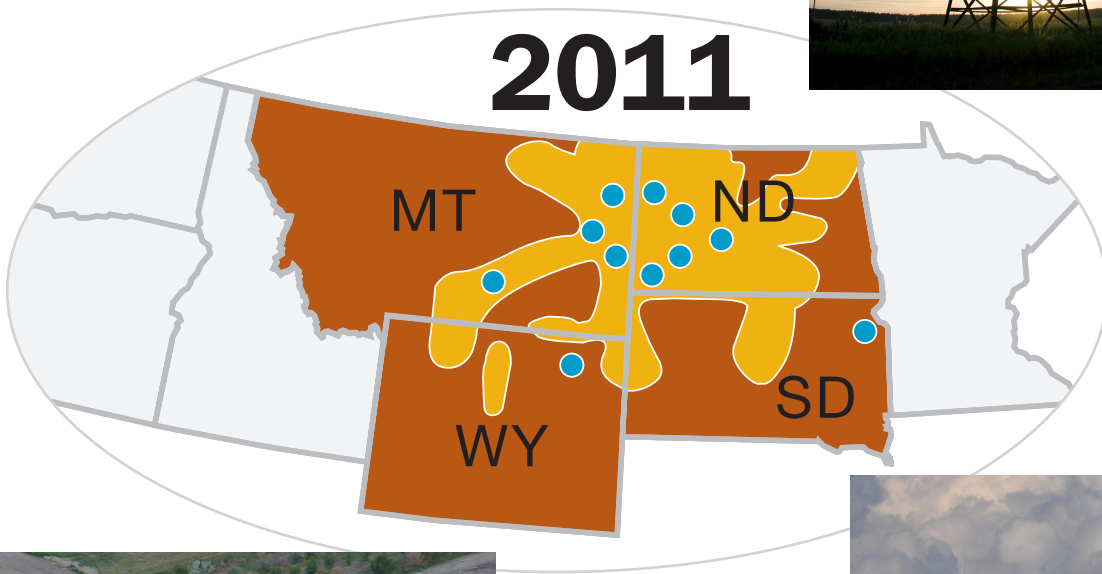


Integrated Resource Plan



**Submitted to the
North Dakota Public Service Commission
May 12, 2011**

Volume II: Attachment A

**Montana-Dakota Utilities Co.
2011 Integrated Resource Plan**

Submitted to the North Dakota Public Service Commission
May 12, 2011

**Volume II
Attachment A**



**MONTANA-DAKOTA
UTILITIES CO.**

A Division of MDU Resources Group, Inc.

Attachment A

MONTANA-DAKOTA UTILITIES CO. ELECTRIC LOAD FORECAST Integrated System (MT, ND, and SD) 2011–2030

Prepared by
Montana-Dakota Utilities Co.
Electric System Operations & Planning Department

December 31, 2010

ELECTRIC LOAD FORECAST

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Executive Summary

This report presents the 2011-2030 forecasts of Montana-Dakota Utilities Co.'s (Montana-Dakota) electric energy requirements and peak demands for the Integrated System of Montana, North Dakota, and South Dakota. The forecasts are prepared by the Electric System Operations & Planning Department. An econometric methodology of forecasting is used by Montana-Dakota to produce its forecasts.

INTEGRATED SYSTEM

Total annual energy for the Integrated System is projected to grow at an average rate of 3.2% per year for the next five years and at an average rate of 2.1% per year through 2030. Integrated System peak demand is projected to grow at an average rate of 2.7% per year for the next five years and an average rate of 1.8% per year through 2030. Much of the higher rate of growth in the first five forecasted years can be attributed to the Keystone XL Pipeline load that is anticipated to come on-line in June 2012. This new load will add significantly to both energy and demand in the amount of 4.2% in 2015 when it is in full operation.

The effects of the demand-side management (DSM) programs that are being implemented in the Integrated System are reflected in the sales and peak demand forecasts. Montana-Dakota's 2009 Integrated Resource Plans filed with the North Dakota and Montana Public Service Commissions recommended the implementation of a portfolio DSM programs which will impact sales and demand. These impacts are reflected in the forecast.

Econometric Overview

Montana-Dakota uses an econometric model as its forecasting tool. The econometric models are developed using the statistical software package SAS®.

An econometric model is a set of equations that expresses electricity use as a function of underlying factors such as income, price of electricity and alternate fuels, and weather.

The strengths of econometric forecasting models include:

- Econometric models explicitly measure the effects of underlying causes of trends and patterns.
- Econometric models provide statistical evaluation of forecast uncertainty.
- Econometric models utilize economic and demographic information that is easily understood.
- Econometric models can be readily re-estimated.

The econometric method combines economics theory and statistical techniques to produce a system of simultaneous equations. The method starts with estimating causal relationships between electric energy consumption (the dependent variable) and factors influencing electricity use (the independent variables). The relationship is estimated by applying regression analysis or other more sophisticated methods to time-series data. Once the relationships are established, inserting forecasts of the independent variables into the equation yields projections of the dependent variable.

A number of demographic and econometric variables were tested for fit in the process of developing the Integrated System forecasts. Various combinations of variables were tested for statistical significance when evaluating the data to be used in each equation. The following is a list of variables that were available for both the historical time period being analyzed and forecasted time period:

- Residential price of electricity
- Small Commercial & Industrial price of electricity
- Large Commercial & Industrial price of electricity
- Residential price of alternate fuel (natural gas)
- Commercial price of alternate fuel (natural gas)
- Personal Income per Capita
- Personal Income
- Heating Degree Days (HDD) for Bismarck, ND
- Cooling Degree Days (CDD) for Bismarck, ND
- Population
- Number of Households
- Employment
- Persons per Household

Total Retail Sales
Temperature at the time of peak for Bismarck, ND; Williston, ND; and
Miles City, MT

The variables used in each resulting equation are noted in the narrative that follows for each sales sector forecast. The forecast process begins by estimating the full models and then removing variables for which the estimated coefficient either has the wrong sign or is not statistically significantly different from zero (using a p-value of 0.10).

Data Sources

At the time this analysis was begun for the Integrated System (June 2010), the most recent year for which a complete set of weather and actual monthly sales by sector was available was 2009.

The data used in the development of the forecast that are available in-house include Montana-Dakota's rate projections, and historical sales, energy, demand, losses, natural gas and electricity prices, and number of customers or bills.

In addition to the data available in-house, most of the economic and demographic data are obtained from Woods & Poole Economics, Inc. (W&P) of Washington, D.C. by county. The W&P data are apportioned and adjusted to represent the data for the Montana-Dakota service territory. Other data sources include the National Oceanic and Atmospheric Administration (NOAA), U.S. Census Bureau, and others.

The forecasts for the Integrated System are developed annually. Likewise, the W&P data by county are available annually from the regional model developed by W&P. W&P revises the regional model from one year to the next to reflect new computational techniques and new sources of regional economic and demographic information. Each year, W&P produces new projections based on an updated historical database and revised assumptions. Therefore, the data provided by W&P captures the economic conditions in place at the time that the W&P forecasts are produced.

While national economic conditions can change quite quickly, data from W&P is provided once per year and therefore may not reflect the most current economic climate. For Montana-Dakota's service territory, this is not always a concern since this area is somewhat isolated from factors affecting the rest of the country; economic trends felt nationally usually take a year or two or more before their impact reaches this area. While the recent economic downturn was felt by the majority of the country in the last three years, Montana-Dakota's service territory was enjoying a robust agricultural sector, intense oil field drilling activity, and increased energy usage resulting from high oil prices. In fact, unemployment in

North Dakota has fallen to the lowest level in the nation, 3.8 percent – less than half the national rate of 9 percent as of January 2011. Unemployment rates are well below national averages in South Dakota and Montana as well. Therefore, the forecast for the Integrated System continues to reflect fairly strong growth.

Degree days are used to estimate how hot or cold the climate is and how much energy may be needed to keep buildings cool or warm. Heating degree days, HDDs, are calculated by subtracting the mean daily temperature from 65°F, and summing only positive values over a given period of time, while cooling degree days, CDDs, are calculated by subtracting 65°F from the mean daily temperature, and summing only positive values over a given period of time.

For the Integrated System, Bismarck and Mandan, ND account for approximately one-third of Montana-Dakota's electric sales annually. For this reason and because HDD and CDD numbers are annual values and the change in magnitude from one year to another is more relevant in the analysis than the actual value, Bismarck HDD and CDD values were used to represent the Integrated System weather in each year any time that degree day information was needed in the econometric equations developed. HDD and CDD are from NOAA for Bismarck, ND.

Historical personal income per capita is calculated to be personal income divided by the total population for those counties in which Montana-Dakota provides electric utility service. Historical personal income is available from the W&P data which come from the U.S. Department of Commerce, Bureau of Economic Analysis. Historical population data are also from the U.S. Department of Commerce. Forecasted personal income and population data are projections provided by W&P.

Historical company data used in the development of the forecasts are included in Appendix A for the Integrated System. Appendices A-1 through A-4 list annual sales by customer class for Montana, North Dakota, South Dakota, and the Integrated System for the years 1966-2010, respectively. Appendix A-5 lists the seasonal peaks and load factors of the Integrated System for the years 1960-2010. Appendix A-6 lists demand by state at the time of the system peak for the summer and winter seasons.

Appendix B contains historical and forecasted values for the exogenous variables for the Integrated System.

Forecast Accuracy

In July 2009, Montana-Dakota conducted a study, "Evaluation of Load Forecast Accuracy," to examine the accuracy of its forecast. The study provided a statistical validation of the accuracy of the company's forecasts and also helped the Company to better understand forecast problems and improve forecast

accuracy. The evaluation was conducted on three forecasted quantities: annual energy requirements, summer peak demand, and winter peak demand.

Three statistical metrics were used to evaluate the forecasts: Average Percentage Error, Average Absolute Error, and Mean Square Error. These metrics compare actual observations with the predicted values. Actual historical data from 1998-2008 as well as the forecasts produced from 1998-2007 were used in the analysis.

The study found that Montana-Dakota had produced relatively accurate forecasts. For the five-year-ahead forecasts, where the largest error levels occur, the annual energy requirement forecasts are within 7% of the actual, while the summer and winter peak demand forecasts are within 5% and 3% of the actual, respectively. For both the annual energy requirement and the summer peak demand forecasts, Montana-Dakota generally forecasted lower than the actual. The analysis also showed that the winter peak demand forecast is accurate but could likely be improved by developing a separate econometric model for winter peak demand rather than applying a ratio to the forecasted summer peak demand to arrive at forecasted winter peak demand as had previously been done.

As the result of the study, the winter peak demand forecast is now performed with an econometric model independent of the summer peak demand forecast model for the Integrated System.

Integrated System

Overview

Econometric equations were used to develop a long-range (20-year) electric load forecast for Montana-Dakota's Integrated System, which is comprised of Montana-Dakota's service territories in Montana, North Dakota, and South Dakota.

At the time this analysis was begun (June 2010), the most recent year for which a complete set of weather, prices, monthly sales by sector, and other historical information was available was for year-ending 2009. The equations developed used historical data available through 2009 and were designed to forecast the time period 2010-2030.

Montana-Dakota's Integrated System consists of the counties listed in the table below. These counties are located in eastern Montana, north-central South Dakota, and western and central North Dakota.

Counties by State in Montana-Dakota's Integrated System

<u>Montana</u>	<u>South Dakota</u>	<u>North Dakota</u>	
Custer	Campbell	Adams	Logan
Daniels	Corson	Bowman	McIntosh
Dawson	Edmunds	Burke	McKenzie
Fallon	Faulk	Burleigh	Mercer
Prairie	Harding	Dickey	Morton
Richland	McPherson	Divide	Mountrail
Roosevelt	Perkins	Dunn	Oliver
Rosebud	Potter	Emmons	Renville
Sheridan	Walworth	Golden Valley	Slope
Wibaux		Grant	Stark
		Hettinger	Williams
		Kidder	

Montana-Dakota also provides electric service to a small part of Brown county of South Dakota. However, Brown County is excluded from the database because it includes the town of Aberdeen which is not served by Montana-Dakota but which comprises the majority of the population for the county. Including Brown county would reflect too much of the economic activity that occurs in Aberdeen.

1. Forecast Methodology - Sales

The Integrated System sales forecast is disaggregated into five sales sectors:

- Residential sector.
- Small Commercial & Industrial (SC&I) sector. This sector consists of those commercial and industrial customers whose monthly peak demand averages less than 50 kilowatts over a year's time.
- Large Commercial & Industrial (LC&I) sector. This sector consists of those commercial and industrial customers whose monthly peak demand averages more than 50 kilowatts over a year's time.
- Street Lighting. This sector consists of energy for public street and highway lighting.
- Miscellaneous. This sector includes energy for sales to other public authorities, interdepartmental sales, and company use.

The LC&I sector was further broken down into six end-use categories which were then forecasted individually: Tesoro Refinery sales, Westmoreland Coal Mining sales, Montana Oil Field sales, Sabin Metals sales, Keystone XL Pipeline sales, and General LC&I sales. The General LC&I sales are those LC&I sales that did not fall into the first five end-use categories.

Econometric equations were developed to forecast sales for the three primary customer categories – residential, SC&I, and General LC&I – while sales forecasts for the street lighting and miscellaneous sectors were developed primarily using linear regression. The sales forecasts for the five LC&I end-uses were developed using a combination of regressions and information available from Montana-Dakota's field personnel regarding these large customers.

The development of the sales forecasts for each of the five sales sectors is explained below.

1.1. Residential

The residential sales forecast is derived by developing a forecast of residential use per customer and a forecast of number of residential customers. In this way, it is possible for residential sales to depend on variables such as the residential price of electricity, alternate fuel prices for residential customers (natural gas), personal income per household, heating degree days, cooling degree days, number of households, and year. Higher electricity prices and lower income may result in less electricity use, while higher alternate fuel prices as well as colder than normal winters (more heating degree days) and hotter than normal summers (more cooling degree days) may result in more

electricity consumption. Historical and forecasted values for these variables are available and were tested for statistical significance in developing the residential econometric equation. The historical and forecasted values for these variables are given in Appendix B.

The final use per residential customer model is as follows:

$$\ln(\text{res_upc}_t) = a + b^{CDD} \times CDD_t + b^{HDD} \times HDD_t + b^{yr} \times \text{year}_t + e_t$$

where

- ln = natural logarithm;
- res_upc_t = residential use per customer;
- CDD_t = cooling degree days;
- HDD_t = heating degree days; and
- year_t = year (1985-2009), which serves as a time trend variable

The *a* and the *b*'s are the estimated parameters, and *e_t* is the error term. All variables are actual calendar year values.

The model for the number of customers (bills) is as follows:

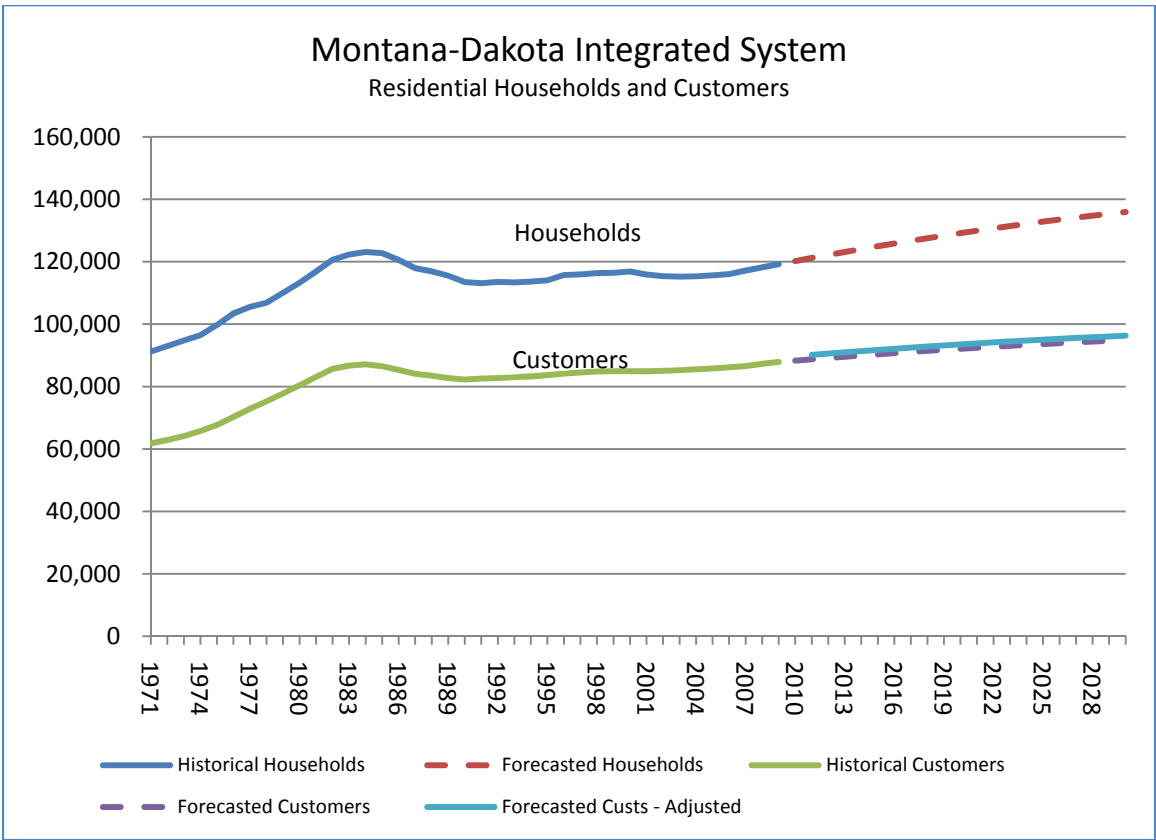
$$\ln(\text{res_bills}_t) = a + b^{hhld} \times \ln(\text{hhlds}_t) + e_t$$

In this equation, *a* and *b^{hhld}* are estimated parameters; *e_t* is the error term, the dependent variable is the natural log of the number of bills and the only explanatory variable is the natural log of the number of households.

When actual 2010 customer numbers became available in early 2011 after the econometric modeling was completed, it was found that residential customer numbers in North Dakota had grown significantly more than what was reflected in both historical growth and forecasted growth. Much of this out-of-the-ordinary growth can be attributed to the significant oil field activity in northwestern North Dakota which was not captured by the Woods & Poole household forecasts. To reflect actual growth, the residential customer numbers in North Dakota were adjusted up by a constant 1,425 customers and the corresponding North Dakota residential sales were increased as well.

The Personal Consumption Expenditure Deflator was used to place residential electricity prices and residential natural gas prices into real dollar terms for both the historical and forecasted time periods. See Appendix B-5 for the Personal Consumption Expenditure Deflator.

Historical and forecasted customers (bills) and households are plotted on the chart below while the values are given in Appendix B-6.



1.2. Small Commercial & Industrial

Small commercial & industrial (SC&I) sales could potentially depend on variables such as the SC&I price of electricity, alternate fuel prices for SC&I customers (natural gas), employment, heating degree days, cooling degree days, and year. Higher electricity prices may result in less electricity use, while higher alternate fuel prices and higher employment as well as colder than normal winters (more heating degree days) and hotter than normal summers (more cooling degree days) may result in more electricity consumption. Historical and forecasted values for these variables are available and were tested for statistical significance in developing the SC&I econometric equation. The historical and forecasted values for these variables are given in Appendix B.

In contrast to the residential sales forecast, a single model is used to forecast small commercial & industrial (SCI) sales. The final model is as follows:

$$\ln(\text{sci_kwh}_t) = a + b^{CDD} \times CDD_t + b^{HDD} \times HDD_t + b^{Emp} \times \text{year}_t + e_t$$

where

ln	= natural logarithm;
sci_kwh _t	= small commercial & industrial sales;
CDD _t	= cooling degree days;
HDD _t	= heating degree days; and
year _t	= year (1989-2009), which serves as a time trend variable.

In this equation, *a* and the *b*'s are estimated parameters; *e_t* is the error term.

The Personal Consumption Expenditure Deflator, whose values are given on Appendix B-5, was used to place small commercial and industrial electricity prices and firm natural gas prices into real dollar terms for both the historical and forecasted time periods.

1.3. Large Commercial & Industrial

1.3.1. Tesoro Refinery

The sales forecast for the Tesoro Refinery in Mandan, ND is based on a linear regression of 1981 to 2009 actual historical sales. Information available from Montana-Dakota's field personnel who have contact with the Tesoro Refinery supports this forecast.

1.3.2. Westmoreland Coal

Westmoreland Coal currently operates three mines that are served on Montana-Dakota's electric system – one at Beulah, ND, one at the Coyote Power Station at Beulah, ND, and one in Savage, MT. Coal sales have been declining for five of the last six years. The major use for coal in our service territory is for coal power plants and generation from coal power plants is being displaced by other generation, primarily wind. The sales forecast for Westmoreland Coal is being held flat at about the 2009 level.

1.3.3. Montana Oil Fields

Oil field sales are made up of two Montana oil fields: the Cedar Creek Anticline near Baker and the Poplar Oil Field near Poplar, MT. Sales at the Cedar Creek Anticline are further broken down into sales to Encore Acquisition (which was recently acquired by Denbury Resources) and all other sales at the Cedar Creek Anticline which includes sales to Burlington Resources. Sales to Encore Acquisition account for more than 70% of all Montana Oil Field sales in total. In the forecast, the sales to Encore Acquisition and sales for Other Oil Field (the Poplar Oil Field plus the Cedar Creek Anticline sales that are not Encore Acquisition sales) are listed separately.

Historical sales for the two oil fields as well as a third oil field, Outlook, which is no longer active, are shown individually on the graph on Appendix A-7. Sales to the oil fields in total generally declined each year from 1986 to 1997. New equipment was added by Encore Acquisition causing sales to increase fairly significantly from 1999 through 2007. At that time Encore had indicated that it completed the special projects it was working on, but then oil prices rose dramatically in 2008 causing Encore oil field activity to further increase. New equipment was also added by Burlington Resources causing the Other Oil Field sales class to have some significant growth from 1998 to 2007 but information available indicated that those special projects were complete, no new wells are planned, and this is now considered a “producing field” rather than an “expanding field.” However, when these forecasts were produced in the fall of 2010, oil prices were still relatively high and sales to Encore continued to be strong.

The forecast methods are described below.

Encore Acquisition

Encore Acquisition operates oil wells in the Cedar Creek Anticline that are served by Montana-Dakota at twelve sites or metering points. The forecast for Encore Acquisition was based on a log-linear regression through 1990 to 2009 actual sales for these “customers.” Encore Acquisition sales were forecasted to grow at the log-linear rate of growth (3.36%) for the next five years through 2014, then at half that rate (1.68% per year) for the five years of 2015-2019, and at half that rate yet again (0.84% per year) for the remainder of the forecast.

Other Oil Fields

The majority of the sales at the Cedar Creek Anticline that are not to Encore Acquisition are those to Burlington Resources. The forecast for Other Oil Field sales was held flat at about 2009 actual levels for 2010 and 2011 based on recent sales trends. The Other Oil Field forecast is set at half the 1990 to 2009 actual sales log-linear rate of growth for 2012-2016 (3.18% per year) and at half that level of growth (1.59% per year) for the remainder of the forecast.

1.3.4. Sabin Metals

The Sabin Metals plant in Williston, ND has been recycling petroleum and petrochemical catalysts used in chemical and petroleum manufacturing in order to isolate and refine the small amounts of gold, silver, platinum, and other precious metals contained in them at the old Dakota Catalyst plant in Williston, ND since mid-2001.

The forecast for Sabin Metals is unchanged both last year and this year from the forecast created in late 2008. The 2008 forecast was based on Montana-Dakota's field personnel, who through contact with management at Sabin Metals, estimated the load at Sabin Metals would experience increases from the addition of a new 1500 kW arc furnace in 2010 that would begin with a 50% load factor and ramp up to a load factor of 95% by the year 2015. The sales forecast for Sabin Metals reflects an expected value of 70% based on the estimated probability that this new furnace will be added. Sales to Sabin Metals are forecasted to continue to increase.

1.3.5. Keystone XL Pipeline

The proposed Keystone XL Pipeline project is an expansion project of the Keystone Pipeline in partnership between TransCanada and ConocoPhillips. This pipeline will originate in Alberta, Canada and extend south to the Gulf Coast in Texas, crossing Montana-Dakota's service territory in the state of Montana near Baker. Keystone has secured firm, long-term contracts from shippers and will proceed with the necessary regulatory applications. Montana-Dakota is expecting to provide electric service to a pumping station in Montana on this pipeline. It is anticipated that this load will come on-line in June 2012.

Montana-Dakota learned after the modeling was complete that there may be a further delay in the start-up of the Keystone XL

Pipeline. Since nothing exact is known at this time, any changes will be reflected in the next forecast.

1.3.6. General LC&I

General LC&I sales (sales to all other LC&I customers that are not to the Tesoro Refinery, Westmoreland Coal, Montana Oil Fields, Sabin Metals, or Keystone XL Pipeline) could depend on variables such as the LC&I price of electricity, alternate fuel prices for LC&I customers (natural gas), heating degree days, cooling degree days, employment, and year. Higher electricity prices can result in less electricity use, while higher alternate fuel prices and higher employment as well as colder than normal winters (more heating degree days) and hotter than normal summers (more cooling degree days) could result in more electricity consumption. Historical and forecasted values for these variables are available and were tested for statistical significance in developing the General LC&I econometric equation.

As with SCI sales, general large commercial & industrial (LCI) sales are forecast using a single model. The final model is as follows:

$$\ln(lci_kwh_t) = a + b^{CDD} \times CDD_t + b^{yr} \times year + e_t$$

where

\ln	= natural logarithm;
lci_kwh_t	= large commercial & industrial sales;
CDD_t	= cooling degree days; and
$year_t$	= year (1989-2009), which serves as a time trend variable.

In this equation, a and the b 's are estimated parameters; e_t is the error term.

After the General LC&I sales are projected using the equation developed as outlined above, adjustments are made to the projected sales to reflect additional load growth that is expected due to the addition of several new General LC&I customers that are in the process of being added or that will be added in 2010, 2011, and 2012. Information regarding the specific LC&I customers that are expected to come on line is provided by Montana-Dakota's field personnel who have contact with and closely monitor these customers. Sales are added to the General LC&I sales sector in 2010, 2011, and 2012 for the following new loads:

- Bear Paw Energy Compressor Motors – Lignite, ND
- Enbridge Pipeline – Stanley, ND
- Miscellaneous new General LC&I loads in Bismarck including :
 - St. Alexius Administration Building
 - St. Gabriel’s Community Senior Care Facility
 - Dakota Carrier Network (DCN) Network Operations Center
 - UND Family Practice Center
 - Bismarck Parks and Recreation Aquatic Center
 - Sunrise Elementary School

These loads total 33,300 MWh in 2011, 68,600 MWh in 2012, and 84,600 MWh in 2013 and thereafter.

While Montana-Dakota is gaining new load in the General LC&I sector, these gains are somewhat offset by the loss of a single large customer, Bobcat Company, which manufactured skid steer loaders at a large plant in Bismarck. The closing of the Bobcat manufacturing facility results in the loss of approximately 31,000 MWh. This is reflected in the General LC&I forecast.

1.4. Street Lighting

Electric sales for the street lighting sector (public street and highway lighting) were forecasted based on the results of a linear regression analysis of actual 1989-2009 sales.

1.5. Miscellaneous

The miscellaneous sales sector is made up of sales for the following three end-uses:

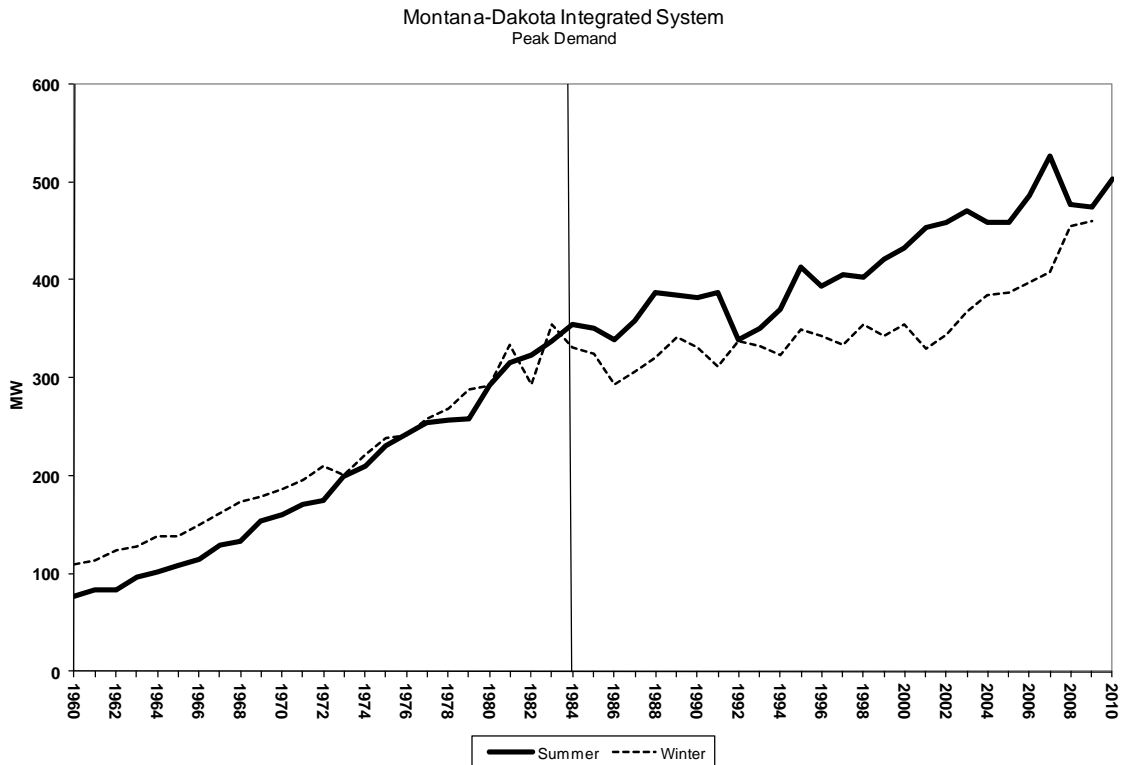
1. Interdepartmental Sales – gas utility use of electricity
2. Other Public Sales – sales to government authorities which includes municipal pumping and some city sales (these sales are served under special contracts that are applicable only to public authorities)
3. Company Use - Montana-Dakota offices

The forecast for Interdepartmental Sales was based on a linear regression on actual 1989-2009 sales while the forecast for Other Public Sales was based on a linear regression on actual 1994-2009

sales. The forecast for Company Use was held constant at the actual 2009 level.

2. Forecast Methodology – Peak Demand

Integrated System historical peak demand is shown on the chart below.



Montana-Dakota was a winter peaking utility prior to 1984. From about 1973 to 1983, the spread between the winter and summer peaks began to narrow and in 1984 Montana-Dakota became a summer peaking utility. The difference between the summer and winter peaks has generally widened since that time. From Montana-Dakota's Residential Energy Use Surveys and other available information, it is known that air conditioning is becoming more prevalent over time and air conditioning load is driving much of the increase in summer peak demand.

The Integrated System peak demand forecast is developed on a total system basis; it is not disaggregated by sector. The summer peak demand forecast was developed through the use of an econometric model. Peak day/hour temperature, annual cooling degree days, total system sales for the year including losses (annual requirements), and a time-trend variable (year) were tested as the independent variables in the econometric model.

For peak day temperature, Montana-Dakota has available the historical hourly temperatures for three major load centers: Bismarck, ND; Williston, ND; and Miles City, MT. Weighted average temperatures for Bismarck (70%), Miles City (15%) and Williston (15%) at the time of the system peak were used as

the peak day temperature. This weighting method has been tested and used in the company's short-term demand forecast as well as in other informal in-house analyses. The inclusion of cooling degree days in the model is based on the fact that Montana-Dakota is a summer peaking utility and that hotter summers create more hot days on which high peaks may be set and may also serve as a proxy for heat buildup on the peak day.

Because of the nature of the econometric models, the historical summer peak demand data were adjusted to reflect customer load interruptions due to Interruptible Rate 38/39 and/or forced distribution outages that occurred at the time of the summer peak. The historical summer peak value thus represents the peak as it would have occurred had there not been any interruptions. Interruptions to the load at customers served on Large Power Demand Response Rate 38 and/or Interruptible Large Power Service Rate 39 typically occur at the time of the system peak. Also, a forced distribution outage occurred at the time of the summer peak in 2002 and voltage reductions were implemented at the time of the summer peaks in 2006 and 2007.

The summer peak demand model is as follows:

$$\ln(\text{peak_load}_t) = a + b^{CDD} \times CDD_t + b^{PTemp} \times \text{peak_temp}_t + b^{Sales} \times \ln(\text{system_kwh}_t) + b^{yr} \times \text{year}_t + e_t$$

where

\ln	= natural logarithm;
peak_load_t	= summer peak demand;
CDD_t	= cooling degree days;
peak_temp_t	= weighted average temp at time of summer peak;
system_kwh_t	= annual energy requirements; and
year_t	= year (1984-2009), which serves as a time trend variable.

In this equation, a and the b 's are estimated parameters; e_t is the error term.

The summer peak demand forecast that results from this econometric model reflects the load growth based on historical trends that Montana-Dakota has experienced. However, there are a couple of new loads that are expected to be added in the 2011-2013 time frame. As mentioned in Section 1.3.6 above, the new loads that have been identified by Montana-Dakota's field personnel are a new motor at Enbridge Pipeline at Stanley, ND, additional load at Bear Paw Energy in Lignite, ND, and new load in Bismarck for the St. Alexius Administration Building, St. Gabriel's Community Senior Care Facility, DCN Network Operations Center, UND Family Practice Center, Bismarck Parks and Recreation Aquatic Center, and Sunrise Elementary School. The incremental load resulting from the addition of these new loads, which will be

added to summer peak as forecasted through the econometric model, amounts to approximately 12.5 MW in 2013 but is again offset by the loss of approximately 5.5 MW of load at Bobcat as explained in Section 1.3.6 above.

The winter peak demand forecast is developed in a similar manner to the summer peak demand forecast except that HDDs were tested for statistical significance in the model rather than CDDs. It was found that HDDs are not statistically significant.

For this forecast, several other variables were tested to see if they play a statistically significant role in the determination of the winter peak. The variables tested were the number of minutes of daylight on the day of the winter peak, the number of days between the winter peak and the winter solstice, and a variable for a Christmas lighting switch to indicate whether or not Christmas lighting was in use at the time of the winter peak (Christmas lighting is “on” if the peak occurs within two weeks prior to Christmas and one week after, and the Christmas lighting switch is “off” if the winter peak occurs outside of that window.) It was found that modeling whether or not Christmas lighting is on at the time of the winter peak is statistically significant.

The winter peak demand model is as follows:

$$\begin{aligned}
 peak_load_t &= a + b^{PTemp} \times peak_temp_t \\
 &\quad + b^{Sales} \times system_kwh_t \\
 &\quad + b^{LtgSwch} \times ltg_expected_value \\
 &\quad + b^{yr} \times year_t + e_t
 \end{aligned}$$

where

- peak_load_t = winter peak demand;
- peak_temp_t = weighted average temp at time of winter peak;
- system_kwh_t = annual energy requirements;
- ltg_expected_value = expected value that Christmas Lighting will be “on” at the time of the winter peak; and
- year_t = year (1984-2009), which serves as a time trend variable.

In this equation, *a* and the *b*'s are estimated parameters; *e_t* is the error term.

3. Forecast Results – Sales and Demand

The forecast methodology for both sales and demand as described in Sections 1 and 2 above results in the initial sales forecasts by sales class and the initial demand forecast. Reductions to the sales forecasts by class and to the demand forecast are made to reflect Demand-Side Management programs that are being implemented. Once these reductions are reflected in the sales forecasts, the total of the sales forecasts by class are adjusted by the loss factor to arrive at the final forecast of energy requirements.

3.1. Demand-Side Management (DSM) Reductions

As reflected in the IRP's filed in 2009, as of July 2010 the following DSM programs have been or are expected to be implemented, and the forecasted reduction in energy and peak demand is reflected in the forecast:

- Conservation Programs
 - EnergyStar[®] Appliance rebates
 - EnergyStar[®] Residential Air Conditioner rebates
 - High-Efficiency Commercial Motor rebates
 - High-Efficiency Commercial Air Conditioner rebates
 - Commercial Lighting Retrofit rebates
- Demand Response Programs
 - Interruptible Large Power Rates 38 & 39
 - Residential Air Conditioner Cycling

3.2. Losses

The sales forecasts reflect the energy delivered to Montana-Dakota's customers' meters. The total amount of electricity generated at the power plants to meet Montana-Dakota's customers' energy needs is greater than what is delivered to the meters and is called the 'Total Energy Requirements.' The difference between the sales and energy requirements reflects the losses that occur within the transmission and distribution system.

The annual energy losses percentage, defined as a fraction of the total annual energy requirements, has varied from year to year. Therefore, these loss percentages are averaged over a ten-year time period. The average value for the past ten years is 7.910%. Using this value for all

future years, the total energy requirements are calculated for each year during the study period.

3.3. Final Energy Requirements Forecast

The forecasted sales and system peak demand are first adjusted to reflect the effects of the DSM programs that are being implemented as explained in Section 3.1 and then adjusted for losses as outlined in Section 3.2 to calculate the total energy requirements and peak demand forecast. This is the amount of energy and capacity that must be generated or purchased to meet Montana-Dakota's customers' energy needs.

The final forecast results are presented on the following several pages. A table summarizing the Integrated System energy requirements and seasonal peak demand is given first, followed by a graph with historical and forecasted seasonal peak demand and energy requirements. A table summarizing historical and forecasted sales by sales sector is given next, followed by a graph of that table's data. The next two pages of this section give historical and forecasted sales by end-use within the LC&I sales sector followed by a graph of the LC&I end-uses. The last page of this section is a table detailing the historical and forecasted residential sales, customers, and use per customer.

Refer to Appendices C-1 through C-8 for graphs of the historical and forecasted sales by sector.

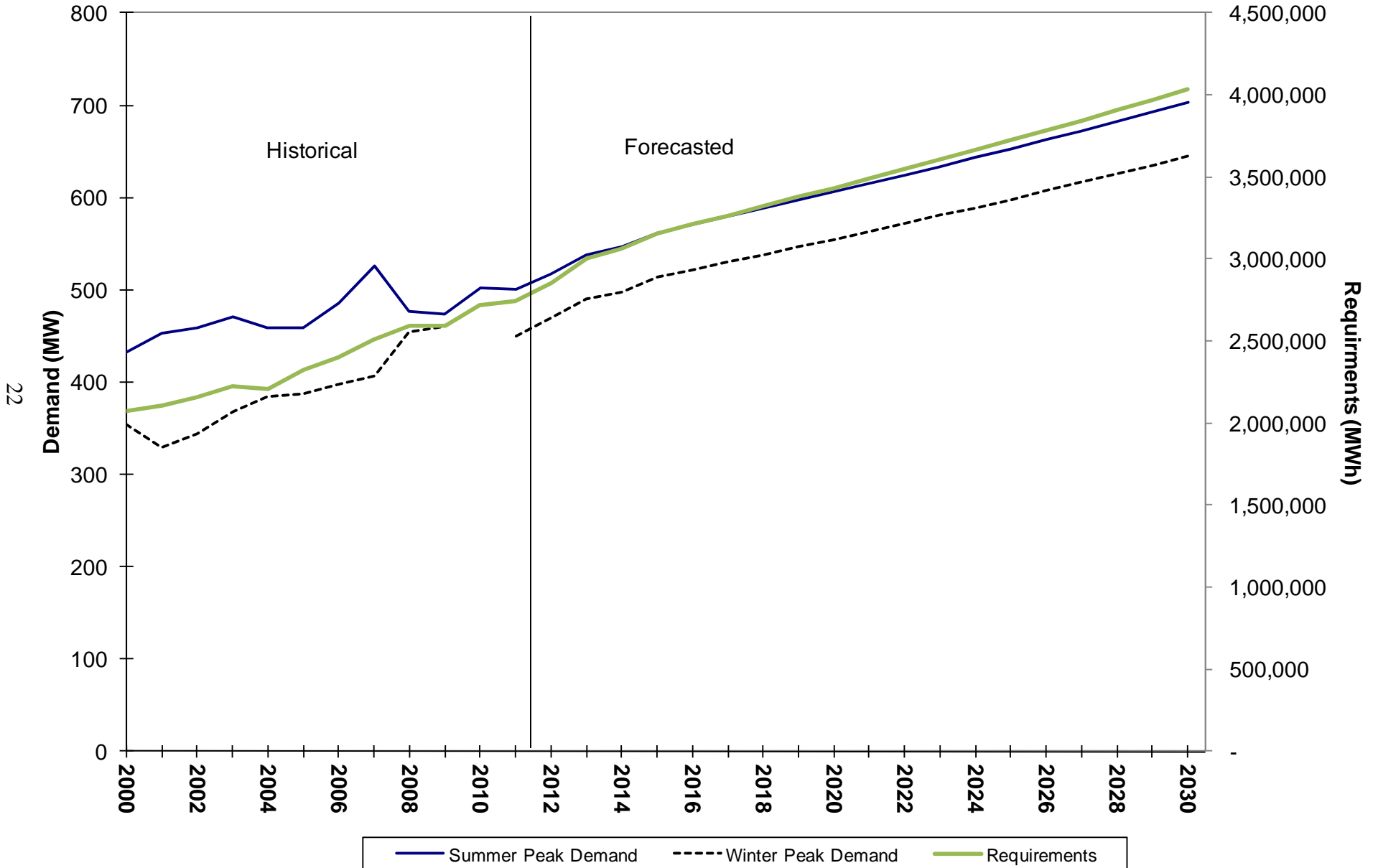
Montana-Dakota Utilities Co.
Historical and Forecasted Energy and Demand
Integrated System
Reflecting Demand-Side Management Programs

Year	Total Energy Requirements (net of DSM)		Summer Peak - MW						Winter Peak ^{*/} After DSM	
	MWh	% Change	<u>Total Demand Before DSM or Interrupt.</u>	<u>Rate 38/39 Interrupt Loads</u>	<u>Conser- vation DSM</u>	<u>Demand Response DSM</u>	<u>Peak Demand After all DSM (Consvtn, DR & Int)</u>	% Change	MW	% Change
2000	2,077,579						432.3		353.9	
2001	2,104,119	1.28%					452.9	4.77%	328.9	-7.06%
2002	2,158,431	2.58%					458.8	1.30%	343.5	4.44%
2003	2,226,531	3.16%					470.5	2.55%	367.7	7.05%
2004	2,204,012	-1.01%					458.4	-2.57%	383.9	4.41%
2005	2,327,117	5.59%					459.1	0.15%	387.2	0.86%
2006	2,397,793	3.04%					485.5	5.75%	397.2	2.58%
2007	2,510,540	4.70%					525.6	8.26%	407.3	2.54%
2008	2,596,990	3.44%					476.6	-9.32%	455.0	11.71%
2009	2,593,368	-0.14%					473.8	-0.59%	459.6	1.01%
2010	2,718,192	4.81%					502.5	6.06%	Not yet available	
2011	2,745,079	0.99%	513.1	7.6	4.2	1.3	500.0	-0.50%	450.3	
2012	2,849,695	3.81%	532.5	10.3	4.2	1.3	516.7	3.34%	469.4	4.24%
2013	3,000,627	5.30%	552.9	10.3	4.2	1.3	537.1	3.95%	489.5	4.28%
2014	3,058,976	1.94%	561.9	10.3	4.2	1.3	546.1	1.68%	498.3	1.80%
2015	3,157,733	3.23%	577.6	10.3	4.2	1.3	561.8	2.87%	513.5	3.05%
2016	3,212,882	1.75%	586.4	10.3	4.2	1.3	570.6	1.57%	521.8	1.62%
2017	3,267,300	1.69%	595.1	10.3	4.2	1.3	579.3	1.52%	529.9	1.55%
2018	3,322,641	1.69%	603.9	10.3	4.2	1.3	588.1	1.52%	538.2	1.57%
2019	3,378,799	1.69%	612.9	10.3	4.2	1.3	597.1	1.53%	546.7	1.58%
2020	3,433,624	1.62%	621.8	10.3	4.2	1.3	606.0	1.49%	554.9	1.50%
2021	3,489,360	1.62%	630.8	10.3	4.2	1.3	615.0	1.49%	563.2	1.50%
2022	3,545,996	1.62%	640.0	10.3	4.2	1.3	624.2	1.50%	571.7	1.51%
2023	3,603,568	1.62%	649.3	10.3	4.2	1.3	633.5	1.49%	580.4	1.52%
2024	3,662,045	1.62%	658.7	10.3	4.2	1.3	642.9	1.48%	589.1	1.50%
2025	3,721,491	1.62%	668.3	10.3	4.2	1.3	652.5	1.49%	598.0	1.51%
2026	3,781,897	1.62%	678.0	10.3	4.2	1.3	662.2	1.49%	607.1	1.52%
2027	3,843,314	1.62%	687.8	10.3	4.2	1.3	672.0	1.48%	616.3	1.52%
2028	3,905,749	1.62%	697.8	10.3	4.2	1.3	682.0	1.49%	625.7	1.53%
2029	3,969,254	1.63%	708.0	10.3	4.2	1.3	692.2	1.50%	635.2	1.52%
2030	4,033,816	1.63%	718.3	10.3	4.2	1.3	702.5	1.49%	644.9	1.53%

*/ Winter Peak is for Nov-Dec of current year and Jan-Apr of following year.

Montana-Dakota Integrated System

Energy Requirements and Summer and Winter Season Peak Demand

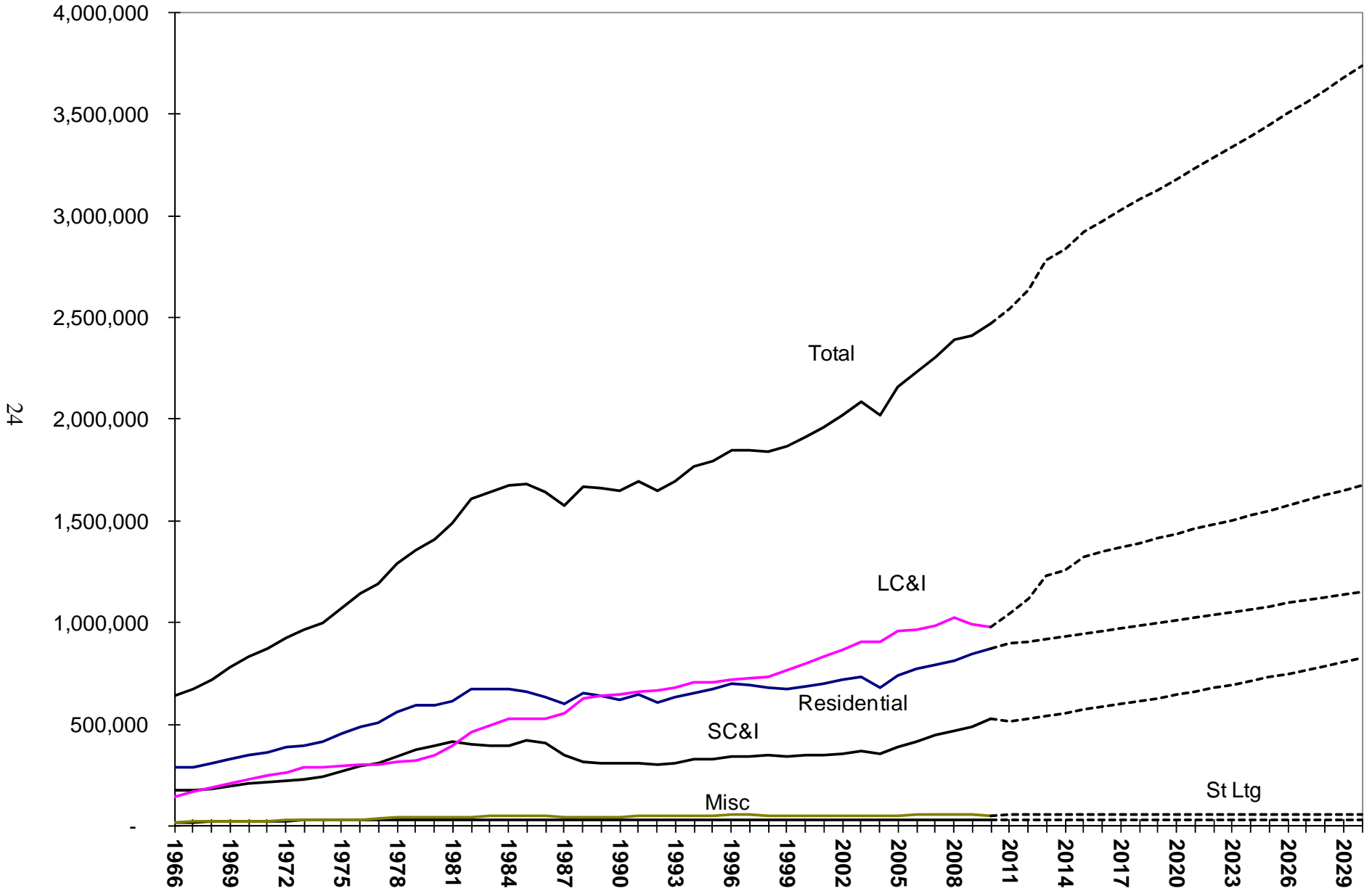


Montana-Dakota Utilities Co.
Historical and Forecasted Annual Sales by Sector
Integrated System
Billing Month Basis
Reflecting Demand-Side Programs

YEAR	<u>Residential</u>		<u>Small C&I</u>		<u>Large C&I</u>		<u>Street Lighting</u>		<u>Miscellaneous</u>		<u>Total Sales</u>		<u>Total Energy Requirements</u>	
	Sales (MWh)	% Change	Sales (MWh)	% Change	Sales (MWh)	% Change	Sales (MWh)	% Change	Sales (MWh)	% Change	Sales (MWh)	% Change	MWh	% Change
2000	683,435		347,350		799,555		30,718		48,958		1,910,016		2,077,579	
2001	700,552	2.50%	346,870	-0.14%	833,248	4.21%	30,792	0.24%	48,931	-0.06%	1,960,393	2.64%	2,104,119	1.28%
2002	720,346	2.83%	353,778	1.99%	866,901	4.04%	30,778	-0.05%	49,387	0.93%	2,021,190	3.10%	2,158,431	2.58%
2003	733,030	1.76%	365,259	3.25%	905,860	4.49%	30,857	0.26%	50,013	1.27%	2,085,019	3.16%	2,226,531	3.16%
2004	680,614	-7.15%	355,984	-2.54%	907,267	0.16%	30,555	-0.98%	48,062	-3.90%	2,022,482	-3.00%	2,204,012	-1.01%
2005	737,106	8.30%	386,746	8.64%	957,169	5.50%	30,376	-0.59%	49,328	2.63%	2,160,725	6.84%	2,327,117	5.59%
2006	768,952	4.32%	413,147	6.83%	962,186	0.52%	30,602	0.74%	53,472	8.40%	2,228,359	3.13%	2,397,793	3.04%
2007	793,914	3.25%	443,914	7.45%	984,672	2.34%	30,773	0.56%	53,954	0.90%	2,307,227	3.54%	2,510,540	4.70%
2008	814,895	2.64%	465,654	4.90%	1,023,079	3.90%	31,080	1.00%	53,705	-0.46%	2,388,413	3.52%	2,596,990	3.44%
2009	846,289	3.85%	490,271	5.29%	991,617	-3.08%	30,433	-2.08%	53,682	-0.04%	2,412,292	1.00%	2,593,368	-0.14%
2010	874,598	3.35%	529,486	8.00%	980,626	-1.11%	30,215	-0.72%	52,262	-2.65%	2,467,187	2.28%	2,718,192	4.81%
2011	894,959	2.33%	516,768	-2.40%	1,045,297	6.59%	30,442	0.75%	53,364	2.11%	2,540,830	2.98%	2,741,810	0.87%
2012	907,775	1.43%	529,665	2.50%	1,117,144	6.87%	30,446	0.01%	53,487	0.23%	2,638,517	3.84%	2,847,224	3.84%
2013	920,732	1.43%	542,882	2.50%	1,231,304	10.22%	30,451	0.02%	53,609	0.23%	2,778,978	5.32%	2,998,795	5.32%
2014	933,739	1.41%	556,425	2.49%	1,258,823	2.23%	30,455	0.01%	53,732	0.23%	2,833,174	1.95%	3,057,278	1.95%
2015	946,825	1.40%	570,303	2.49%	1,323,239	5.12%	30,460	0.02%	53,854	0.23%	2,924,681	3.23%	3,156,023	3.23%
2016	959,961	1.39%	584,525	2.49%	1,346,885	1.79%	30,464	0.01%	53,976	0.23%	2,975,811	1.75%	3,211,198	1.75%
2017	973,095	1.37%	599,099	2.49%	1,369,442	1.67%	30,468	0.01%	54,099	0.23%	3,026,203	1.69%	3,265,576	1.69%
2018	986,321	1.36%	614,033	2.49%	1,392,412	1.68%	30,473	0.02%	54,221	0.23%	3,077,460	1.69%	3,320,887	1.69%
2019	999,579	1.34%	629,337	2.49%	1,415,801	1.68%	30,477	0.01%	54,344	0.23%	3,129,538	1.69%	3,377,084	1.69%
2020	1,012,926	1.34%	645,019	2.49%	1,437,406	1.53%	30,482	0.02%	54,466	0.22%	3,180,299	1.62%	3,431,861	1.62%
2021	1,026,372	1.33%	661,090	2.49%	1,459,391	1.53%	30,486	0.01%	54,589	0.23%	3,231,928	1.62%	3,487,574	1.62%
2022	1,039,858	1.31%	677,558	2.49%	1,481,765	1.53%	30,491	0.02%	54,711	0.22%	3,284,383	1.62%	3,544,178	1.62%
2023	1,053,395	1.30%	694,433	2.49%	1,504,535	1.54%	30,495	0.01%	54,833	0.22%	3,337,691	1.62%	3,601,702	1.62%
2024	1,066,966	1.29%	711,726	2.49%	1,527,708	1.54%	30,500	0.02%	54,956	0.22%	3,391,856	1.62%	3,660,152	1.62%
2025	1,080,577	1.28%	729,447	2.49%	1,551,294	1.54%	30,504	0.01%	55,078	0.22%	3,446,900	1.62%	3,719,550	1.62%
2026	1,094,227	1.26%	747,606	2.49%	1,575,300	1.55%	30,508	0.01%	55,201	0.22%	3,502,842	1.62%	3,779,917	1.62%
2027	1,107,925	1.25%	766,215	2.49%	1,599,736	1.55%	30,513	0.02%	55,323	0.22%	3,559,712	1.62%	3,841,285	1.62%
2028	1,121,680	1.24%	785,284	2.49%	1,624,609	1.55%	30,517	0.01%	55,445	0.22%	3,617,535	1.62%	3,903,682	1.62%
2029	1,135,504	1.23%	804,824	2.49%	1,649,927	1.56%	30,522	0.02%	55,568	0.22%	3,676,345	1.63%	3,967,144	1.63%
2030	1,149,373	1.22%	824,848	2.49%	1,675,700	1.56%	30,526	0.01%	55,690	0.22%	3,736,137	1.63%	4,031,665	1.63%
2000-2010 Average Yearly Growth (10 Years History) 2.43% 4.51% 2.24% -0.09% 1.10% 2.68% 2.82%														
2005-2010 Average Yearly Growth (5 Years History) 3.40% 6.28% 0.72% -0.09% 0.85% 2.71% 3.03%														
2011-2016 Average Yearly Growth (5 Years) 1.41% 2.49% 5.20% 0.01% 0.23% 3.21% 3.21%														
2011-2021 Average Yearly Growth (10 Years) 1.38% 2.49% 3.39% 0.01% 0.23% 2.44% 2.44%														
2011-2030 Average Yearly Growth (19 Years) 1.33% 2.49% 2.51% 0.01% 0.22% 2.05% 2.05%														

Montana-Dakota Integrated System

Historical and Forecasted Sales by Class



Montana-Dakota Utilities Co.
Historical and Forecasted Annual Sales by LC&I End Use
Integrated System
Billing Month Basis
Reflecting Demand-Side Programs

YEAR	<u>General LC&I 1/</u>		<u>Tesoro Refinery 2/</u>		<u>Westmoreland Coal 3/</u>		<u>Encore Acquisition 4/</u>		<u>Other Oil Field 5/</u>		<u>Sabin Metals 6/</u>		<u>TransCanada Pipeline</u>		<u>Total LC&I</u>	
	Sales (MWh)	% Change	Sales (MWh)	% Change	Sales (MWh)	% Change	Sales (MWh)	% Change	Sales (MWh)	% Change	Sales (MWh)	% Change	Sales (MWh)	% Change	Sales (MWh)	% Change
2000	581,857		38,375		26,816		109,618		42,539		350		-		799,555	
2001	595,601	2.36%	44,744	16.60%	27,993	4.39%	118,215	7.84%	42,218	-0.75%	4,478	1179.43%	-	-	833,249	4.21%
2002	607,360	1.97%	42,022	-6.08%	28,091	0.35%	139,392	17.91%	43,529	3.11%	6,507	45.31%	-	-	866,901	4.04%
2003	615,084	1.27%	38,669	-7.98%	27,362	-2.60%	164,191	17.79%	53,153	22.11%	7,401	13.74%	-	-	905,860	4.49%
2004	592,905	-3.61%	42,057	8.76%	29,498	7.81%	175,376	6.81%	54,951	3.38%	12,480	68.63%	-	-	907,267	0.16%
2005	615,993	3.89%	49,717	18.21%	28,563	-3.17%	183,284	4.51%	65,278	18.79%	14,334	14.86%	-	-	957,169	5.50%
2006	618,450	0.40%	50,341	1.26%	28,301	-0.92%	186,144	1.56%	63,390	-2.89%	15,560	8.55%	-	-	962,186	0.52%
2007	627,328	1.44%	50,909	1.13%	27,310	-3.50%	189,738	1.93%	76,887	21.29%	12,500	-19.67%	-	-	984,672	2.34%
2008	633,431	0.97%	60,953	19.73%	26,690	-2.27%	204,380	7.72%	84,788	10.28%	12,837	2.70%	-	-	1,023,079	3.90%
2009	614,692	-2.96%	51,781	-15.05%	21,672	-18.80%	205,424	0.51%	84,036	-0.89%	14,012	9.15%	-	-	991,617	-3.08%
2010	596,266	-3.00%	53,262	2.86%	23,627	9.02%	213,529	3.95%	77,477	-7.80%	16,465	17.51%	-	-	980,626	-1.11%
2011	642,546	7.76%	59,774	12.23%	21,500	-9.00%	219,460	2.78%	84,000	8.42%	18,017	9.43%	-	-	1,045,297	6.59%
2012	691,464	7.61%	61,458	2.82%	21,500	0.00%	226,834	3.36%	86,671	3.18%	18,937	5.11%	10,280	-	1,117,144	6.87%
2013	721,366	4.32%	63,142	2.74%	21,500	0.00%	234,456	3.36%	89,427	3.18%	19,856	4.85%	81,557	693.36%	1,231,304	10.22%
2014	735,559	1.97%	64,826	2.67%	21,500	0.00%	242,334	3.36%	92,271	3.18%	20,776	4.63%	81,557	0.00%	1,258,823	2.23%
2015	750,049	1.97%	66,510	2.60%	21,500	0.00%	246,405	1.68%	95,205	3.18%	21,236	2.21%	122,334	50.00%	1,323,239	5.12%
2016	764,843	1.97%	68,194	2.53%	21,500	0.00%	250,545	1.68%	98,233	3.18%	21,236	0.00%	122,334	0.00%	1,346,885	1.79%
2017	779,945	1.97%	69,878	2.47%	21,500	0.00%	254,754	1.68%	99,795	1.59%	21,236	0.00%	122,334	0.00%	1,369,442	1.67%
2018	795,364	1.98%	71,562	2.41%	21,500	0.00%	259,034	1.68%	101,382	1.59%	21,236	0.00%	122,334	0.00%	1,392,412	1.68%
2019	811,105	1.98%	73,246	2.35%	21,500	0.00%	263,386	1.68%	102,994	1.59%	21,236	0.00%	122,334	0.00%	1,415,801	1.68%
2020	827,176	1.98%	74,930	2.30%	21,500	0.00%	265,598	0.84%	104,632	1.59%	21,236	0.00%	122,334	0.00%	1,437,406	1.53%
2021	843,582	1.98%	76,614	2.25%	21,500	0.00%	267,829	0.84%	106,296	1.59%	21,236	0.00%	122,334	0.00%	1,459,391	1.53%
2022	860,332	1.99%	78,298	2.20%	21,500	0.00%	270,079	0.84%	107,986	1.59%	21,236	0.00%	122,334	0.00%	1,481,765	1.53%
2023	877,432	1.99%	79,982	2.15%	21,500	0.00%	272,348	0.84%	109,703	1.59%	21,236	0.00%	122,334	0.00%	1,504,535	1.54%
2024	894,890	1.99%	81,665	2.10%	21,500	0.00%	274,636	0.84%	111,447	1.59%	21,236	0.00%	122,334	0.00%	1,527,708	1.54%
2025	912,713	1.99%	83,349	2.06%	21,500	0.00%	276,943	0.84%	113,219	1.59%	21,236	0.00%	122,334	0.00%	1,551,294	1.54%
2026	930,909	1.99%	85,033	2.02%	21,500	0.00%	279,269	0.84%	115,019	1.59%	21,236	0.00%	122,334	0.00%	1,575,300	1.55%
2027	949,486	2.00%	86,717	1.98%	21,500	0.00%	281,615	0.84%	116,848	1.59%	21,236	0.00%	122,334	0.00%	1,599,736	1.55%
2028	968,451	2.00%	88,401	1.94%	21,500	0.00%	283,981	0.84%	118,706	1.59%	21,236	0.00%	122,334	0.00%	1,624,609	1.55%
2029	987,813	2.00%	90,085	1.90%	21,500	0.00%	286,366	0.84%	120,593	1.59%	21,236	0.00%	122,334	0.00%	1,649,927	1.56%
2030	1,007,580	2.00%	91,769	1.87%	21,500	0.00%	288,771	0.84%	122,510	1.59%	21,236	0.00%	122,334	0.00%	1,675,700	1.56%
2000-2010 Average Yearly Growth (10 Years History)		0.42%		3.77%		-1.67%		6.61%		8.16%		27.97		-		2.24%
2005-2010 Average Yearly Growth (5 Years History)		-0.49%		1.76%		-4.94%		3.29%		5.28%		1.16%		-		0.72%
2011-2016 Average Yearly Growth (5 Years)		3.55%		2.67%		0.00%		2.68%		3.18%		3.34%		-		5.20%
20110-2021 Average Yearly Growth (10 Years)		2.76%		2.51%		0.00%		2.01%		2.38%		1.66%		-		3.39%
2011-2030 Average Yearly Growth (19 Years)		2.40%		2.28%		0.00%		1.46%		2.01%		0.87%		-		2.51%

1/ General Large Commercial & Industrial (General LC&I) forecast was developed from an econometric forecast.

2/ Tesoro Refinery sales forecast is based on a linear regression of 1981-2009 sales.

3/ Westmoreland Coal is held constant at 2009 actual levels.

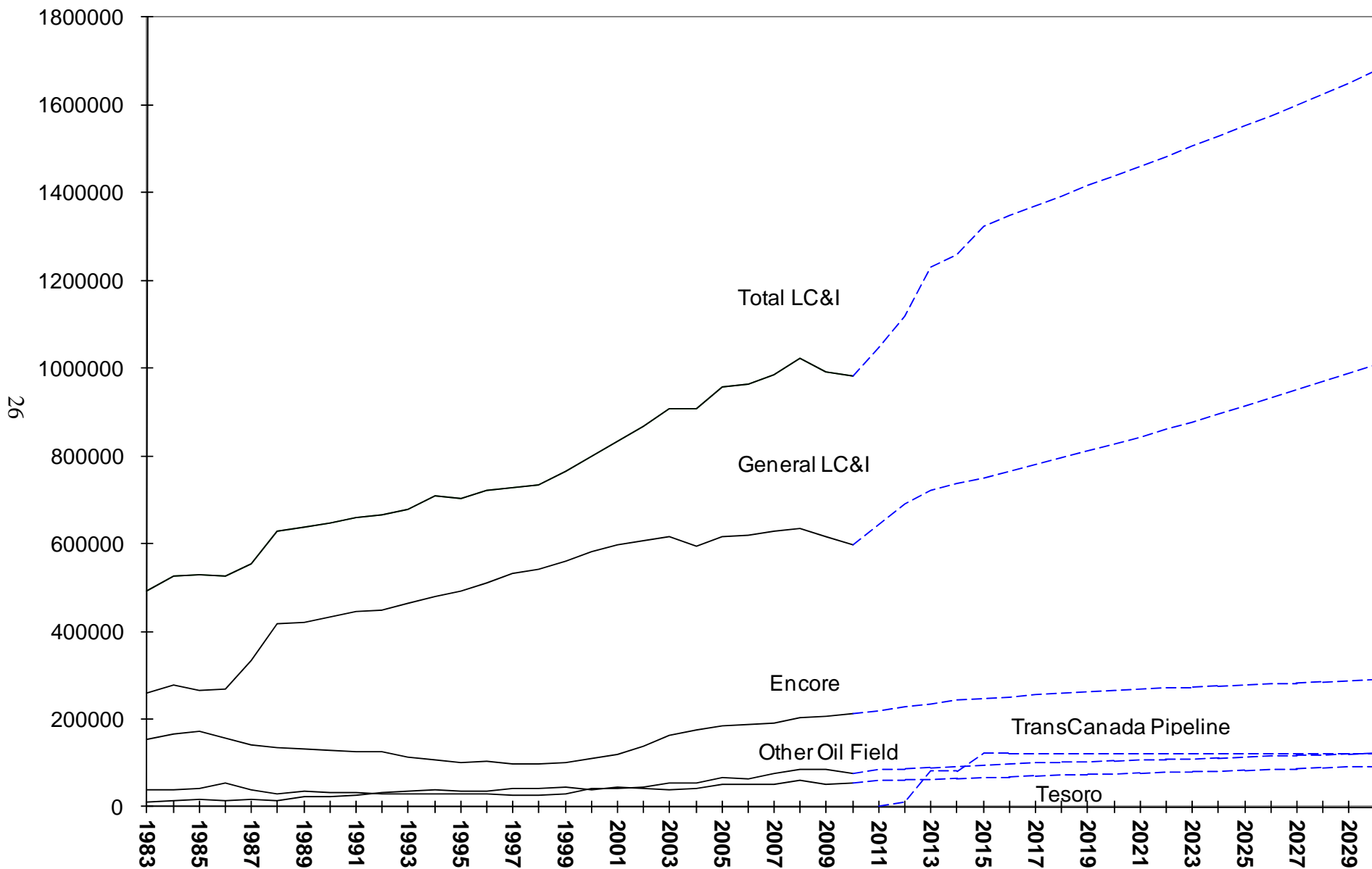
4/ Encore Acquisition sales forecast is based on an exponential curve fit through 1990-2009 actual sales.

5/ Other Oil Field sales forecast is based on an exponential curve fit through 1990-2009 actual sales at Poplar and Other Oil Field (Town 714 less Encore).

6/ Sabin Metals expects to add another arc furnace.

Montana-Dakota Integrated System

Historical and Forecasted Sales by LC&I Customer



Montana-Dakota Utilities Co.
Historical and Forecasted
Residential Sales, Customers, and Use per Customer
Integrated System
With DSM Reductions

<u>Year</u>	<u>Sales (MWh)</u>	<u>% Change</u>	<u>Avg Custs</u>	<u>Cust No Inc/(Dec)</u>	<u>Avg Use Per Cust (kWh/Yr)</u>
2000	683,435		84,914		8,049
2001	700,552	2.50%	84,866	(48)	8,255
2002	720,346	2.83%	85,012	146	8,473
2003	733,030	1.76%	85,278	266	8,596
2004	680,614	-7.15%	85,498	220	7,961
2005	737,106	8.30%	85,791	293	8,592
2006	768,952	4.32%	86,150	359	8,926
2007	793,914	3.25%	86,575	425	9,170
2008	814,895	2.64%	87,262	687	9,338
2009	846,289	3.85%	87,887	625	9,629
2010	874,598	3.35%	88,944	1,057	9,833
2011	894,959	2.33%	90,155	1,211	9,927
2012	907,775	1.43%	90,565	410	10,023
2013	920,732	1.43%	90,971	406	10,121
2014	933,739	1.41%	91,365	394	10,220
2015	946,825	1.40%	91,751	386	10,320
2016	959,961	1.39%	92,125	374	10,420
2017	973,095	1.37%	92,487	362	10,521
2018	986,321	1.36%	92,838	351	10,624
2019	999,579	1.34%	93,179	341	10,728
2020	1,012,926	1.34%	93,512	333	10,832
2021	1,026,372	1.33%	93,838	326	10,938
2022	1,039,858	1.31%	94,154	316	11,044
2023	1,053,395	1.30%	94,459	305	11,152
2024	1,066,966	1.29%	94,754	295	11,260
2025	1,080,577	1.28%	95,036	282	11,370
2026	1,094,227	1.26%	95,308	272	11,481
2027	1,107,925	1.25%	95,569	261	11,593
2028	1,121,680	1.24%	95,823	254	11,706
2029	1,135,504	1.23%	96,068	245	11,820
2030	1,149,373	1.22%	96,303	235	11,935

	<u>Sales</u>	<u>Custs</u>
2000-2010 Average Yearly Growth (10 Years History)	2.43%	0.44%
2005-2010 Average Yearly Growth (5 Years History)	3.40%	0.71%
2011-2016 Average Yearly Growth (5 Years)	1.41%	0.43%
2011-2021 Average Yearly Growth (10 Years)	1.38%	0.40%
2011-2030 Average Yearly Growth (19 Years)	1.33%	0.35%

4. Forecast Uncertainty

Forecasting is a process permeated with uncertainty. The demand and energy projections produced by the econometric process described in the first four sections results in a forecast based solely on the information used as inputs to the equations. For purposes of integrated resource planning, a single forecast does not allow the analysis of risk and uncertainty associated with the input assumptions. Robust resource decisions cannot be made unless uncertainty is considered. That uncertainty can be expressed by peak demand forecasts that reflect temperatures which correspond to higher confidence levels as well as by evaluating high-growth and low-growth scenarios in energy forecasts.

4.1. Effect of Temperature on Peak Demand

The final forecast results given in Section 3 were developed assuming average temperatures at the time of the system peak. However, there are some shortcomings associated with this methodology. First, with an average temperature forecast, by definition actual peak demand would have a 50% probability of being lower than the forecast values and a 50% probability of exceeding forecast values (50/50 forecast). Second, it can appear that peak demand is under forecasted when the actual temperature at the time of system peak exceeds average temperatures.

Montana-Dakota conducts periodically to establish the relationship between summer peak demand and temperature at the time of system peak. As part of the study, the company's historical July and August demands and corresponding temperatures at times when the temperatures equaled or exceeded 85°F on Mondays through Thursdays are analyzed. The 2010 study results indicated that each one degree increase in temperature at the time of summer peak would result in an increase of approximately 5.6 MW in summer peak demand.

Since Montana-Dakota does not have hourly load by state or by customer class, this study is conducted on an Integrated System basis and it is not possible to produce these results by jurisdiction or by customer sector.

Further statistical analysis of temperatures at the time of system peak for the years 1984 through 2009 (prior to 1984 the company was a winter peaking utility) provided the results shown in the following table:

**Temperature Probability at Peak and
Effect on Peak Demand**

<u>Probability</u>	<u>Weighted Average Temperature</u>	<u>Approximate Increase in Peak Demand (MW)</u>
50.0%	97.0	0.0
75.0%	99.9	16.2
80.0%	100.6	20.2
85.0%	101.5	25.2
90.0%	102.6	31.4
95.0%	104.1	40.0
97.0%	105.2	45.9

As the table shows, there is a 90% probability that actual temperatures at the time of the system peak will not exceed 102.6°F. At this temperature, 31.4 MW of capacity in addition to that which was forecasted is needed to meet the system peak demand that may occur. This is called the 90/10 forecast and provides a peak demand forecast for extreme weather conditions. It represents a probability of 90% that the actual peak demand would not exceed the forecast value and a 10% probability that the actual peak demand would be higher than the forecast value.

The following table summarizes the results of the 50/50 probability and 90/10 probability demand forecasts. The 2011 90/10 forecasted demand is calculated to be the 2011 50/50 forecasted demand plus 31.4 MW as shown in the table above. From that point, the growth rate for the 90/10 forecast scenario is assumed to be the same as that of the 50/50 forecast scenario.

Alternate Summer Peak Demand Forecast Comparison

<u>Year</u>	<u>Base Forecast (97.0 degrees F) 50/50 Forecast (MW)</u>	<u>Growth Rate</u>	<u>Alternate Forecast (102.6 degrees F) 90/10 Forecast (MW) */</u>
2011	500.0		531.4
2012	516.7	3.34%	549.1
2013	537.1	3.95%	570.8
2014	546.1	1.68%	580.4
2015	561.8	2.87%	597.1
2016	570.6	1.57%	606.5
2017	579.3	1.52%	615.7
2018	588.1	1.52%	625.1
2019	597.1	1.53%	634.7
2020	606.0	1.49%	644.2
2021	615.0	1.49%	653.8
2022	624.2	1.50%	663.6
2023	633.5	1.49%	673.5
2024	642.9	1.48%	683.5
2025	652.5	1.49%	693.7
2026	662.2	1.49%	704.0
2027	672.0	1.48%	714.4
2028	682.0	1.49%	725.0
2029	692.2	1.50%	735.8
2030	702.5	1.49%	746.7

*/ The growth rate for the 90/10 Forecast scenario is assumed to be the same as that of the 50/50 Forecast scenario.

4.2. High-Growth and Low-Growth Scenario Forecasts

Another approach taken to express uncertainty in this forecast was to simulate high-growth and low-growth scenarios which represent the corresponding economic conditions that may occur. These high-growth and low-growth scenario forecasts were developed as follows.

Historical total energy was analyzed in order to find a period of time during which unusually high growth was experienced and a period of time during which unusually low growth was experienced. Based on the historical sales data given on Appendix A-10 and graphed on Appendix A-11, the average growth rate that occurred from 1977 to 1985 was used as the high growth rate and the average growth rate that occurred from 1985 to

1993 was used as the low growth rate. Both periods consist of eight years of history.

As a result, for the high-growth scenario, an average growth rate of 4.4% per year was assumed to occur during the 20-year forecast horizon. For the low-growth scenario, an average growth rate of 0.5% per year was assumed to occur during the 20-year forecast horizon.

Demand for each scenario was derived by applying the load factors calculated from the base forecast to the high-growth and low-growth scenario forecasted energy.

The results of the high-growth and low-growth scenarios for energy and demand are given below. The following two pages present the graphs of the numeric results.

**High-Growth and Low-Growth Scenarios
Total Annual Energy (GWh) and
Summer Peak Demand (MW)**

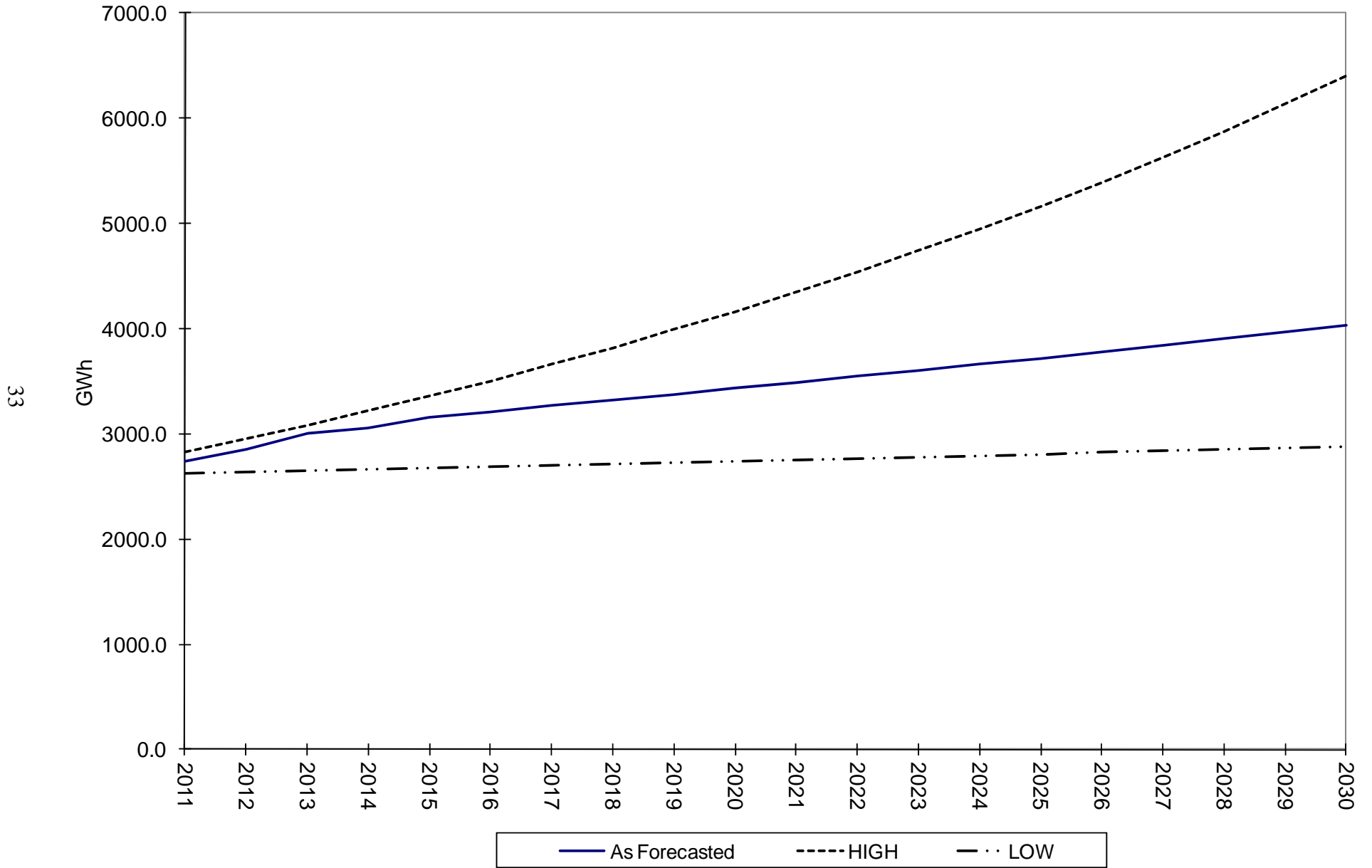
	ENERGY			DEMAND		
	<u>Forecast</u>	<u>HIGH 1/</u>	<u>LOW 2/</u>	<u>Forecast</u>	<u>HIGH</u>	<u>LOW</u>
2011	2745.1	2826.6	2619.4	500.0	514.9	477.1
2012	2849.7	2951.0	2632.5	516.7	535.1	477.3
2013	3000.6	3080.8	2645.7	537.1	551.5	473.6
2014	3059.0	3216.4	2658.9	546.1	574.2	474.7
2015	3157.7	3357.9	2672.2	561.8	597.4	475.4
2016	3212.9	3505.7	2685.6	570.6	622.6	476.9
2017	3267.3	3659.9	2699.0	579.3	648.9	478.5
2018	3322.6	3821.0	2712.5	588.1	676.3	480.1
2019	3378.8	3989.1	2726.1	597.1	704.9	481.7
2020	3433.6	4164.6	2739.7	606.0	735.0	483.5
2021	3489.4	4347.8	2753.4	615.0	766.3	485.3
2022	3546.0	4539.1	2767.2	624.2	799.0	487.1
2023	3603.6	4738.9	2781.0	633.5	833.1	488.9
2024	3662.0	4947.4	2794.9	642.9	868.6	490.7
2025	3721.5	5165.1	2808.9	652.5	905.6	492.5
2026	3781.9	5392.3	2822.9	662.2	944.2	494.3
2027	3843.3	5629.6	2837.0	672.0	984.3	496.1
2028	3905.7	5877.3	2851.2	682.0	1026.3	497.9
2029	3969.3	6135.9	2865.5	692.2	1070.0	499.7
2030	4033.8	6405.9	2879.8	702.5	1115.6	501.5

1/ High forecast assumes 4.4% growth per year (actual 77-85 growth).

2/ Low forecast assumes 0.5% growth per year (actual 95-93 growth).

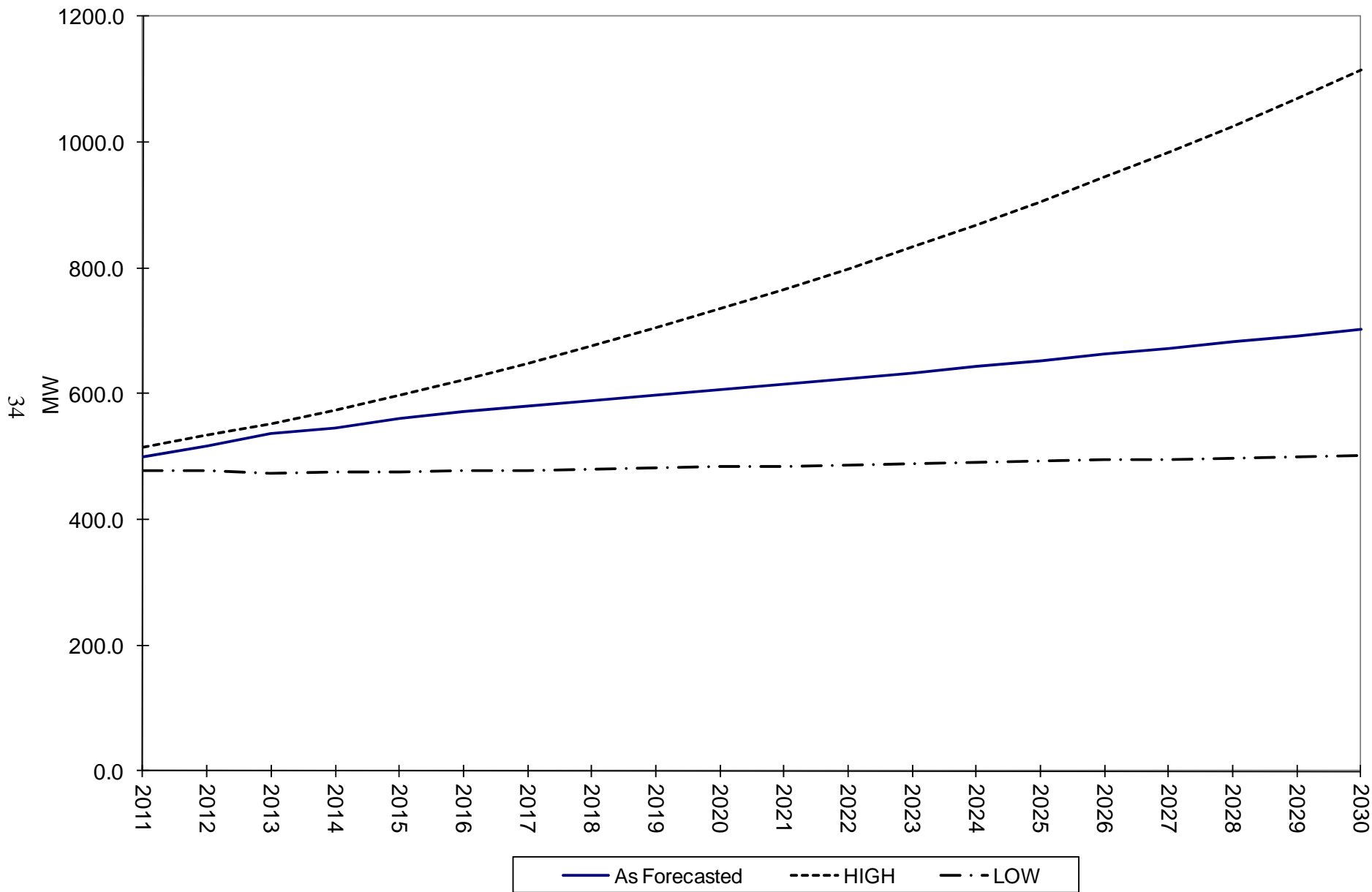
Montana-Dakota Integrated System

High-Growth and Low-Growth Scenarios - Energy in GWh



Montana-Dakota Integrated System

High-Growth and Low-Growth Scenarios - Demand in MW



5. Allocations

Montana-Dakota's Integrated System consists of the service territories in Montana, North Dakota, and South Dakota. The forecasts developed by sector as described up to this point are for Montana-Dakota's Integrated System in total. Montana-Dakota's Financial Forecasting Department requires forecasts of monthly peak demands by state, and monthly sales and energy requirements by sector and by state. Therefore, disaggregating the Integrated System forecast into state and monthly numbers is necessary.

5.1. Sales and Customer Allocations by State

Historical data indicates that each state's portion of the system demand and energy has not remained constant and no consistent trend has emerged. The portions (or ratios) of each sector within the three states also does not indicate any consistent trend. Since the most meaningful time period for Montana-Dakota financial forecasting is five years or less, it was decided to use the ratios from the most recent year (2009) for allocating energy and customers to the states by sales sector. The tables below show the percent of total electric sales and customers allocated to each state by customer class.

Percent of Sales by Sector Allocated to Each State

	<u>ND</u>	<u>SD</u>	<u>MT</u>
Residential	0.71982	0.08235	0.19783
SC&I	0.69451	0.08035	0.22514
MT Oil Fields	-	-	1.00000
Sabin Metals	1.00000	-	-
Westmoreland Coal	0.88769	-	0.11231
Tesoro Refinery	1.00000	-	-
General LC&I	0.75114	0.05295	0.19591
Street Lighting	0.67631	0.08565	0.23804
Other Public Sales	0.80354	0.03777	0.15869
Interdepartmental	0.54741	0.02081	0.43178
Company Use	0.91448	0.04099	0.04453

Percent of Customers by Sector Allocated to Each State

	<u>ND</u>	<u>SD</u>	<u>MT</u>
Residential	0.71263	0.07532	0.21205
SC&I	0.60314	0.10998	0.28688
General LC&I	0.68978	0.07139	0.23883
Street Lighting	0.80345	0.06034	0.13621
Other Public Sales	0.81513	0.06450	0.12037
Interdepartmental	0.56831	0.00546	0.42623

5.2. Sales and Customer Allocations by Month

The Financial Forecasting Department requires a calendar month forecast for each state. This is accomplished through a two-step process. First, monthly estimates of energy and customers by sector are determined by calculating the ratio of the monthly bill cycle value to the annual amount for the 15-year period 1995-2009. Results were averaged for each month for each sector for each state. These ratios were then applied to the annual amounts calculated as described in Section 5.1 to arrive at monthly billing-cycle sales. The allocation factors for billing-cycle sales for each state, month and sector are shown in Appendix A-8. Billing-month to calendar-month apportionment factors are then used to convert from billing-month to calendar-month sales. These apportionment factors are shown in Appendix A-9.

5.3. Peak Demand Allocations by Month

Allocating peak demand on a monthly basis consists of several steps:

1. Ratios of each monthly peak to the seasonal peak were calculated for the Integrated System for the period May 1995 through April 2010. (The summer season is May through October and the winter season is November through April of the next year.)
2. The ratios determined in Step 1 from each month were averaged to determine which month of the season was to be the peak month, second highest month, etc. Final results of this step indicate that July and December are the peak months for the summer and winter seasons, respectively, August and January have the second highest peaks for their respective seasons, etc. (See the table below which gives the monthly ranks for each month by season.)

**Monthly Average of the Ratios of Monthly Peak
To Seasonal Peak for the Integrated System
(Number in Parenthesis is Rank)**

<u>Summer</u> <u>Season</u>			<u>Winter</u> <u>Season</u>		
May	(6)	0.6701	November	(4)	0.8969
June	(3)	0.8882	December	(1)	0.9818
July	(1)	0.9742	January	(2)	0.9662
August	(2)	0.9646	February	(3)	0.9191
September	(4)	0.8254	March	(5)	0.8627
October	(5)	0.6754	April	(6)	0.7959

3. For each season, the monthly ratios determined in Step 1 for the May 1995 through April 2010 time period were sorted into rank sequence for each year of historical data and averaged across the years for each ranking. Applying the ranked average ratios from this step to the proper month according to the rank determined in Step 2 results in the monthly assignments given in the following table.

**15-Year Average Monthly Ratios of Seasonal Peaks
For the Integrated System**

January	0.9605	July	1.0000
February	0.9251	August	0.9550
March	0.8494	September	0.8054
April	0.7954	October	0.6949
May	0.6486	November	0.8923
June	0.8939	December	1.0000

5.4. Peak Demand Allocation by Month and State

The methodology to allocate monthly demands to each state is essentially the same as described in Section 5.1 only demand is not allocated by sector. Therefore, only the 2009 monthly ratios by state were used. Appendix A-8 lists the monthly peak demand ratios for each state.

5.5. Annual Energy and Seasonal Peak Demand by State

Historical and forecasted sales by sector and in total are shown on the graphs on Appendices C-1 through C-8.

The forecasts of summer and winter peak demands and annual energy through the year 2030 for the states of Montana, North Dakota, and South Dakota are also given in Appendix C. The peak demand and annual energy for Montana, North Dakota, South Dakota, and the Integrated System are shown on Appendix C-9, C-10, C-11, and C-12. Appendices C-13, C-14, and C-15 graphically portray the tables in Appendices C-9 through C-12.

5.6. Sales Forecasts by Sector

The monthly forecasts for the ten year period 2011-2020, which result from the allocation method described above, are shown in Appendices D, E, F, and G for Montana, North Dakota, South Dakota, and the Integrated System, respectively.

APPENDIX A

Integrated System Historical Data

MONTANA DAKOTA UTILITIES CO.
ANNUAL SALES BY CLASS FOR THE STATE OF MONTANA
(KILOWATT HOURS)

<u>Year</u>	<u>Residential</u>	<u>Small C&I</u>	<u>Large C&I</u>	<u>Street Lighting</u>	<u>Other Public Sales</u>	<u>Interdepartmental</u>	<u>Company Use</u>	<u>Unbilled</u>	<u>Total</u>
1966	68,502,477	49,977,929	72,419,095	3,866,284	3,808,210	1,015,211	377,210	-	199,966,416
1967	68,579,218	50,233,896	98,914,908	4,015,663	3,715,582	1,091,354	810,948	-	227,361,569
1968	71,874,276	52,477,560	118,039,208	4,249,304	3,535,121	1,375,297	723,627	-	252,274,393
1969	78,325,684	53,242,727	138,245,825	5,604,625	3,863,692	1,249,804	709,401	-	281,241,758
1970	82,496,690	55,175,717	153,459,061	6,083,320	3,897,568	1,160,863	737,641	-	303,010,860
1971	85,705,748	55,865,479	163,248,877	6,492,393	4,104,508	958,540	960,127	-	317,335,672
1972	90,077,273	58,161,951	172,396,207	6,600,222	3,795,853	992,915	890,585	-	332,915,006
1973	92,338,476	61,367,352	190,984,413	6,706,073	4,211,624	1,158,025	902,676	-	357,668,639
1974	96,505,351	66,904,551	186,287,388	6,840,674	4,153,930	1,315,961	945,082	-	362,952,937
1975	105,048,515	69,452,309	178,400,297	7,087,080	3,913,278	1,506,121	984,351	-	366,391,951
1976	115,110,425	77,612,604	175,313,131	7,268,240	4,495,249	1,583,748	1,004,267	-	382,387,664
1977	120,454,365	81,073,772	172,531,607	7,359,231	4,657,927	1,548,399	1,036,205	-	388,661,506
1978	129,852,166	87,526,266	175,599,086	7,353,808	4,677,788	4,820,487	1,049,471	-	410,879,072
1979	136,672,460	96,589,760	178,879,168	7,359,189	5,467,739	2,283,782	1,029,716	-	428,281,814
1980	136,149,204	101,715,349	198,015,998	7,459,268	6,123,304	1,797,126	972,817	-	452,233,066
1981	144,334,391	111,228,786	206,717,766	7,487,108	6,381,820	1,715,542	752,755	-	478,618,168
1982	153,313,720	125,817,634	213,636,154	7,407,897	5,634,466	2,943,589	1,651,780	-	510,405,240
1983	150,623,962	108,187,279	249,492,431	7,481,435	7,159,425	1,709,185	917,496	-	525,571,213
1984	149,973,668	101,423,250	272,228,601	7,379,668	6,998,461	3,442,266	900,229	-	542,346,143
1985	142,726,940	106,608,809	281,467,351	7,188,874	6,516,453	1,001,594	639,636	-	546,149,657
1986	133,656,316	101,534,376	277,264,926	7,266,290	5,968,032	189,694	590,579	-	526,470,213
1987	126,119,227	95,806,617	248,018,234	7,290,415	6,493,543	195,663	580,473	-	484,504,172
1988	139,327,515	87,777,108	259,622,149	7,217,742	7,711,112	211,260	616,658	-	502,483,544
1989	133,923,369	85,321,774	255,852,368	7,076,958	7,254,814	226,885	599,867	-	490,256,035
1990	130,093,020	84,487,870	253,081,235	7,009,344	7,148,412	226,321	714,125	-	482,760,327
1991	135,844,961	85,054,308	253,947,072	7,232,332	6,944,172	225,952	606,717	-	489,855,514
1992	126,265,220	82,097,610	246,018,931	7,228,554	6,937,275	215,649	560,531	-	469,323,770
1993	131,148,008	85,150,142	239,566,466	7,228,736	6,709,227	223,166	621,957	-	470,647,702
1994	137,293,020	91,734,345	237,573,170	7,257,426	7,110,947	232,838	679,830	-	481,881,576
1995	139,222,942	92,004,117	231,710,303	7,224,945	6,846,494	228,038	621,915	-	477,858,754
1996	147,421,480	96,007,848	231,515,420	7,237,827	7,135,267	233,336	574,831	-	490,126,009
1997	144,515,075	94,430,882	238,928,697	7,237,555	7,244,423	201,302	556,239	-	493,114,173
1998	144,374,643	96,561,060	237,770,443	7,271,601	7,162,112	213,369	549,751	-	493,902,979
1999	139,939,058	93,535,156	251,450,993	7,241,875	7,037,487	201,768	551,485	-	499,957,822
2000	143,298,426	94,947,102	276,845,617	7,212,210	6,819,914	218,795	456,819	-	529,798,883
2001	144,170,040	94,133,492	282,466,554	7,242,218	6,677,075	218,859	453,240	-	535,361,478
2002	147,916,359	96,252,274	306,159,986	7,240,913	6,893,847	195,977	448,893	-	565,108,249
2003	153,518,427	100,463,048	340,070,071	7,208,314	6,991,783	190,115	501,557	-	608,943,315
2004	141,249,319	98,150,615	348,097,119	7,249,849	6,709,211	178,934	469,139	-	602,104,186
2005	150,705,819	102,045,511	364,489,268	7,232,015	6,481,903	194,114	454,825	-	631,603,455
2006	157,205,695	104,213,569	368,666,049	7,202,765	6,996,525	189,666	435,247	-	644,909,516
2007	162,186,142	109,101,052	385,230,122	7,187,164	6,827,828	197,773	430,092	-	671,160,173
2008	162,181,766	108,595,072	408,686,454	7,243,765	7,034,312	190,513	411,809	-	694,343,691
2009	167,420,839	110,379,920	407,647,345	7,244,288	7,149,420	187,117	364,946	-	700,393,875
2010	171,661,490	109,187,916	415,946,482	7,203,307	6,973,614	185,423	351,780	-	711,510,012

MONTANA DAKOTA UTILITIES CO.
ANNUAL SALES BY CLASS FOR THE STATE OF NORTH DAKOTA
(KILOWATT HOURS)

<u>Year</u>	<u>Residential</u>	<u>Small C&I</u>	<u>Large C&I</u>	<u>Street Lighting</u>	<u>Other Public Sales</u>	<u>Interdepartmental</u>	<u>Company Use</u>	<u>Unbilled</u>	<u>Total</u>
1966	177,839,445	101,454,865	62,248,779	12,065,801	9,778,523	242,324	627,634	35,481	364,292,852
1967	178,648,631	101,511,079	66,238,823	12,404,851	10,627,735	235,590	1,496,352	68,626	371,231,687
1968	189,586,695	108,098,127	68,327,053	13,528,733	11,306,057	1,075,808	1,514,551	68,231	393,505,255
1969	203,352,077	117,146,235	69,429,138	14,548,153	11,781,023	3,257,680	1,710,576	66,543	421,291,425
1970	215,129,232	128,966,438	74,006,755	15,405,493	12,432,105	2,976,220	1,632,669	66,670	450,615,582
1971	224,660,134	137,368,067	78,485,841	15,852,055	12,356,099	1,532,592	3,570,747	68,888	473,894,423
1972	241,177,868	141,541,263	85,849,701	16,145,159	12,610,906	230,775	5,480,921	72,184	503,108,777
1973	245,827,613	146,917,105	92,262,004	16,519,767	14,113,173	198,917	5,488,128	71,349	521,398,056
1974	259,763,946	151,905,722	95,263,639	16,812,962	14,147,896	207,547	5,388,873	64,700	543,555,285
1975	284,712,928	174,078,088	107,153,806	17,229,492	14,613,377	194,573	5,283,319	54,272	603,319,855
1976	307,231,757	188,990,076	119,225,930	17,788,799	17,287,746	233,931	5,201,276	58,861	656,018,376
1977	322,066,615	202,204,724	123,518,797	18,705,610	20,388,865	775,960	5,329,555	61,312	693,051,438
1978	360,829,206	226,814,052	131,861,024	19,233,630	22,666,150	448,114	5,583,243	55,953	767,491,372
1979	385,274,877	251,074,945	134,220,720	19,899,710	23,913,957	263,925	5,383,105	56,305	820,087,544
1980	390,283,221	265,468,707	140,987,413	20,492,222	26,160,460	382,762	5,040,756	44,390	848,859,931
1981	408,735,140	273,869,995	175,505,109	21,076,949	24,329,774	244,375	4,212,597	46,134	908,020,073
1982	452,363,924	245,889,852	236,334,289	21,499,821	26,288,435	261,436	4,964,613	47,986	987,650,356
1983	456,184,125	258,134,530	230,553,333	21,370,120	28,270,730	382,443	8,659,379	41,916	1,003,596,576
1984	455,285,616	267,515,911	240,737,178	20,966,383	28,884,506	2,020,361	6,602,362	42,325	1,022,054,642
1985	450,793,794	284,254,986	233,446,499	20,793,870	28,421,516	194,570	6,810,757	39,484	1,024,755,476
1986	434,367,094	282,091,350	232,968,286	20,399,709	29,251,485	283,486	8,387,924	37,451	1,007,786,785
1987	414,769,777	226,151,695	289,829,031	20,488,538	27,652,568	306,718	6,531,047	46,880	985,776,254
1988	449,769,976	199,876,624	348,910,521	20,488,320	27,128,548	233,035	6,339,307	34,969	1,052,781,300
1989	443,827,623	195,738,987	362,960,433	20,407,635	26,027,847	236,202	6,825,024	38,865	1,056,062,616
1990	430,825,093	192,983,257	373,076,254	20,510,585	25,648,820	243,363	6,283,396	37,303	1,049,608,071
1991	450,333,411	196,030,842	383,766,958	20,458,655	30,828,407	266,645	6,137,808	33,378	1,087,856,104
1992	423,260,909	188,693,144	398,197,743	20,663,341	31,720,268	282,076	6,211,805	48,627	1,069,077,913
1993	439,344,573	191,672,169	416,752,959	20,565,116	31,146,204	322,281	5,956,790	46,519	1,105,806,611
1994	456,342,312	203,783,580	445,849,305	20,574,807	32,828,420	316,899	6,987,912	41,960	1,166,725,195
1995	473,310,757	207,631,769	447,406,363	20,664,316	32,139,766	311,888	7,116,061	43,365	1,188,624,285
1996	489,581,963	212,394,753	463,633,627	20,598,257	33,617,666	293,678	7,112,634	42,287	1,227,274,865
1997	485,185,916	215,341,328	464,356,987	20,448,097	35,525,187	276,970	7,039,295	37,836	1,228,211,616
1998	476,555,259	216,137,378	470,352,073	20,780,506	33,387,706	268,955	6,460,961	35,675	1,223,978,513
1999	476,150,870	215,933,149	487,339,322	20,930,538	32,535,686	269,387	6,214,785	24,378	1,239,398,115
2000	480,611,397	220,082,001	496,752,971	20,765,723	32,298,343	276,507	5,758,461	-	1,256,545,403
2001	495,264,092	219,718,551	524,934,913	20,801,786	32,839,971	283,411	5,380,094	-	1,299,222,818
2002	510,649,026	223,725,158	534,095,959	20,845,828	33,601,388	245,882	4,924,187	-	1,328,087,428
2003	518,362,506	230,831,463	538,714,606	20,964,805	33,818,825	243,012	5,146,364	-	1,348,081,581
2004	482,828,358	224,924,291	532,079,391	20,632,572	32,251,096	238,077	5,030,082	-	1,297,983,867
2005	525,132,818	250,022,338	563,792,863	20,484,092	33,806,432	248,541	5,291,349	-	1,398,778,433
2006	550,070,624	274,727,542	564,963,429	20,772,430	35,894,619	238,213	7,203,891	-	1,453,870,748
2007	568,709,867	299,602,230	570,170,485	20,947,764	36,072,776	235,341	7,511,339	-	1,503,249,802
2008	585,608,722	320,093,226	583,501,829	21,200,739	35,709,163	242,421	7,356,084	-	1,553,712,184
2009	609,178,728	340,495,770	551,113,741	20,582,112	36,202,033	237,223	7,494,346	-	1,565,303,953
2010	632,068,296	382,985,447	530,340,771	20,372,584	35,746,426	237,329	7,232,018	-	1,608,982,871

MONTANA DAKOTA UTILITIES CO.
ANNUAL SALES BY CLASS FOR THE STATE OF SOUTH DAKOTA
(KILOWATT HOURS)

<u>Year</u>	<u>Residential</u>	<u>Small C&I</u>	<u>Large C&I</u>	<u>Street Lighting</u>	<u>Other Public Sales</u>	<u>Interdepartmental</u>	<u>Company Use</u>	<u>Unbilled</u>	<u>Total</u>
1966	42,230,739	22,427,449	6,732,280	2,095,903	1,697,150	1,424	126,325	-	75,311,270
1967	41,997,237	25,800,957	4,063,750	1,979,052	1,847,881	1,153	260,654	-	75,950,684
1968	43,952,926	23,284,225	3,940,603	2,575,843	1,707,100	1,608	268,857	-	75,731,162
1969	46,482,606	24,758,227	929,501	2,598,403	1,841,636	2,207	287,654	-	76,900,234
1970	47,361,709	22,775,007	3,464,385	2,547,642	1,759,567	2,154	269,189	-	78,179,653
1971	49,310,679	22,255,017	4,727,415	2,716,302	1,834,084	2,362	315,769	215	81,161,843
1972	52,980,235	22,785,758	5,347,104	2,813,232	1,918,580	2,270	365,122	-	86,212,301
1973	53,570,804	23,259,175	5,400,790	2,859,812	1,987,540	2,559	432,365	-	87,513,045
1974	56,666,860	23,203,748	5,840,707	2,994,179	2,138,696	2,487	428,561	-	91,275,238
1975	62,824,496	24,817,191	6,748,459	3,128,822	2,030,891	2,433	480,797	-	100,033,089
1976	66,343,302	25,800,602	7,756,873	3,103,016	2,053,227	2,370	467,531	-	105,526,921
1977	65,963,975	26,111,838	8,474,190	3,124,296	1,840,714	3,151	478,536	-	105,996,700
1978	68,589,710	27,328,956	9,693,110	3,113,948	1,774,321	2,966	607,731	-	111,110,742
1979	67,938,559	26,971,950	10,123,460	3,121,871	1,904,825	2,983	620,674	-	110,684,322
1980	64,325,468	26,196,596	10,851,108	3,140,131	2,170,017	3,737	507,507	-	107,194,564
1981	61,878,613	25,902,182	11,243,318	3,083,603	1,830,577	2,970	356,399	-	104,297,662
1982	65,558,005	27,156,570	11,426,316	3,030,031	1,871,552	2,943	607,247	-	109,652,664
1983	65,118,829	26,884,079	12,353,692	3,006,759	1,716,506	2,486	557,667	-	109,640,018
1984	65,920,772	27,933,476	12,698,954	2,964,197	1,816,219	1,782	545,965	-	111,881,365
1985	64,222,969	27,289,287	13,297,147	2,968,984	1,826,822	7,425	829,238	-	110,441,872
1986	62,444,941	27,005,631	14,820,308	2,987,404	1,637,375	22,258	571,879	-	109,489,796
1987	59,644,668	26,773,933	16,227,633	2,986,179	1,857,719	28,687	363,754	-	107,882,573
1988	63,622,038	28,168,260	18,064,220	2,953,900	1,925,245	14,449	419,470	-	115,167,582
1989	61,747,940	28,578,702	19,249,467	2,937,751	2,019,854	13,359	456,236	-	115,003,309
1990	59,041,129	27,674,002	20,540,349	2,938,991	1,879,111	9,908	369,286	-	112,452,776
1991	60,709,134	28,371,913	20,800,179	2,944,664	2,119,069	10,945	398,192	-	115,354,096
1992	56,416,333	27,113,531	21,125,368	2,920,263	2,354,085	10,701	343,584	-	110,283,865
1993	59,615,263	27,986,509	22,314,105	2,921,246	2,116,180	11,786	397,837	-	115,362,926
1994	61,124,471	30,267,538	23,784,346	2,922,998	2,427,771	11,901	422,267	-	120,961,292
1995	62,959,707	31,134,415	24,670,253	2,854,516	3,097,276	11,484	404,093	-	125,131,744
1996	63,638,266	32,141,951	25,352,355	2,872,136	3,137,175	12,172	352,311	-	127,506,366
1997	61,623,748	31,753,237	25,522,619	2,805,901	3,058,443	11,319	342,786	-	125,118,053
1998	59,360,287	32,313,292	25,113,488	2,796,107	3,003,078	9,777	286,457	-	122,882,486
1999	59,567,949	32,498,800	25,977,705	2,807,423	2,954,190	9,857	297,480	-	124,113,404
2000	59,525,312	32,320,913	25,956,274	2,740,106	2,810,931	9,227	308,855	-	123,671,618
2001	61,117,630	33,018,447	25,846,819	2,748,375	2,742,790	9,414	325,833	-	125,809,308
2002	61,780,443	33,800,702	26,645,097	2,691,584	2,737,670	9,884	329,617	-	127,994,997
2003	61,149,061	33,964,499	27,075,451	2,683,876	2,791,070	10,319	319,687	-	127,993,963
2004	56,535,958	32,909,312	27,090,632	2,672,475	2,885,412	9,788	290,260	-	122,393,837
2005	61,267,370	34,678,560	28,886,389	2,660,320	2,535,633	10,026	305,636	-	130,343,934
2006	61,675,574	34,206,361	28,556,470	2,626,482	2,204,422	9,086	299,875	-	129,578,270
2007	63,017,590	35,210,997	29,271,378	2,637,764	2,364,117	9,526	304,850	-	132,816,222
2008	67,104,019	36,965,622	30,890,745	2,635,828	2,432,011	9,826	318,928	-	140,356,979
2009	69,689,062	39,395,377	32,856,198	2,606,502	1,701,927	9,019	335,872	-	146,593,957
2010	70,867,723	37,312,865	34,338,981	2,638,638	1,210,011	8,876	316,402	-	146,693,496

MONTANA DAKOTA UTILITIES CO.
ANNUAL SALES BY CLASS FOR THE INTEGRATED SYSTEM
(KILOWATT HOURS)

<u>Year</u>	<u>Residential</u>	<u>Small C&I</u>	<u>Large C&I</u>	<u>Street Lighting</u>	<u>Other Public Sales</u>	<u>Interdepartmental</u>	<u>Company Use</u>	<u>Unbilled</u>	<u>Total</u>
1966	288,572,661	173,860,243	141,400,154	18,027,988	15,283,883	1,258,959	1,131,169	35,481	639,570,538
1967	289,225,086	177,545,932	169,217,481	18,399,566	16,191,198	1,328,097	2,567,954	68,626	674,543,940
1968	305,413,897	183,859,912	190,306,864	20,353,880	16,548,278	2,452,713	2,507,035	68,231	721,510,810
1969	328,160,367	195,147,189	208,604,464	22,751,181	17,486,351	4,509,691	2,707,631	66,543	779,433,417
1970	344,987,631	206,917,162	230,930,201	24,036,455	18,089,240	4,139,237	2,639,499	66,670	831,806,095
1971	359,676,561	215,488,563	246,462,133	25,060,750	18,294,691	2,493,494	4,846,643	69,103	872,391,938
1972	384,235,376	222,488,972	263,593,012	25,558,613	18,325,339	1,225,960	6,736,628	72,184	922,236,084
1973	391,736,893	231,543,632	288,647,207	26,085,652	20,312,337	1,359,501	6,823,169	71,349	966,579,740
1974	412,936,157	242,014,021	287,391,734	26,647,815	20,440,522	1,525,995	6,762,516	64,700	997,783,460
1975	452,585,939	268,347,588	292,302,562	27,445,394	20,557,546	1,703,127	6,748,467	54,272	1,069,744,895
1976	488,685,484	292,403,282	302,295,934	28,160,055	23,836,222	1,820,049	6,673,074	58,861	1,143,932,961
1977	508,484,955	309,390,334	304,524,594	29,189,137	26,887,506	2,327,510	6,844,296	61,312	1,187,709,644
1978	559,271,082	341,669,274	317,153,220	29,701,386	29,118,259	5,271,567	7,240,445	55,953	1,289,481,186
1979	589,885,896	374,636,655	323,223,348	30,380,770	31,286,521	2,550,690	7,033,495	56,305	1,359,053,680
1980	590,757,893	393,380,652	349,854,519	31,091,621	34,453,781	2,183,625	6,521,080	44,390	1,408,287,561
1981	614,948,144	411,000,963	393,466,193	31,647,660	32,542,171	1,962,887	5,321,751	46,134	1,490,935,903
1982	671,235,649	398,864,056	461,396,759	31,937,749	33,794,453	3,207,968	7,223,640	47,986	1,607,708,260
1983	671,926,916	393,205,888	492,399,456	31,858,314	37,146,661	2,094,114	10,134,542	41,916	1,638,807,807
1984	671,180,056	396,872,637	525,664,733	31,310,248	37,699,186	5,464,409	8,048,556	42,325	1,676,282,150
1985	657,743,703	418,153,082	528,210,997	30,951,728	36,764,791	1,203,589	8,279,631	39,484	1,681,347,005
1986	630,468,351	410,631,357	525,053,520	30,653,403	36,856,892	495,438	9,550,382	37,451	1,643,746,794
1987	600,533,672	348,732,245	554,074,898	30,765,132	36,003,830	531,068	7,475,274	46,880	1,578,162,999
1988	652,719,529	315,821,992	626,596,890	30,659,962	36,764,905	458,744	7,375,435	34,969	1,670,432,426
1989	639,498,932	309,639,463	638,062,268	30,422,344	35,302,515	476,446	7,881,127	38,865	1,661,321,960
1990	619,959,242	305,145,129	646,697,838	30,458,920	34,676,343	479,592	7,366,807	37,303	1,644,821,174
1991	646,887,506	309,457,063	658,514,209	30,635,651	39,891,648	503,542	7,142,717	33,378	1,693,065,714
1992	605,942,462	297,904,285	665,342,042	30,812,158	41,011,628	508,426	7,115,920	48,627	1,648,685,548
1993	630,107,844	304,808,820	678,633,530	30,715,098	39,971,611	557,233	6,976,584	46,519	1,691,817,239
1994	654,759,803	325,785,463	707,206,821	30,755,231	42,367,138	561,638	8,090,009	41,960	1,769,568,063
1995	675,493,406	330,770,301	703,786,919	30,743,777	42,083,536	551,410	8,142,069	43,365	1,791,614,783
1996	700,641,709	340,544,552	720,501,402	30,708,220	43,890,108	539,186	8,039,776	42,287	1,844,907,240
1997	691,324,739	341,525,447	728,808,303	30,491,553	45,828,053	489,591	7,938,320	37,836	1,846,443,842
1998	680,290,189	345,011,730	733,236,004	30,848,214	43,552,896	492,101	7,297,169	35,675	1,840,763,978
1999	675,657,877	341,967,105	764,768,020	30,979,836	42,527,363	481,012	7,063,750	24,378	1,863,469,341
2000	683,435,135	347,350,016	799,554,862	30,718,039	41,929,188	504,529	6,524,135	-	1,910,015,904
2001	700,551,762	346,870,490	833,248,286	30,792,379	42,259,836	511,684	6,159,167	-	1,960,393,604
2002	720,345,828	353,778,134	866,901,042	30,778,325	43,232,905	451,743	5,702,697	-	2,021,190,674
2003	733,029,994	365,259,010	905,860,128	30,856,995	43,601,678	443,446	5,967,608	-	2,085,018,859
2004	680,613,635	355,984,218	907,267,142	30,554,896	41,845,719	426,799	5,789,481	-	2,022,481,890
2005	737,106,007	386,746,409	957,168,520	30,376,427	42,823,968	452,681	6,051,810	-	2,160,725,822
2006	768,951,893	413,147,472	962,185,948	30,601,677	45,095,566	436,965	7,939,013	-	2,228,358,534
2007	793,913,599	443,914,279	984,671,985	30,772,692	45,264,721	442,640	8,246,281	-	2,307,226,197
2008	814,894,507	465,653,920	1,023,079,028	31,080,332	45,175,486	442,760	8,086,821	-	2,388,412,854
2009	846,288,629	490,271,067	991,617,284	30,432,902	45,053,380	433,359	8,195,164	-	2,412,291,785
2010	874,597,509	529,486,228	980,626,234	30,214,529	43,930,051	431,628	7,900,200	-	2,467,186,379

MONTANA-DAKOTA UTILITIES CO.
INTEGRATED SYSTEM SEASONAL PEAKS AND PEAK MONTH LOAD FACTORS 1/
1960 THROUGH 2010

<u>YEAR</u>	<u>SUMMER</u>			<u>WINTER</u>			<u>ANNUAL</u> <u>LOAD</u> <u>FACTOR</u>	<u>PEAK</u> <u>RATIO 3/</u>
	<u>MW</u>	<u>MONTH</u>	<u>LOAD</u> <u>FACTOR</u>	<u>MW</u>	<u>MONTH 2/</u>	<u>LOAD</u> <u>FACTOR</u>		
1960	76.7	AUG	70.7	109.3	DEC	58.8	50.9	1.425
1961	82.8	AUG	73.7	113.7	JAN	62.0	52.5	1.373
1962	83.8	AUG	76.4	123.2	JAN	65.4	53.7	1.470
1963	95.9	JUL	68.9	127.6	DEC	63.3	52.5	1.331
1964	101.8	AUG	68.2	138.2	DEC	64.2	51.8	1.358
1965	108.4	AUG	68.7	138.0	JAN	68.5	56.5	1.273
1966	114.0	JUL	70.5	149.6	JAN	65.4	58.2	1.312
1967	129.0	JUL	71.3	161.8	JAN	68.1	60.0	1.254
1968	133.3	JUL	69.9	173.5	DEC	65.1	55.0	1.302
1969	153.4	AUG	70.0	178.2	JAN	70.3	62.0	1.162
1970	160.5	JUL	70.2	186.2	DEC	67.6	59.5	1.160
1971	170.9	AUG	72.2	195.7	JAN	70.5	58.2	1.145
1972	174.5	AUG	72.6	209.1	DEC	69.4	58.5	1.198
1973	199.6	AUG	69.9	200.1	DEC	67.3	63.2	1.003
1974	210.0	JUL	71.9	222.0	JAN	66.6	62.7	1.057
1975	230.8	JUL	68.3	238.2	JAN	67.8	59.5	1.032
1976	242.6	AUG	64.8	241.3	JAN	78.1	59.7	0.995
1977	253.7	JUL	61.2	257.8	DEC	71.3	57.9	1.016
1978	257.2	SEP	59.9	268.1	JAN	79.0	62.9	1.042
1979	257.6	JUL	65.0	287.5	JAN	73.7	63.1	1.116
1980	291.2	JUL	64.4	292.0	DEC	73.4	61.7	1.003
1981	315.4	JUL	61.6	333.4	JAN	75.2	59.0	1.057
1982	322.7	AUG	60.8	293.7	DEC	74.9	59.6	0.910
1983	337.5	AUG	68.5	354.1	DEC	72.7	57.5	1.049
1984	354.6	AUG	64.3	330.6	JAN	74.3	58.3	0.932
1985	350.4	JUL	62.7	324.2	DEC	74.2	59.8	0.925
1986	338.0	JUN	57.9	293.2	DEC	73.4	59.2	0.867
1987	358.6	JUL	58.7	306.2	FEB	76.2	54.6	0.854
1988	386.7	JUN	61.6	320.9	FEB	74.1	54.2	0.830
1989	383.6	AUG	57.1	341.6	DEC	69.8	54.4	0.891
1990	381.6	JUL	55.4	330.2	DEC	70.8	53.5	0.865
1991	387.1	JUL	58.0	311.8	DEC	74.3	54.2	0.805
1992	339.1	AUG	60.9	337.5	DEC	73.1	61.4	0.995
1993	350.3	AUG	62.3	332.7	JAN	77.5	61.0	0.950
1994	369.8	AUG	61.8	322.6	DEC	74.5	59.7	0.872
1995	412.7	AUG	59.8	348.7	FEB	68.6	54.0	0.845
1996	393.3	AUG	62.6	343.1	JAN	78.4	58.3	0.872
1997	404.6	JUL	61.6	332.8	JAN	74.4	56.6	0.823
1998	402.5	AUG	63.6	354.2	DEC	70.1	56.9	0.880
1999	420.6	JUL	61.3	342.4	DEC	70.7	54.2	0.814
2000	432.3	AUG	61.3	353.9	DEC	77.4	54.9	0.819
2001	452.9	AUG	62.3	328.9	DEC	78.2	53.0	0.726
2002	458.8	JUL	64.9	343.5	JAN	78.4	53.7	0.749
2003	470.5	AUG	64.3	367.7	JAN	77.2	54.0	0.782
2004	458.4	JUL	60.4	383.4	JAN	76.7	54.9	0.836
2005	459.1	JUL	65.9	387.2	DEC	76.8	57.9	0.843
2006	485.5	JUL	68.3	397.2	NOV	69.3	56.4	0.818
2007	525.6	JUL	66.3	407.3	JAN	80.5	54.5	0.775
2008	476.6	AUG	66.9	455.0	DEC	78.1	62.2	0.955
2009	473.8	AUG	61.2	459.6	DEC	78.4	62.5	0.970
2010	502.5	AUG	64.8				61.7	

1/ MDU only net peak on combined system as calculated by MDU (excludes REC adjusted peak).

2/ January and February is of the following year.

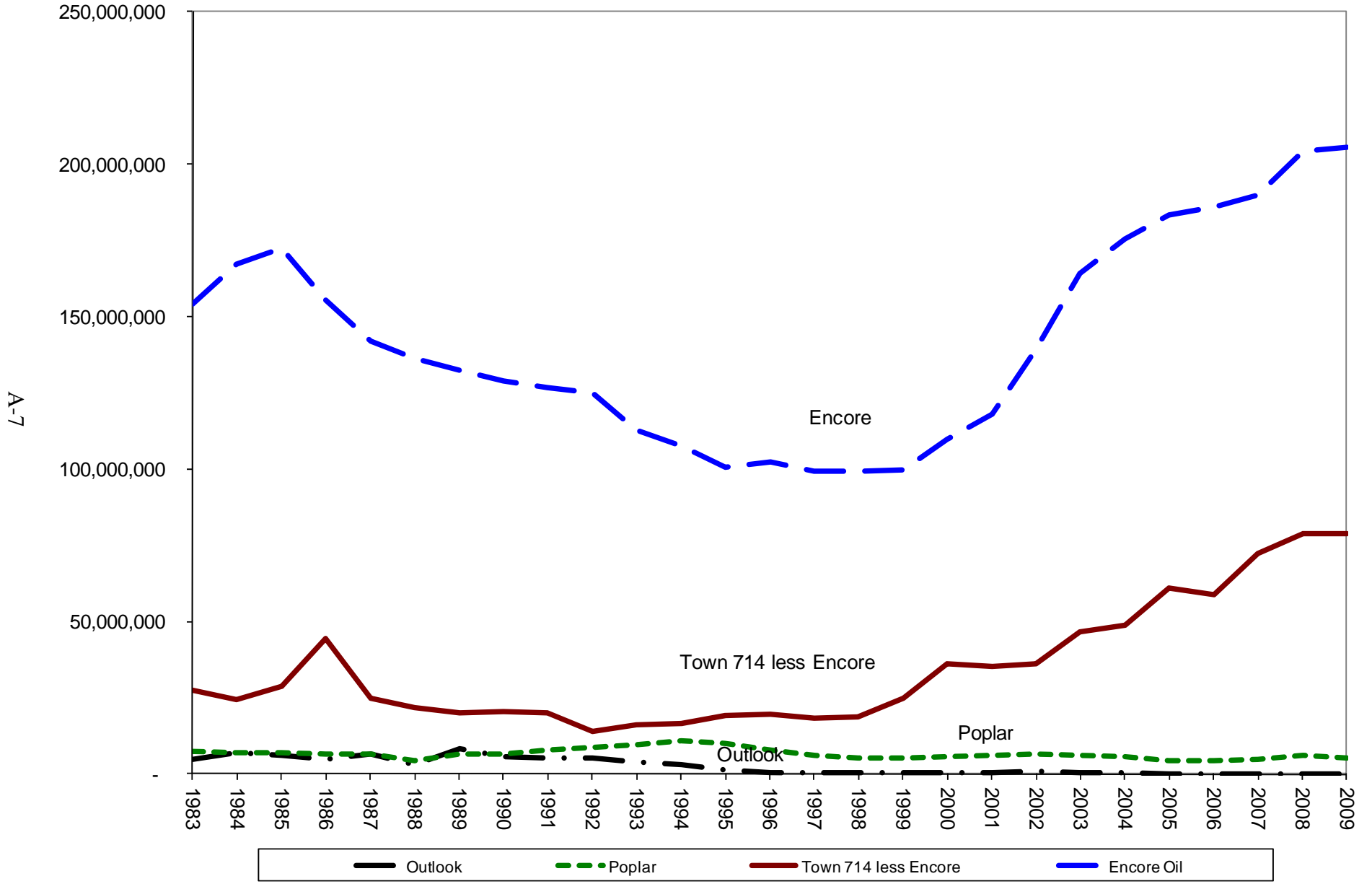
3/ Ratio of winter peak to preceding summer peak.

MONTANA-DAKOTA UTILITIES CO.
DEMAND BY STATE AT TIME OF SYSTEM SEASONAL PEAK
(MEGAWATTS)

<u>YEAR</u>	<u>SUMMER</u>				<u>WINTER</u>			
	<u>ND</u>	<u>SD</u>	<u>MT</u>	<u>INT SYS</u>	<u>ND</u>	<u>SD</u>	<u>MT</u>	<u>INT SYS</u>
1975	139.4	22.1	69.3	230.8	145.1	22.8	70.3	238.2 *
1976	147.4	24.2	71.0	242.6	147.3	24.1	69.9	241.3 *
1977	155.9	23.5	74.6	254.0	155.1	24.3	78.4	257.8
1978	165.5	20.4	70.3	256.2	165.5	23.9	78.7	268.1 *
1979	166.4	16.4	74.8	257.6	177.2	24.1	86.2	287.5 *
1980	181.5	21.5	88.2	291.2	180.8	21.8	89.4	292.0
1981	202.3	21.0	92.1	315.4	201.5	24.9	106.9	333.3 *
1982	208.0	20.8	93.9	322.7	185.0	21.1	87.6	293.7
1983	221.2	20.9	95.4	337.5	225.7	27.5	100.9	354.1
1984	234.8	23.9	96.0	354.7	209.4	23.0	98.2	330.6 *
1985	233.3	24.4	92.7	350.4	206.9	22.4	94.9	324.2
1986	224.2	22.5	91.4	338.1	196.4	21.2	75.7	293.3
1987	242.1	28.5	88.1	358.7	204.6	22.8	78.8	306.2 *
1988	265.6	28.4	92.7	386.7	212.1	23.7	85.0	320.8 *
1989	265.1	27.6	90.9	383.6	225.6	26.9	89.1	341.6
1990	261.2	26.2	94.2	381.6	218.2	24.1	87.9	330.2
1991	271.9	30.0	85.2	387.1	217.5	19.9	74.4	311.8
1992	234.4	20.9	83.7	339.0	233.4	23.9	80.1	337.4
1993	251.1	23.3	75.9	350.3	225.6	25.5	81.6	332.7 *
1994	253.7	27.9	88.2	369.8	220.9	24.5	77.2	322.6
1995	290.6	27.1	95.0	412.7	236.1	22.5	90.1	348.7 *
1996	272.0	27.1	94.1	393.2	233.6	21.3	88.2	343.1 *
1997	288.0	22.4	94.3	404.7	225.0	20.0	87.8	332.8 *
1998	285.1	25.7	91.7	402.5	248.2	21.6	84.4	354.2
1999	295.0	28.7	96.9	420.6	237.3	21.6	83.6	342.5
2000	302.9	30.1	99.3	432.3	234.7	22.8	96.4	353.9
2001	317.8	29.8	105.4	453.0	235.0	14.3	79.6	328.9
2002	326.0	26.4	106.4	458.8	242.9	14.4	86.2	343.5 *
2003	328.4	28.4	113.7	470.5	251.4	19.4	96.9	367.7 *
2004	320.2	28.4	109.8	458.4	258.8	21.9	102.7	383.4 *
2005	311.6	27.7	119.8	459.1	265.0	21.8	100.4	387.2
2006	346.3	29.0	110.1	485.4	272.0	23.8	101.4	397.2
2007	365.8	31.6	128.3	525.7	293.0	25.3	89.0	407.3 *
2008	330.1	27.6	118.9	476.6	309.1	30.3	115.6	455.0
2009	337.0	27.7	109.0	473.7	313.3	28.8	117.5	459.6
2010	357.7	28.4	116.4	502.5				

* WINTER PEAK IS IN THE FOLLOWING YEAR.

Montana Oil Fields



BILLING CYCLE ALLOCATION FACTORS BY STATE

NORTH DAKOTA

<u>SALES</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
Residential	0.108123	0.091596	0.087194	0.076379	0.066587	0.068664	0.086975	0.097492	0.081839	0.069305	0.073972	0.091874
Small C&I	0.095369	0.086208	0.084683	0.076526	0.072688	0.075517	0.086998	0.093578	0.086436	0.075930	0.078014	0.088054
Large C&I	0.088331	0.081291	0.080502	0.079236	0.076542	0.081257	0.089804	0.091900	0.088597	0.082981	0.077824	0.081736
Street Lighting	0.094126	0.087321	0.085204	0.081828	0.078858	0.077064	0.075926	0.078538	0.080403	0.083734	0.086342	0.090654
Other Public Sales	0.083893	0.076975	0.081801	0.070908	0.077074	0.086762	0.100960	0.105077	0.093208	0.076584	0.069717	0.077042
Interdepartmental	0.105434	0.091675	0.091352	0.086049	0.078460	0.074161	0.074298	0.074085	0.073608	0.076797	0.080479	0.093603
Company Use	0.089496	0.081587	0.078882	0.079693	0.077389	0.086279	0.089717	0.096883	0.083265	0.073273	0.084581	0.078955
Tesoro Refinery	0.083294	0.068210	0.082224	0.082311	0.076628	0.092035	0.092120	0.091140	0.091522	0.084880	0.076832	0.078803
Westmoreland Coal	0.108593	0.098123	0.090934	0.088438	0.074287	0.075604	0.066687	0.067942	0.071703	0.080090	0.083982	0.093616
<u>CUSTOMERS</u>												
Residential	0.997186	0.997381	0.997646	0.997676	0.998543	0.999921	1.000572	1.001380	1.001701	1.002340	1.002836	1.002818
Small C&I	0.987068	0.986061	0.986534	0.993230	1.002435	1.007832	1.008528	1.011021	1.009806	1.003829	1.001522	1.002134
Large C&I	0.991181	0.994440	0.996070	1.000144	1.001876	1.001061	1.001876	1.001876	1.001876	1.004015	1.003200	1.002385
Street Lighting	1.005820	1.005031	1.003453	1.006018	1.007201	1.009964	0.984512	0.989050	0.991615	0.996153	0.998323	1.002861
Other Public Sales	0.994747	0.994619	0.995905	1.001308	1.008254	1.008254	1.007740	1.006325	1.003623	0.998349	0.992561	0.988316
PEAK DEMAND	0.7035	0.6945	0.6914	0.6822	0.7068	0.6837	0.6843	0.7114	0.7093	0.6894	0.6804	0.6817

SOUTH DAKOTA

<u>SALES</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
Residential	0.109726	0.093712	0.090441	0.079610	0.068068	0.067572	0.083598	0.094819	0.079803	0.067459	0.074140	0.091050
Small C&I	0.096920	0.086273	0.084244	0.076310	0.069828	0.073122	0.086648	0.099097	0.087796	0.074836	0.076348	0.088578
Large C&I	0.088167	0.079761	0.081173	0.077601	0.077693	0.077044	0.081723	0.092375	0.087389	0.086999	0.083257	0.086816
Street Lighting	0.084475	0.083182	0.083840	0.083455	0.083223	0.083316	0.082956	0.082997	0.083092	0.083615	0.083180	0.082668
Other Public Sales	0.086260	0.074071	0.077314	0.075924	0.074297	0.090530	0.103547	0.110358	0.086534	0.081666	0.069011	0.070489
Interdepartmental	0.146712	0.118070	0.105517	0.071920	0.057483	0.050602	0.049216	0.052852	0.058159	0.064814	0.097370	0.127286
Company Use	0.165423	0.161978	0.144045	0.096179	0.053623	0.060271	0.020500	0.047311	0.041929	0.038332	0.062601	0.107809
<u>CUSTOMERS</u>												
Residential	0.996398	0.995902	0.995754	0.996958	1.000107	1.002536	1.006604	1.005970	1.004575	1.001892	0.998036	0.995268
Small C&I	0.977016	0.975329	0.976976	0.991714	1.013038	1.022395	1.022997	1.021311	1.016492	0.999746	0.992035	0.990951
Large C&I	0.993735	0.994824	0.993735	0.993735	0.997004	1.000272	1.000272	1.000272	1.005721	1.006810	1.006810	1.006810
Street Lighting	0.998213	1.006011	1.009911	1.011860	1.013810	1.015760	0.990414	0.992364	0.992364	0.990414	0.988465	0.990414
Other Public Sales	0.946650	0.943616	0.946650	0.984576	1.061947	1.080152	1.083186	1.064981	1.039191	0.969406	0.943616	0.936030
PEAK DEMAND	0.0659	0.0626	0.0626	0.0650	0.0483	0.0574	0.0558	0.0585	0.0489	0.0577	0.0594	0.0627

MONTANA

<u>SALES</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
Residential	0.106373	0.090076	0.084796	0.075103	0.066735	0.069009	0.087200	0.104916	0.085735	0.069175	0.072699	0.088183
Small C&I	0.092747	0.085881	0.083959	0.077232	0.073425	0.073848	0.089296	0.100698	0.088288	0.076059	0.074413	0.084155
Large C&I	0.095396	0.082413	0.080257	0.081912	0.094399	0.055085	0.082552	0.081914	0.082505	0.086865	0.078475	0.098227
Street Lighting	0.087047	0.086012	0.083727	0.082182	0.083110	0.082033	0.081272	0.082264	0.082338	0.082980	0.083343	0.083691
Other Public Sales	0.078717	0.071547	0.066581	0.068626	0.072902	0.088585	0.109005	0.124506	0.103690	0.079724	0.066955	0.069162
Interdepartmental	0.109861	0.093370	0.091627	0.083319	0.075733	0.072846	0.072761	0.079093	0.075347	0.074012	0.078610	0.093422
Company Use	0.105329	0.112613	0.095084	0.082859	0.081275	0.063635	0.077445	0.087479	0.074234	0.064838	0.069093	0.086116
Oil Fields	0.090565	0.077301	0.084878	0.081655	0.079387	0.079835	0.082318	0.081721	0.083243	0.086487	0.083690	0.088919
Westmoreland Coal	0.1176	0.1095	0.1039	0.0909	0.0789	0.0656	0.0612	0.0586	0.0579	0.0680	0.0807	0.1073
<u>CUSTOMERS</u>												
Residential	1.001528	1.001367	1.000578	0.997531	0.997803	0.998297	0.999049	0.999451	0.999769	1.000562	1.001919	1.002145
Small C&I	0.983443	0.983221	0.984207	0.993559	1.006569	1.012406	1.014632	1.015857	1.013010	1.002211	0.996708	0.994179
Large C&I	0.980632	0.982379	0.984127	0.990826	1.005388	1.013834	1.018494	1.019659	1.013543	1.002767	0.996068	0.992282
Street Lighting	1.065028	1.050450	1.035873	1.035873	1.034157	1.031585	0.953552	0.956982	0.957839	0.957839	0.958697	0.962127
Other Public Sales	0.969006	0.965403	0.973508	0.996023	1.027542	1.032946	1.034747	1.032045	1.012233	0.996023	0.985216	0.975310
PEAK DEMAND	0.2306	0.2429	0.2460	0.2528	0.2449	0.2589	0.2599	0.2301	0.2418	0.2529	0.2602	0.2556

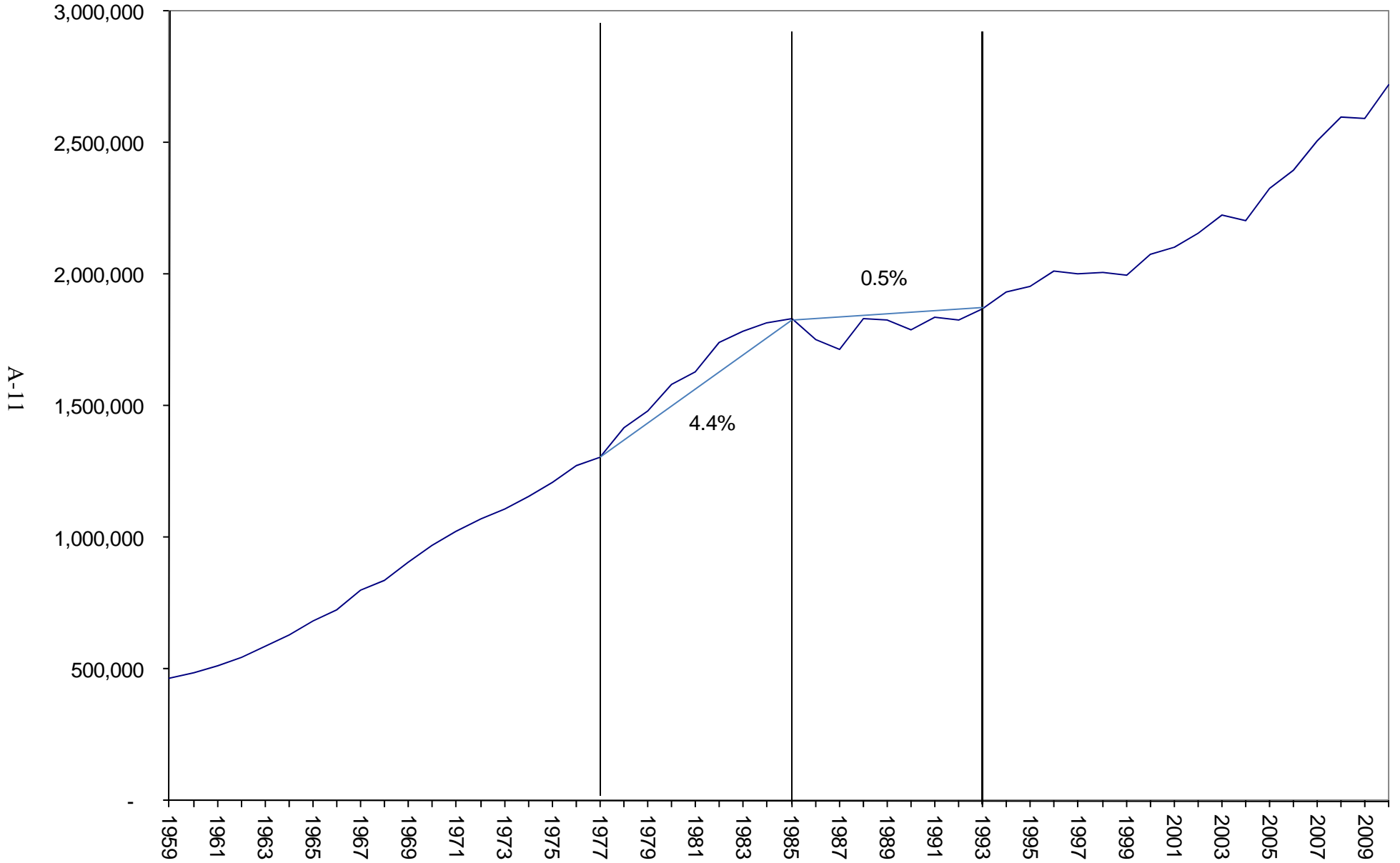
BILLING-MONTH TO CALENDAR-MONTH APPORTIONMENT FACTORS

<u>Residential</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
North Dakota	49.9%	47.7%	48.6%	49.1%	48.9%	50.8%	45.6%	50.5%	49.3%	49.2%	47.9%	50.6%
South Dakota	52.0%	51.6%	52.1%	54.0%	52.6%	55.1%	50.2%	54.0%	50.9%	52.6%	51.0%	53.4%
Montana	54.2%	52.8%	53.2%	54.3%	53.2%	56.2%	50.1%	56.1%	52.6%	54.0%	52.0%	54.8%
<u>Small Commercial & Industrial</u>												
North Dakota	48.2%	45.9%	44.2%	47.3%	47.2%	49.8%	44.8%	47.5%	46.9%	47.0%	47.4%	50.4%
South Dakota	52.7%	51.3%	53.4%	52.9%	51.8%	53.5%	49.0%	54.3%	48.9%	53.5%	51.9%	55.2%
Montana	51.3%	49.7%	50.0%	51.0%	48.3%	54.8%	47.8%	52.0%	48.8%	50.7%	48.8%	50.9%
<u>Large Commercial & Industrial</u>												
North Dakota	46.1%	42.9%	43.5%	43.0%	45.1%	46.2%	42.6%	44.0%	44.0%	44.0%	44.3%	47.6%
South Dakota	59.5%	54.2%	62.8%	62.6%	58.7%	64.5%	56.8%	63.4%	51.8%	63.2%	56.7%	59.5%
Montana	37.4%	30.8%	29.9%	27.6%	26.5%	23.5%	29.5%	29.8%	28.5%	28.2%	30.8%	35.5%
<u>Street Lighting</u>												
North Dakota	41.7%	40.2%	37.8%	39.2%	39.0%	41.3%	37.8%	38.7%	39.1%	38.8%	40.2%	42.9%
South Dakota	44.7%	46.1%	42.5%	44.5%	45.1%	46.2%	44.0%	43.9%	45.3%	44.1%	46.5%	47.6%
Montana	45.1%	45.7%	39.4%	42.5%	41.4%	45.0%	41.2%	40.4%	43.1%	41.2%	45.0%	45.1%
<u>Other Public Sales</u>												
North Dakota	46.1%	44.6%	42.6%	44.6%	43.6%	45.4%	43.0%	44.3%	44.7%	43.7%	46.2%	48.0%
South Dakota	64.8%	51.7%	71.8%	68.2%	60.9%	64.3%	58.7%	67.0%	49.2%	71.7%	53.4%	62.8%
Montana	52.3%	47.2%	53.1%	51.3%	49.6%	51.6%	45.5%	51.3%	46.4%	52.3%	51.1%	52.0%
<u>Interdepartmental</u>												
North Dakota	53.0%	49.1%	52.1%	51.2%	51.2%	52.8%	47.4%	52.4%	50.4%	51.6%	50.6%	51.5%
South Dakota	14.8%	14.0%	11.7%	12.4%	21.4%	14.9%	13.7%	12.6%	14.2%	14.2%	28.9%	14.1%
Montana	46.4%	42.7%	46.0%	47.6%	46.3%	48.1%	43.2%	50.9%	43.3%	47.7%	41.6%	43.4%
<u>Company Use</u>												
North Dakota	42.0%	39.1%	36.2%	36.5%	37.3%	38.9%	35.8%	36.1%	37.6%	37.5%	40.5%	42.7%
South Dakota	67.5%	71.9%	66.2%	68.9%	68.2%	68.9%	67.6%	67.4%	69.3%	67.5%	71.4%	71.2%
Montana	58.4%	59.1%	57.6%	61.6%	56.9%	58.8%	54.8%	57.3%	55.9%	57.3%	58.3%	61.5%

**Integrated System
Historical Energy Requirements**

<u>Year</u>	<u>Total Energy Requirements MWh</u>	<u>% Inc/Dec</u>
1959	463,307	
1960	488,316	5.40%
1961	514,086	5.28%
1962	545,306	6.07%
1963	586,589	7.57%
1964	628,616	7.16%
1965	682,214	8.53%
1966	725,389	6.33%
1967	798,855	10.13%
1968	837,504	4.84%
1969	908,231	8.44%
1970	970,490	6.85%
1971	1,021,876	5.29%
1972	1,073,560	5.06%
1973	1,107,691	3.18%
1974	1,155,351	4.30%
1975	1,210,168	4.74%
1976	1,274,391	5.31%
1977	1,307,542	2.60%
1978	1,418,366	8.48%
1979	1,481,019	4.42%
1980	1,581,612	6.79%
1981	1,629,323	3.02%
1982	1,740,859	6.85%
1983	1,783,753	2.46%
1984	1,815,453	1.78%
1985	1,834,294	1.04%
1986	1,751,503	-4.51%
1987	1,716,377	-2.01%
1988	1,834,232	6.87%
1989	1,828,665	-0.30%
1990	1,788,854	-2.18%
1991	1,836,243	2.65%
1992	1,827,866	-0.46%
1993	1,870,268	2.32%
1994	1,934,561	3.44%
1995	1,952,872	0.95%
1996	2,014,830	3.17%
1997	2,005,195	-0.48%
1998	2,007,534	0.12%
1999	1,996,647	-0.54%
2000	2,077,579	4.05%
2001	2,104,119	1.28%
2002	2,158,431	2.58%
2003	2,226,531	3.16%
2004	2,204,012	-1.01%
2005	2,327,117	5.59%
2006	2,397,793	3.04%
2007	2,510,540	4.70%
2008	2,596,990	3.44%
2009	2,593,368	-0.14%
2010	2,718,192	4.81%

Total Energy Requirements



APPENDIX B

Integrated System Historical and Forecasted Exogenous Variables

**Integrated System Electricity Prices
Historical and Forecasted Prices
cents/kWh**

<u>Year</u>	<u>Residential Price</u>	<u>Small C&I Price</u>	<u>Large C&I Price</u>
1967	2.760	3.739	1.616
1968	2.734	3.690	1.524
1969	2.697	3.599	1.463
1970	2.674	3.516	1.462
1971	2.660	3.484	1.448
1972	2.637	3.506	1.430
1973	2.684	3.558	1.444
1974	2.797	3.721	1.724
1975	2.916	3.792	1.857
1976	3.504	4.402	2.322
1977	3.900	4.586	2.530
1978	4.231	4.701	2.660
1979	4.358	4.749	2.729
1980	4.447	4.767	2.773
1981	5.589	5.732	3.786
1982	6.664	6.169	4.709
1983	6.671	6.288	4.750
1984	6.966	6.610	5.133
1985	7.135	6.624	5.102
1986	7.208	6.686	5.160
1987	7.430	7.231	5.444
1988	7.331	7.410	5.495
1989	7.245	7.397	5.449
1990	7.253	7.395	5.412
1991	7.255	7.445	5.403
1992	7.267	7.470	5.360
1993	7.231	7.436	5.314
1994	7.234	7.384	5.258
1995	7.125	7.305	5.238
1996	7.078	7.246	5.219
1997	7.156	7.336	5.292
1998	7.187	7.348	5.277
1999	7.155	7.310	5.181
2000	7.073	7.222	5.082
2001	7.136	7.312	5.176
2002	7.062	7.242	5.146
2003	7.107	7.268	5.159
2004	7.387	7.372	5.276
2005	7.250	7.190	5.193
2006	7.500	7.351	5.396
2007	7.879	7.672	5.701
2008	8.105	8.030	5.966
2009	7.526	7.488	5.751
2010	8.026	6.474	6.628
2011	8.348	6.772	7.073
2012	8.730	7.112	7.388
2013	9.057	7.381	7.627
2014	9.233	7.493	7.672
2015	9.465	7.680	7.859
2016	9.699	7.873	8.062
2017	9.940	8.069	8.260
2018	10.192	8.270	8.463
2019	10.444	8.479	8.677
2020	10.754	8.737	8.941
2021	11.073	9.003	9.213
2022	11.402	9.277	9.493
2023	11.741	9.559	9.781
2024	12.090	9.850	10.078
2025	12.449	10.150	10.384
2026	12.819	10.459	10.699
2027	13.200	10.777	11.024
2028	13.592	11.105	11.359
2029	13.996	11.443	11.704
2030	14.412	11.791	12.060

SOURCES:

1967-2009: Historical prices calculated from Montana-Dakota Utilities Co.,
Electric Operating Revenues Reports

2010-2030: Forecasted prices

**Integrated System
Historical and Forecasted Prices
\$/Dk**

<u>Year</u>	<u>Residential Price</u>	<u>Firm Price</u>
1979	\$2.460	\$2.140
1980	3.170	2.740
1981	3.560	3.100
1982	3.950	3.560
1983	5.070	4.700
1984	6.090	5.790
1985	5.160	4.870
1986	4.650	4.670
1987	5.290	4.890
1988	4.870	4.520
1989	4.400	4.060
1990	4.460	4.070
1991	4.570	4.200
1992	4.840	4.460
1993	5.050	4.690
1994	4.860	4.430
1995	4.380	3.910
1996	4.130	3.710
1997	4.540	4.090
1998	4.850	4.300
1999	5.080	4.540
2000	5.920	5.390
2001	7.420	6.870
2002	4.570	4.030
2003	6.830	6.290
2004	8.560	7.970
2005	10.490	9.840
2006	9.870	9.150
2007	7.780	7.090
2008	9.420	8.770
2009	7.820	7.190
2010	8.975	8.321
2011	9.825	9.167
2012	10.016	9.356
2013	10.194	9.528
2014	10.421	9.755
2015	10.534	9.868
2016	10.605	9.939
2017	10.721	10.055
2018	10.794	10.128
2019	10.912	10.246
2020	11.191	10.524
2021	11.478	10.809
2022	11.772	11.102
2023	12.073	11.403
2024	12.382	11.712
2025	12.699	12.029
2026	13.024	12.355
2027	13.358	12.690
2028	13.700	13.034
2029	14.051	13.387
2030	14.411	13.750

SOURCES:
1979-2009: CSBEPFL Rate Reporting Class Report
Gas Year-to-Date Report for Year-end
2010-2030: Forecasted prices

**Bismarck, North Dakota
Heating Degree Days (HDD)
and
Cooling Degree Days (CDD)
(Annual)**

	<u>HDD</u>	<u>CDD</u>
1970	9,481	545
1971	9,280	423
1972	9,560	461
1973	8,516	411
1974	9,194	409
1975	9,039	433
1976	8,434	663
1977	8,636	367
1978	9,595	475
1979	9,998	365
1980	8,352	502
1981	7,685	441
1982	9,761	394
1983	8,706	658
1984	8,830	501
1985	9,590	297
1986	8,154	374
1987	7,314	532
1988	8,525	860
1989	9,086	672
1990	8,061	611
1991	8,052	709
1992	8,162	255
1993	9,144	217
1994	8,866	432
1995	9,027	522
1996	10,027	480
1997	8,450	609
1998	7,765	633
1999	7,710	457
2000	8,412	549
2001	8,039	668
2002	8,532	745
2003	8,493	737
2004	8,183	379
2005	7,792	555
2006	7,525	793
2007	8,345	666
2008	8,946	524
2009	9,108	331
NORMAL	8,802	471

**Personal Income per Household
Integrated System**

<u>Year</u>	<u>2004 \$s</u>
1969	44,573
1970	44,768
1971	46,072
1972	53,353
1973	67,714
1974	59,725
1975	56,437
1976	50,843
1977	49,926
1978	56,109
1979	54,155
1980	49,646
1981	58,679
1982	57,289
1983	55,901
1984	56,327
1985	53,055
1986	53,660
1987	53,058
1988	48,035
1989	51,650
1990	53,263
1991	52,982
1992	56,283
1993	57,387
1994	56,643
1995	55,762
1996	58,957
1997	57,437
1998	62,020
1999	61,901
2000	64,276
2001	65,982
2002	63,549
2003	69,610
2004	70,634
2005	73,449
2006	71,690
2007	78,772
2008	82,143
2009	82,137
2010	81,464
2011	82,057
2012	82,804
2013	83,645
2014	84,567
2015	85,549
2016	86,591
2017	87,691
2018	88,840
2019	90,039
2020	91,280
2021	92,564
2022	93,895
2023	95,273
2024	96,699
2025	98,177
2026	99,702
2027	101,277
2028	102,895
2029	104,558
2030	106,272

SOURCES:

Total Personal Income: 1969-2007 U.S. Dept. of Commerce
Households: 1970, 1980, 1985, 1990, 2000 U.S. Dept. of Commerce
All other data Woods & Poole Economics

Personal Consumption Expenditure Deflator

<u>Year</u>	<u>Personal Consumption Expenditure Deflator (2004=100)</u>	<u>Inflation Rate</u>
1969	23.30	--
1970	24.40	4.7%
1971	25.44	4.3%
1972	26.32	3.5%
1973	27.75	5.4%
1974	30.62	10.3%
1975	33.17	8.3%
1976	35.01	5.5%
1977	37.28	6.5%
1978	39.90	7.0%
1979	43.42	8.8%
1980	48.05	10.7%
1981	52.33	8.9%
1982	55.22	5.5%
1983	57.60	4.3%
1984	59.78	3.8%
1985	61.75	3.3%
1986	63.26	2.4%
1987	65.45	3.5%
1988	68.04	4.0%
1989	71.01	4.4%
1990	74.27	4.6%
1991	76.96	3.6%
1992	79.18	2.9%
1993	81.01	2.3%
1994	82.71	2.1%
1995	84.49	2.2%
1996	86.30	2.1%
1997	87.76	1.7%
1998	88.55	0.9%
1999	90.02	1.7%
2000	92.26	2.5%
2001	94.19	2.1%
2002	95.53	1.4%
2003	97.42	2.0%
2004	100.00	2.6%
2005	102.94	2.9%
2006	105.80	2.8%
2007	108.55	2.6%
2008	112.18	3.3%
2009	114.55	2.1%
2010	117.42	2.5%
2011	120.96	3.0%
2012	124.72	3.1%
2013	128.66	3.2%
2014	132.79	3.2%
2015	137.12	3.3%
2016	141.66	3.3%
2017	146.42	3.4%
2018	151.41	3.4%
2019	156.65	3.5%
2020	162.15	3.5%
2021	167.92	3.6%
2022	173.98	3.6%
2023	180.35	3.7%
2024	187.04	3.7%
2025	194.08	3.8%
2026	201.39	3.8%
2027	209.00	3.8%
2028	216.93	3.8%
2029	225.17	3.8%
2030	233.75	3.8%

SOURCES:
 1969-2008 U.S. Department of Commerce
 2009-2030 Woods & Poole Economics, Inc.

**Integrated System
Residential Sector
Households and Customers**

<u>Year</u>	<u>Number of Households</u>	<u>Growth Rate</u>	<u>Average Customers</u>	<u>Growth Rate</u>	<u>Adjusted Customers</u>	<u>Growth Rate</u>
1971	91,246		61,781			
1972	92,956	1.87%	62,857	1.74%		
1973	94,768	1.95%	64,131	2.03%		
1974	96,439	1.76%	65,760	2.54%		
1975	99,759	3.44%	67,700	2.95%		
1976	103,434	3.68%	70,269	3.79%		
1977	105,549	2.04%	72,854	3.68%		
1978	106,886	1.27%	75,276	3.32%		
1979	110,044	2.95%	77,814	3.37%		
1980	113,293	2.95%	80,419	3.35%		
1981	116,881	3.17%	83,073	3.30%		
1982	120,678	3.25%	85,712	3.18%		
1983	122,290	1.34%	86,732	1.19%		
1984	123,126	0.68%	87,126	0.45%		
1985	122,774	-0.29%	86,510	-0.71%		
1986	120,544	-1.82%	85,316	-1.38%		
1987	117,963	-2.14%	84,070	-1.46%		
1988	116,944	-0.86%	83,497	-0.68%		
1989	115,536	-1.20%	82,720	-0.93%		
1990	113,499	-1.76%	82,260	-0.56%		
1991	113,134	-0.32%	82,555	0.36%		
1992	113,546	0.36%	82,730	0.21%		
1993	113,382	-0.14%	83,038	0.37%		
1994	113,640	0.23%	83,242	0.25%		
1995	114,053	0.36%	83,639	0.48%		
1996	115,737	1.48%	84,153	0.61%		
1997	115,959	0.19%	84,510	0.42%		
1998	116,370	0.35%	84,833	0.38%		
1999	116,447	0.07%	84,935 */	0.12%		
2000	116,853	0.35%	84,914	-0.02%		
2001	115,898	-0.82%	84,866	-0.06%		
2002	115,362	-0.46%	85,012	0.17%		
2003	115,202	-0.14%	85,278	0.31%		
2004	115,326	0.11%	85,498	0.26%		
2005	115,646	0.28%	85,791	0.34%		
2006	116,040	0.34%	86,150	0.42%		
2007	117,170	0.97%	86,575	0.49%		
2008	118,225	0.90%	87,262	0.79%		
2009	119,238	0.86%	87,887	0.72%	Actual 2010 Customers:	
					88,944	
2010	120,224	0.83%	88,310	0.48%		
2011	121,205	0.82%	88,730	0.48%	90,155	1.36%
2012	122,167	0.79%	89,140	0.46%	90,565	0.45%
2013	123,121	0.78%	89,546	0.46%	90,971	0.45%
2014	124,051	0.76%	89,940	0.44%	91,365	0.43%
2015	124,965	0.74%	90,326	0.43%	91,751	0.42%
2016	125,854	0.71%	90,700	0.41%	92,125	0.41%
2017	126,715	0.68%	91,062	0.40%	92,487	0.39%
2018	127,554	0.66%	91,413	0.39%	92,838	0.38%
2019	128,369	0.64%	91,754	0.37%	93,179	0.37%
2020	129,169	0.62%	92,087	0.36%	93,512	0.36%
2021	129,954	0.61%	92,413	0.35%	93,838	0.35%
2022	130,715	0.59%	92,729	0.34%	94,154	0.34%
2023	131,453	0.56%	93,034	0.33%	94,459	0.32%
2024	132,168	0.54%	93,329	0.32%	94,754	0.31%
2025	132,853	0.52%	93,611	0.30%	95,036	0.30%
2026	133,516	0.50%	93,883	0.29%	95,308	0.29%
2027	134,153	0.48%	94,144	0.28%	95,569	0.27%
2028	134,773	0.46%	94,398	0.27%	95,823	0.27%
2029	135,375	0.45%	94,643	0.26%	96,068	0.26%
2030	135,951	0.43%	94,878	0.25%	96,303	0.24%

*/ Actual customer numbers for 1999 are unavailable due to the installation of a new CIS.
This number is an estimate.

SOURCES:

Households

1970, 1980, 1985, 1990, 2000: U.S. Department of Commerce

All other years: Estimated and projected by Woods & Poole

Customers

1971-2009: Actuals from Montana-Dakota Utilities Co. Electric Operating Revenues Reports

2010-2029: Montana-Dakota forecast

Gross Domestic Product Deflator

<u>Year</u>	<u>GDP Deflator (2005=100)</u>	<u>Inflation Rate</u>
1969	23.1	--
1970	24.3	5.2%
1971	25.5	4.9%
1972	26.6	4.3%
1973	28.1	5.6%
1974	30.7	9.3%
1975	33.6	9.4%
1976	35.5	5.7%
1977	37.8	6.5%
1978	40.4	6.9%
1979	43.8	8.4%
1980	47.8	9.1%
1981	52.3	9.4%
1982	55.5	6.1%
1983	57.7	4.0%
1984	59.8	3.6%
1985	61.6	3.0%
1986	63.0	2.3%
1987	64.8	2.9%
1988	67.0	3.4%
1989	69.5	3.7%
1990	72.2	3.9%
1991	74.8	3.6%
1992	76.5	2.3%
1993	78.2	2.2%
1994	79.9	2.2%
1995	81.5	2.0%
1996	83.1	2.0%
1997	84.6	1.8%
1998	85.5	1.1%
1999	86.8	1.5%
2000	88.6	2.1%
2001	90.7	2.4%
2002	92.1	1.5%
2003	94.1	2.2%
2004	96.8	2.9%
2005	100.0	3.3%
2006	103.3	3.3%
2007	106.2	2.8%
2008	108.5	2.2%
2009	109.7	1.1%
2010	110.9	1.1%
2011	112.6	1.5%
2012	114.4	1.6%
2013	116.6	1.9%
2014	118.9	2.0%
2015	121.2	1.9%
2016	123.2	1.7%
2017	125.3	1.7%
2018	127.4	1.7%
2019	129.5	1.6%
2020	131.7	1.7%
2021	133.9	1.7%
2022	136.1	1.6%
2023	138.4	1.7%
2024	140.7	1.7%
2025	143.0	1.6%
2026	145.4	1.7%
2027	147.8	1.7%
2028	150.3	1.7%
2029	152.8	1.7%
2030	155.4	1.7%

SOURCES:

1969-2009 Actuals - U.S. Department of Commerce
 2010-2015 GDP forecasted by The Conference Board
 2016-2030 Estimates based on the 2010-2015 average yearly
 growth in GDP forecasted by The Conference Board.

**Integrated System
Employment Data
Total Employment less Farming and Mining Employment**

<u>Year</u>	<u>Number of Employees</u>	<u>Growth Rate</u>
1969	92,612	
1970	93,832	1.32%
1971	93,976	0.15%
1972	96,896	3.11%
1973	102,084	5.35%
1974	105,921	3.76%
1975	110,200	4.04%
1976	115,072	4.42%
1977	119,054	3.46%
1978	126,312	6.10%
1979	132,662	5.03%
1980	137,845	3.91%
1981	142,408	3.31%
1982	146,976	3.21%
1983	146,561	-0.28%
1984	143,903	-1.81%
1985	139,654	-2.95%
1986	134,754	-3.51%
1987	134,005	-0.56%
1988	134,529	0.39%
1989	136,577	1.52%
1990	138,750	1.59%
1991	141,411	1.92%
1992	142,376	0.68%
1993	145,885	2.46%
1994	153,125	4.96%
1995	153,191	0.04%
1996	155,382	1.43%
1997	157,543	1.39%
1998	161,164	2.30%
1999	163,013	1.15%
2000	165,326	1.42%
2001	164,977	-0.21%
2002	166,694	1.04%
2003	167,677	0.59%
2004	171,983	2.57%
2005	175,548	2.07%
2006	178,557	1.71%
2007	181,450	1.62%
2008	185,173	2.05%
2009	186,147	0.53%
2010	189,872	2.00%
2011	191,802	1.02%
2012	193,717	1.00%
2013	195,674	1.01%
2014	197,655	1.01%
2015	199,588	0.98%
2016	201,581	1.00%
2017	203,584	0.99%
2018	205,591	0.99%
2019	207,617	0.99%
2020	209,656	0.98%
2021	211,708	0.98%
2022	213,769	0.97%
2023	215,836	0.97%
2024	217,931	0.97%
2025	220,049	0.97%
2026	222,144	0.95%
2027	224,289	0.97%
2028	226,436	0.96%
2029	228,617	0.96%
2030	230,826	0.97%

SOURCES:

Number of Employees

1969-2007: U.S. Department of Commerce

2008-2030: Woods & Poole Economics Inc.

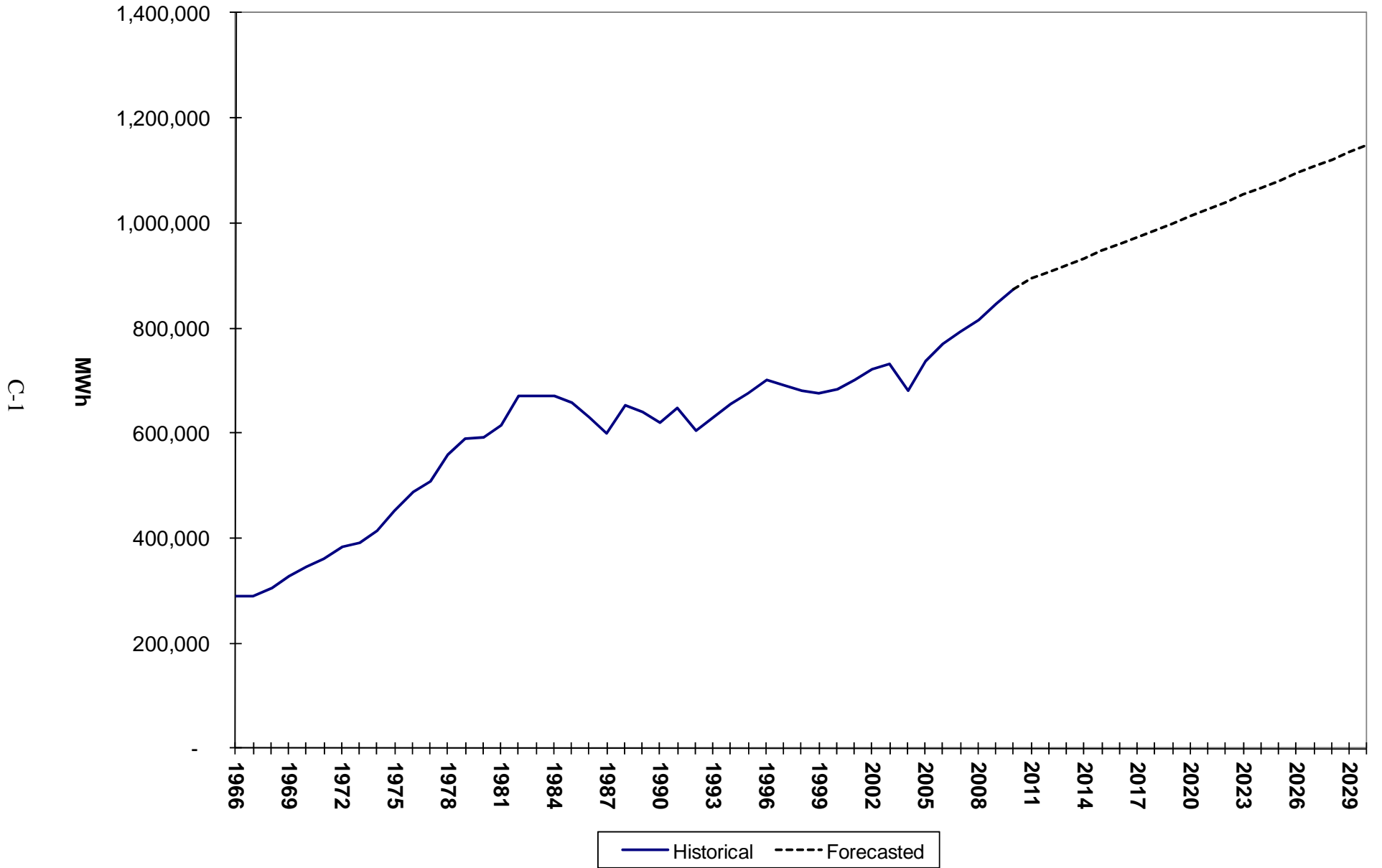
NOTE: The number of employees used for the forecast is the total employment less farming employment and mining employment (most farms are not served by Montana-Dakota and the mining sector is forecasted separately (oil fields and coal mining)).

APPENDIX C

Integrated System Forecast Results

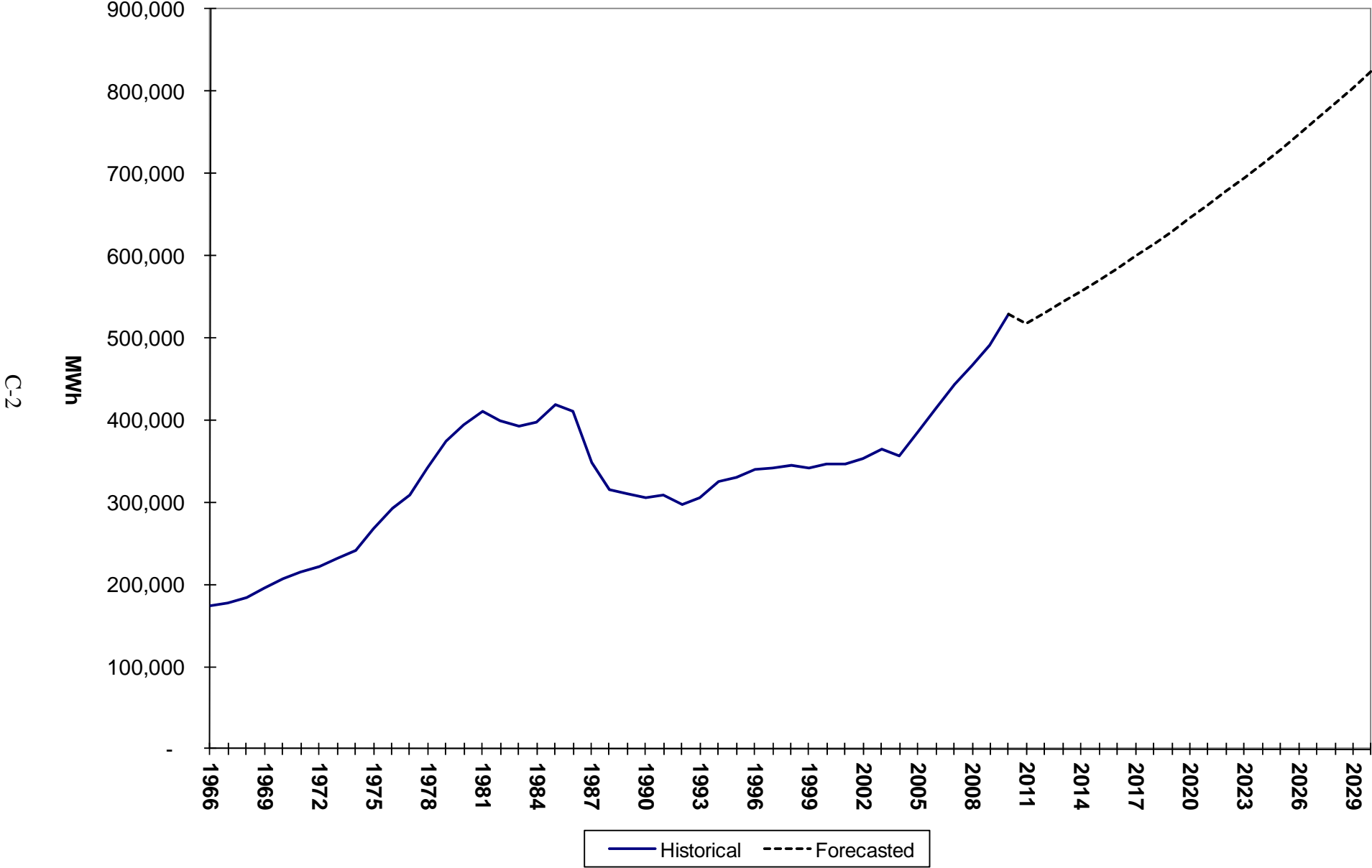
Montana-Dakota Integrated System

Historical and Forecasted Residential Sales



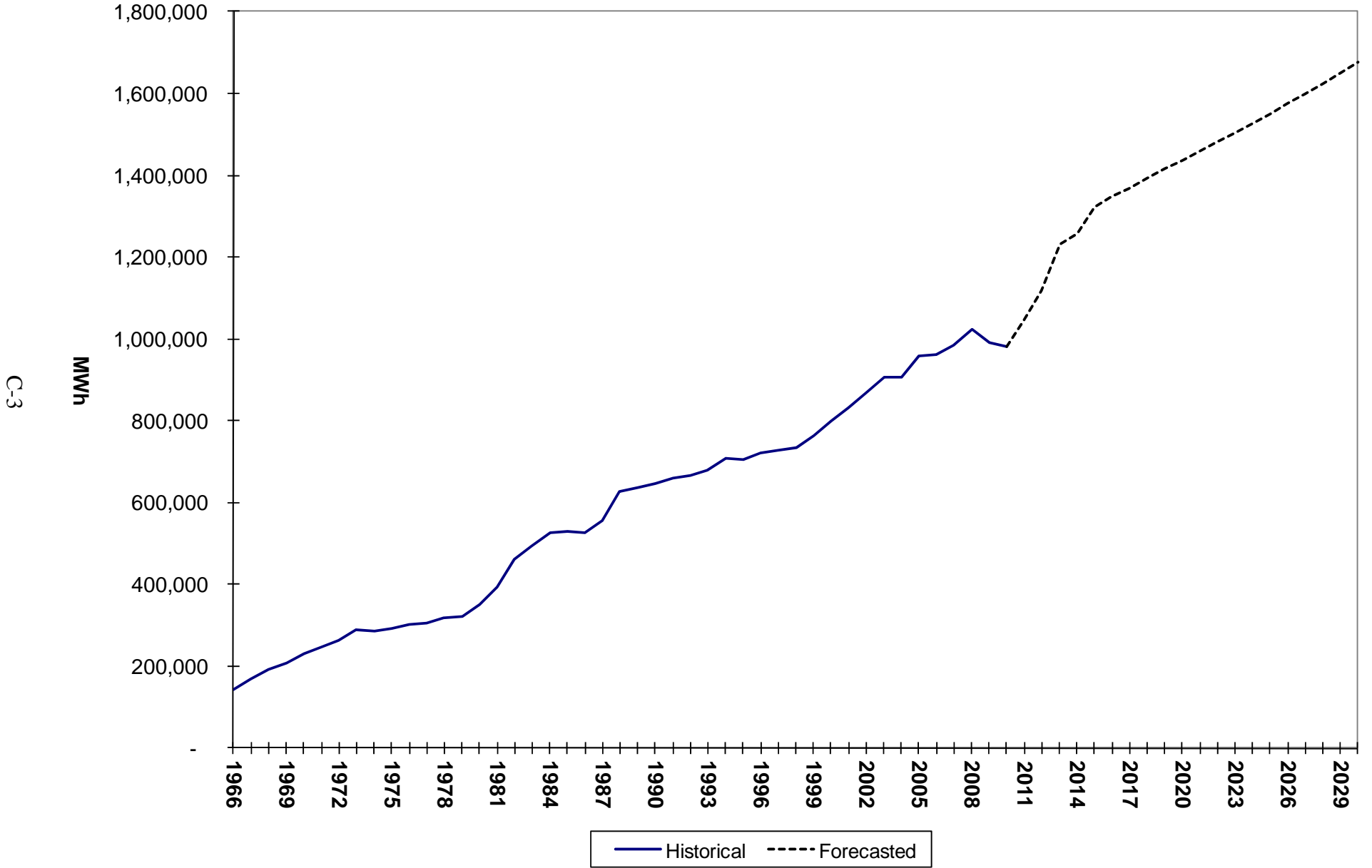
Montana-Dakota Integrated System

Historical and Forecasted SC&I Sales



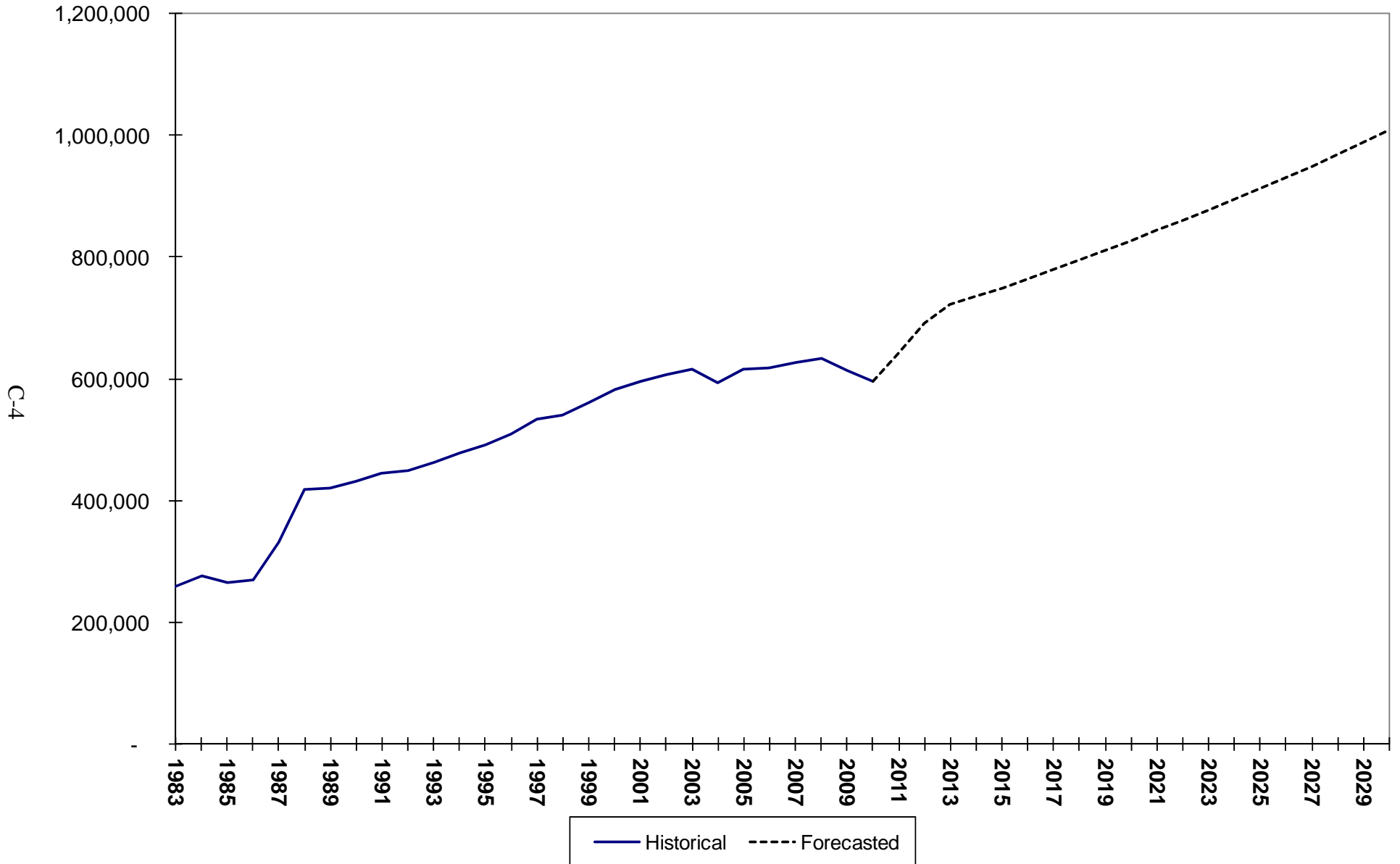
Montana-Dakota Integrated System

Historical and Forecasted LC&I Sales



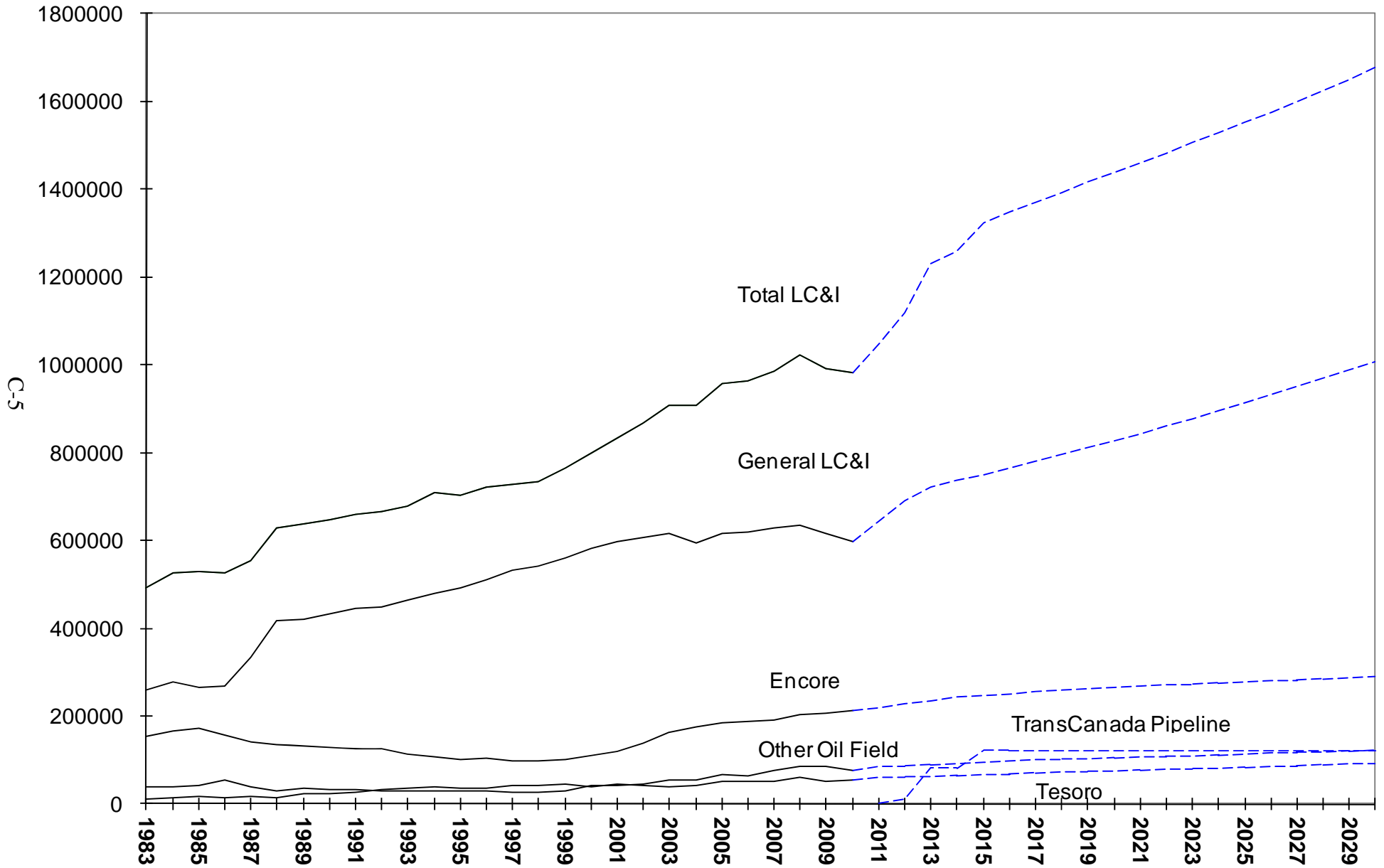
Montana-Dakota Integrated System

Historical and Forecasted General LC&I Sales



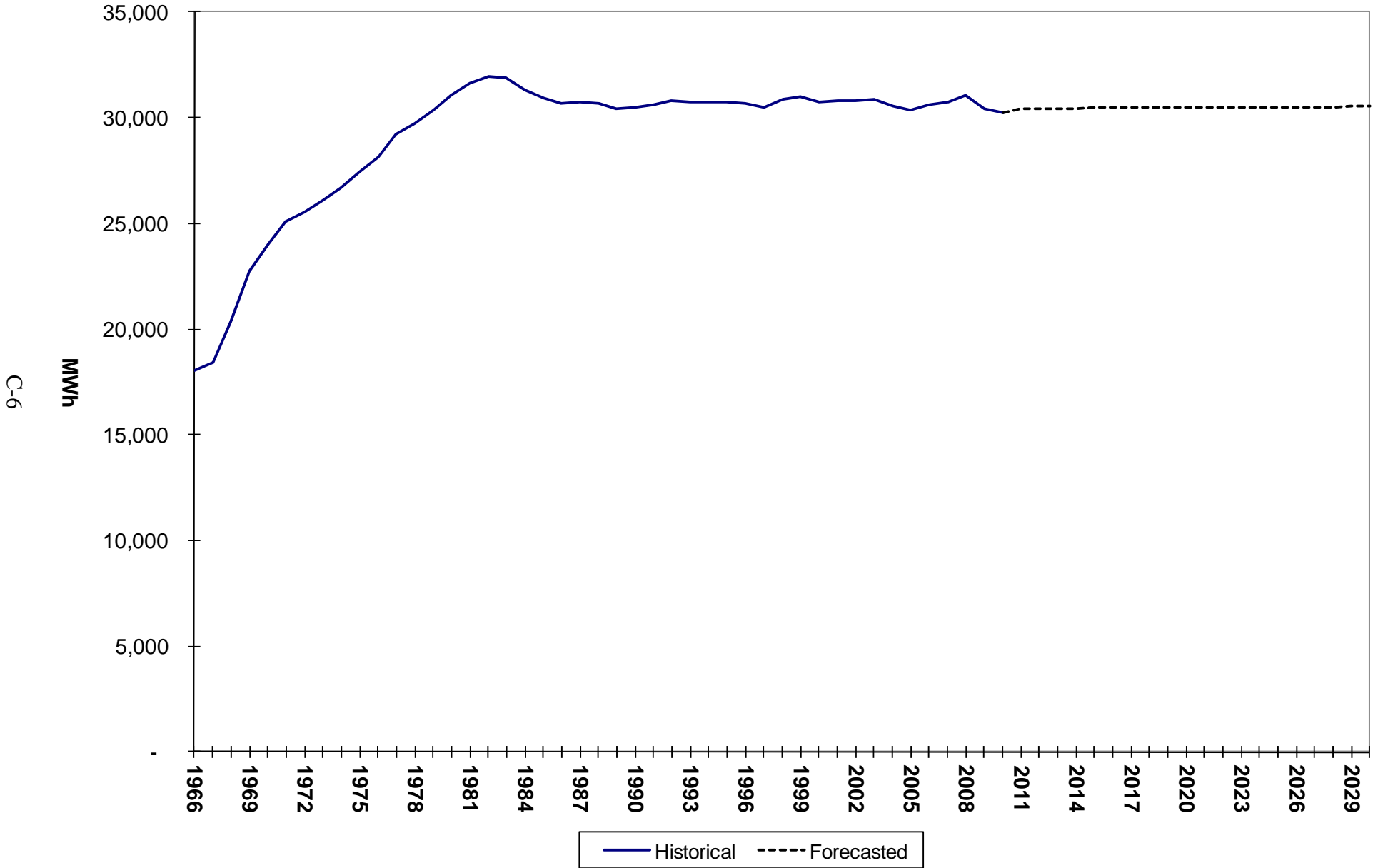
Montana-Dakota Integrated System

Historical and Forecasted Sales by LC&I Customer



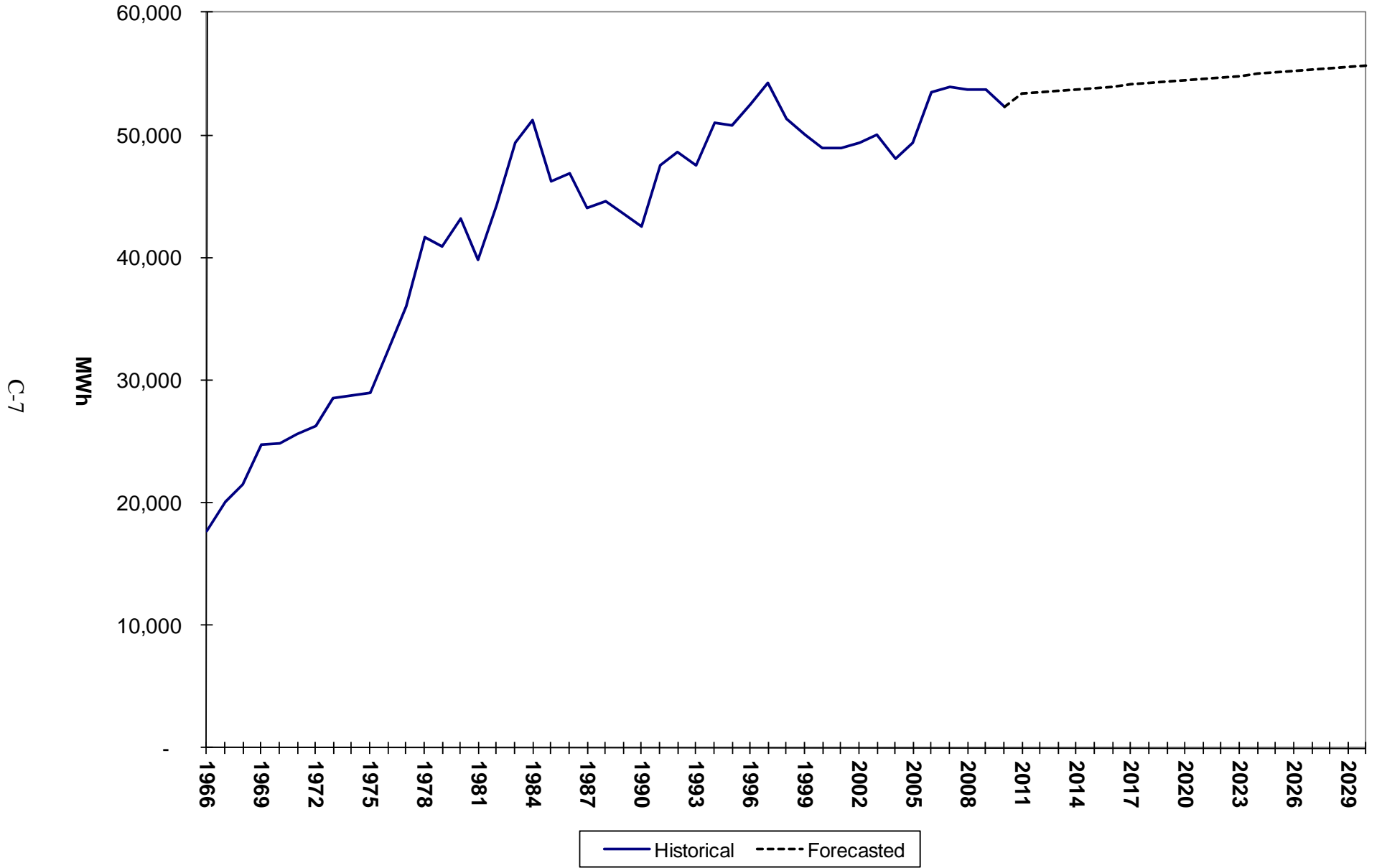
Montana-Dakota Integrated System

Historical and Forecasted Street Lighting Sales

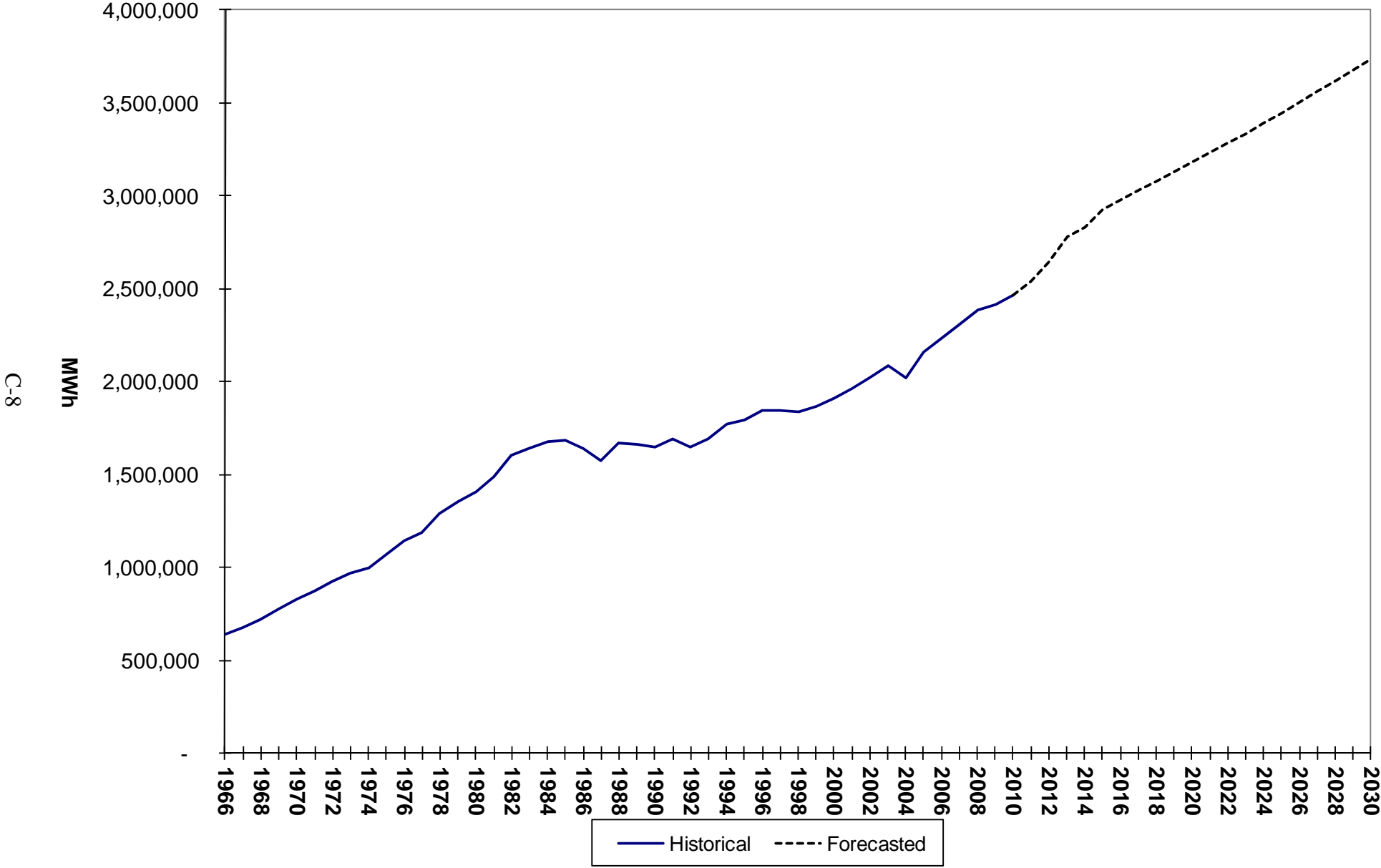


Montana-Dakota Integrated System

Historical and Forecasted Miscellaneous Sales



Montana-Dakota Integrated System Historical and Forecasted Total Sales



Montana-Dakota Utilities Co.
Forecasted Energy (HWh) and Seasonal Demands (MW)
Montana

<u>Year</u>	<u>Summer Peak before Rate 38/39 Interruptions</u>		<u>Summer Peak after all DSM Reductions</u>		<u>Winter Peak</u>		<u>Annual Energy Requirments</u>		<u>Load Factor</u>
	<u>(MW)</u>	<u>% Chg</u>	<u>(MW)</u>	<u>% Chg</u>	<u>(MW)</u>	<u>% Chg</u>	<u>(GWh)</u>	<u>% Chg</u>	<u>(%) 1/</u>
2011	131.9		131.9		115.1		796.4		68.93%
2012	137.0	3.87%	137.0	3.87%	120.0	4.26%	834.4	4.77%	69.34%
2013	142.3	3.87%	142.3	3.87%	125.1	4.25%	934.7	12.02%	74.98%
2014	144.6	1.62%	144.6	1.62%	127.4	1.84%	955.2	2.19%	75.41%
2015	148.7	2.84%	148.7	2.84%	131.3	3.06%	1,016.0	6.37%	78.00%
2016	151.0	1.55%	151.0	1.55%	133.4	1.60%	1,033.1	1.68%	77.89%
2017	153.2	1.46%	153.2	1.46%	135.4	1.50%	1,048.9	1.53%	78.16%
2018	155.5	1.50%	155.5	1.50%	137.6	1.62%	1,064.9	1.53%	78.18%
2019	157.9	1.54%	157.9	1.54%	139.7	1.53%	1,081.1	1.52%	78.16%
2020	160.2	1.46%	160.2	1.46%	141.8	1.50%	1,095.3	1.31%	77.84%
2021	162.5	1.44%	162.5	1.44%	144.0	1.55%	1,109.8	1.32%	77.96%
2022	164.9	1.48%	164.9	1.48%	146.1	1.46%	1,124.4	1.32%	77.84%
2023	167.3	1.46%	167.3	1.46%	148.4	1.57%	1,139.4	1.33%	77.75%
2024	169.8	1.49%	169.8	1.49%	150.6	1.48%	1,154.5	1.33%	77.40%
2025	172.3	1.47%	172.3	1.47%	152.8	1.46%	1,169.9	1.33%	77.51%
2026	174.8	1.45%	174.8	1.45%	155.2	1.57%	1,185.5	1.33%	77.42%
2027	177.3	1.43%	177.3	1.43%	157.5	1.48%	1,201.4	1.34%	77.35%
2028	179.9	1.47%	179.9	1.47%	159.9	1.52%	1,217.5	1.34%	77.05%
2029	182.6	1.50%	182.6	1.50%	162.4	1.56%	1,233.9	1.35%	77.14%
2030	185.3	1.48%	185.3	1.48%	164.8	1.48%	1,250.6	1.35%	77.04%

1/ Load Factor is calculated using demand net of interruptible loads.

Montana-Dakota Utilities Co.
Forecasted Energy (HWh) and Seasonal Demands (MW)
North Dakota

<u>Year</u>	<u>Summer Peak before Rate 38/39 Interruptions</u>		<u>Summer Peak after all DSM Reductions</u>		<u>Winter Peak</u>		<u>Annual Energy Requirments</u>		<u>Load Factor</u>
	<u>(MW)</u>	<u>% Chg</u>	<u>(MW)</u>	<u>% Chg</u>	<u>(MW)</u>	<u>% Chg</u>	<u>(GWh)</u>	<u>% Chg</u>	<u>(%) 1/</u>
2011	347.4		339.8		307.0		1,783.7		59.92%
2012	360.6	3.80%	350.3	3.09%	320.0	4.23%	1,845.3	3.45%	59.97%
2013	374.6	3.88%	364.3	4.00%	333.7	4.28%	1,891.9	2.53%	59.28%
2014	380.7	1.63%	370.4	1.67%	339.7	1.80%	1,926.7	1.84%	59.38%
2015	391.5	2.84%	381.2	2.92%	350.1	3.06%	1,961.4	1.80%	58.74%
2016	397.5	1.53%	387.2	1.57%	355.7	1.60%	1,996.3	1.78%	58.69%
2017	403.5	1.51%	393.2	1.55%	361.2	1.55%	2,031.6	1.77%	58.98%
2018	409.5	1.49%	399.2	1.53%	366.9	1.58%	2,067.6	1.77%	59.13%
2019	415.6	1.49%	405.3	1.53%	372.7	1.58%	2,104.1	1.77%	59.26%
2020	421.7	1.47%	411.4	1.51%	378.3	1.50%	2,141.3	1.77%	59.25%
2021	427.9	1.47%	417.6	1.51%	383.9	1.48%	2,179.1	1.77%	59.57%
2022	434.2	1.47%	423.9	1.51%	389.7	1.51%	2,217.5	1.76%	59.72%
2023	440.6	1.47%	430.3	1.51%	395.7	1.54%	2,256.5	1.76%	59.86%
2024	447.0	1.45%	436.7	1.49%	401.6	1.49%	2,296.1	1.75%	59.86%
2025	453.6	1.48%	443.3	1.51%	407.7	1.52%	2,336.4	1.76%	60.17%
2026	460.2	1.46%	449.9	1.49%	413.9	1.52%	2,377.4	1.75%	60.32%
2027	466.9	1.46%	456.6	1.49%	420.1	1.50%	2,419.1	1.75%	60.48%
2028	473.7	1.46%	463.4	1.49%	426.5	1.52%	2,461.4	1.75%	60.47%
2029	480.7	1.48%	470.4	1.51%	433.0	1.52%	2,504.5	1.75%	60.78%
2030	487.8	1.48%	477.5	1.51%	439.6	1.52%	2,548.3	1.75%	60.92%

1/ Load Factor is calculated using demand net of interruptible loads.

Montana-Dakota Utilities Co.
Forecasted Energy (HWh) and Seasonal Demands (MW)
South Dakota

<u>Year</u>	<u>Summer Peak before Rate 38/39 Interruptions</u>		<u>Summer Peak after all DSM Reductions</u>		<u>Winter Peak</u>		<u>Annual Energy Requirments</u>		<u>Load Factor</u>
	<u>(MW)</u>	<u>% Chg</u>	<u>(MW)</u>	<u>% Chg</u>	<u>(MW)</u>	<u>% Chg</u>	<u>(GWh)</u>	<u>% Chg</u>	<u>(%) 1/</u>
2011	28.3		28.3		28.2		165.0		66.56%
2012	29.4	3.89%	29.4	3.89%	29.4	4.26%	170.0	3.03%	65.83%
2013	30.5	3.74%	30.5	3.74%	30.7	4.42%	173.9	2.29%	65.09%
2014	31.0	1.64%	31.0	1.64%	31.2	1.63%	177.1	1.84%	65.22%
2015	31.9	2.90%	31.9	2.90%	32.2	3.21%	180.3	1.81%	64.52%
2016	32.4	1.57%	32.4	1.57%	32.7	1.55%	183.5	1.77%	64.48%
2017	32.9	1.54%	32.9	1.54%	33.2	1.53%	186.8	1.80%	64.82%
2018	33.4	1.52%	33.4	1.52%	33.7	1.51%	190.1	1.77%	64.97%
2019	33.9	1.50%	33.9	1.50%	34.3	1.78%	193.5	1.79%	65.16%
2020	34.4	1.47%	34.4	1.47%	34.8	1.46%	197.0	1.81%	65.20%
2021	34.9	1.45%	34.9	1.45%	35.3	1.44%	200.5	1.78%	65.58%
2022	35.4	1.43%	35.4	1.43%	35.8	1.42%	204.1	1.80%	65.82%
2023	35.9	1.41%	35.9	1.41%	36.4	1.68%	207.7	1.76%	66.04%
2024	36.4	1.39%	36.4	1.39%	36.9	1.37%	211.4	1.78%	66.12%
2025	37.0	1.65%	37.0	1.65%	37.5	1.63%	215.2	1.80%	66.40%
2026	37.5	1.35%	37.5	1.35%	38.1	1.60%	219.0	1.77%	66.67%
2027	38.1	1.60%	38.1	1.60%	38.6	1.31%	222.9	1.78%	66.79%
2028	38.6	1.31%	38.6	1.31%	39.2	1.55%	226.9	1.79%	66.92%
2029	39.2	1.55%	39.2	1.55%	39.8	1.53%	230.9	1.76%	67.24%
2030	39.8	1.53%	39.8	1.53%	40.4	1.51%	235.0	1.78%	67.40%

1/ Load Factor is calculated using demand net of interruptible loads.

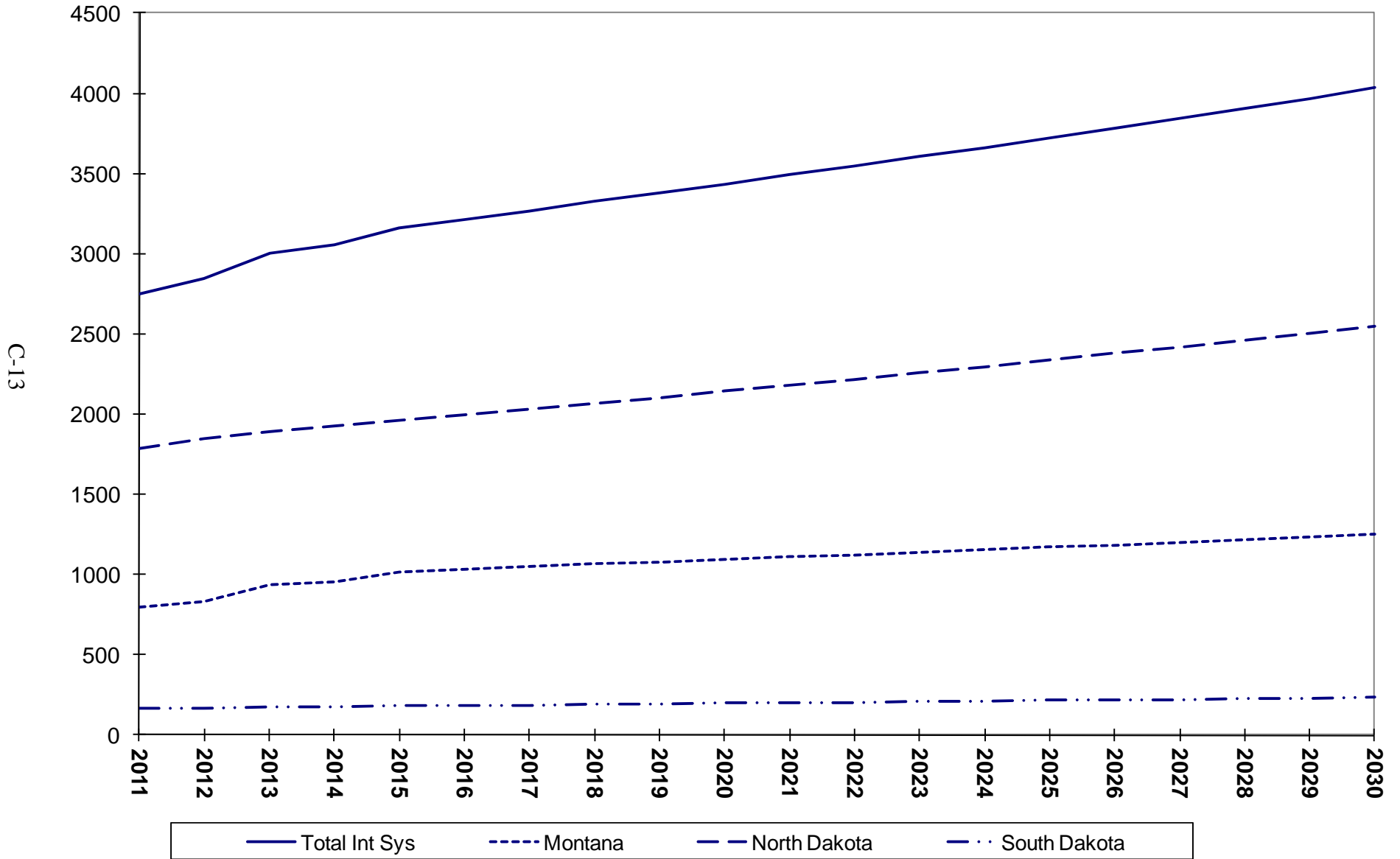
Montana-Dakota Utilities Co.
Forecasted Energy (HWh) and Seasonal Demands (MW)
Integrated System

<u>Year</u>	<u>Summer Peak before Rate 38/39 Interruptions</u>		<u>Summer Peak after all DSM Reductions</u>		<u>Winter Peak</u>		<u>Annual Energy Requirments</u>		<u>Load Factor</u>
	<u>(MW)</u>	<u>% Chg</u>	<u>(MW)</u>	<u>% Chg</u>	<u>(MW)</u>	<u>% Chg</u>	<u>(GWh)</u>	<u>% Chg</u>	<u>(%) 1/</u>
2011	507.6		500.0		450.3		2,745.1		62.67%
2012	527.0	3.82%	516.7	3.34%	469.4	4.24%	2,849.7	3.81%	62.79%
2013	547.4	3.87%	537.1	3.95%	489.5	4.28%	3,000.5	5.29%	63.77%
2014	556.3	1.63%	546.0	1.66%	498.3	1.80%	3,059.0	1.95%	63.96%
2015	572.1	2.84%	561.8	2.89%	513.6	3.07%	3,157.7	3.23%	64.16%
2016	580.9	1.54%	570.6	1.57%	521.8	1.60%	3,212.9	1.75%	64.10%
2017	589.6	1.50%	579.3	1.52%	529.8	1.53%	3,267.3	1.69%	64.38%
2018	598.4	1.49%	588.1	1.52%	538.2	1.59%	3,322.6	1.69%	64.49%
2019	607.4	1.50%	597.1	1.53%	546.7	1.58%	3,378.7	1.69%	64.59%
2020	616.3	1.47%	606.0	1.49%	554.9	1.50%	3,433.6	1.62%	64.50%
2021	625.3	1.46%	615.0	1.49%	563.2	1.50%	3,489.4	1.63%	64.77%
2022	634.5	1.47%	624.2	1.50%	571.6	1.49%	3,546.0	1.62%	64.85%
2023	643.8	1.47%	633.5	1.49%	580.5	1.56%	3,603.6	1.62%	64.94%
2024	653.2	1.46%	642.9	1.48%	589.1	1.48%	3,662.0	1.62%	64.85%
2025	662.9	1.48%	652.6	1.51%	598.0	1.51%	3,721.5	1.62%	65.10%
2026	672.5	1.45%	662.2	1.47%	607.2	1.54%	3,781.9	1.62%	65.20%
2027	682.3	1.46%	672.0	1.48%	616.2	1.48%	3,843.4	1.63%	65.29%
2028	692.2	1.45%	681.9	1.47%	625.6	1.53%	3,905.8	1.62%	65.21%
2029	702.5	1.49%	692.2	1.51%	635.2	1.53%	3,969.3	1.63%	65.46%
2030	712.9	1.48%	702.6	1.50%	644.8	1.51%	4,033.9	1.63%	65.54%

1/ Load Factor is calculated using demand net of interruptible loads.

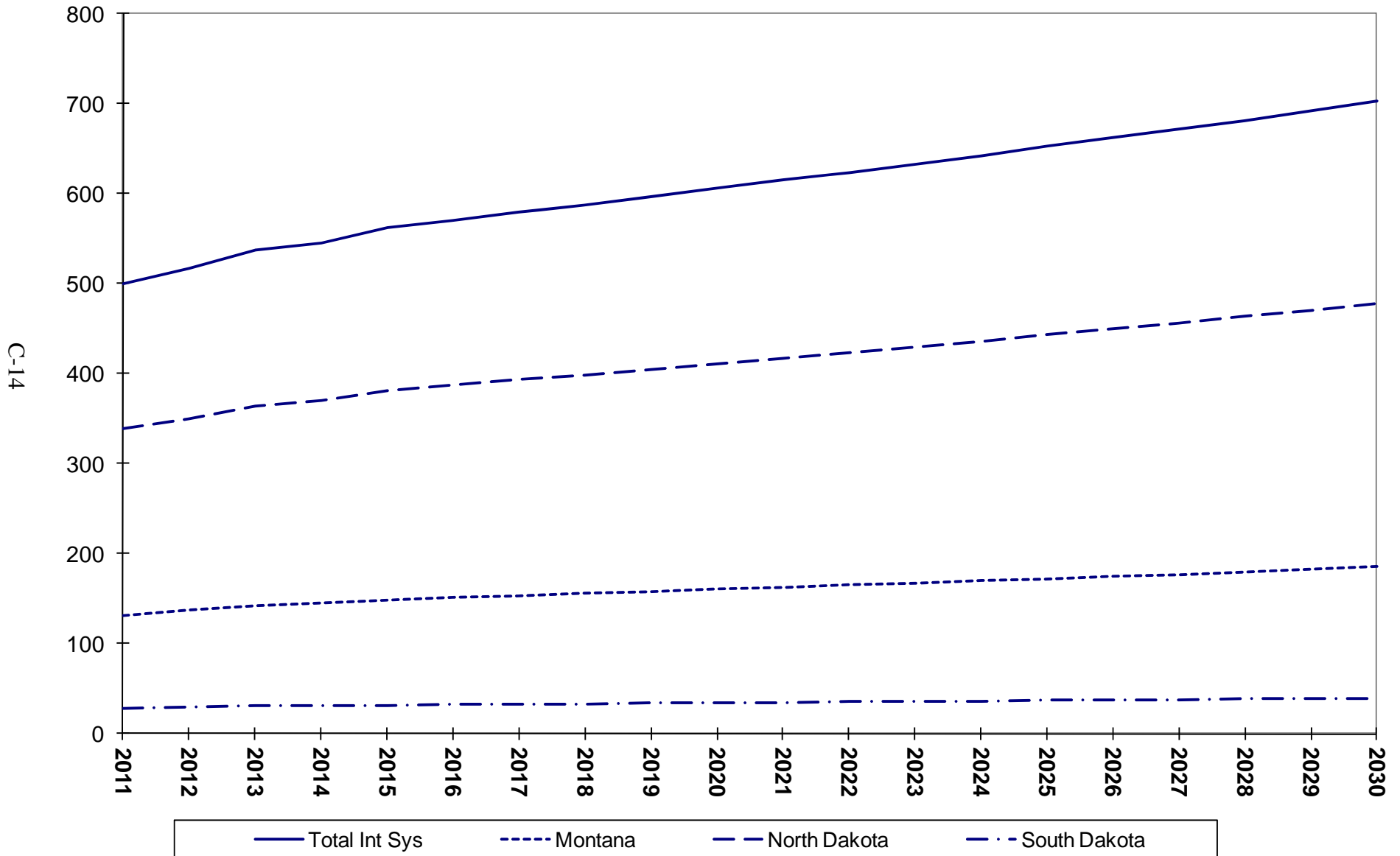
Montana-Dakota Integrated System

Forecast of Annual Energy by State



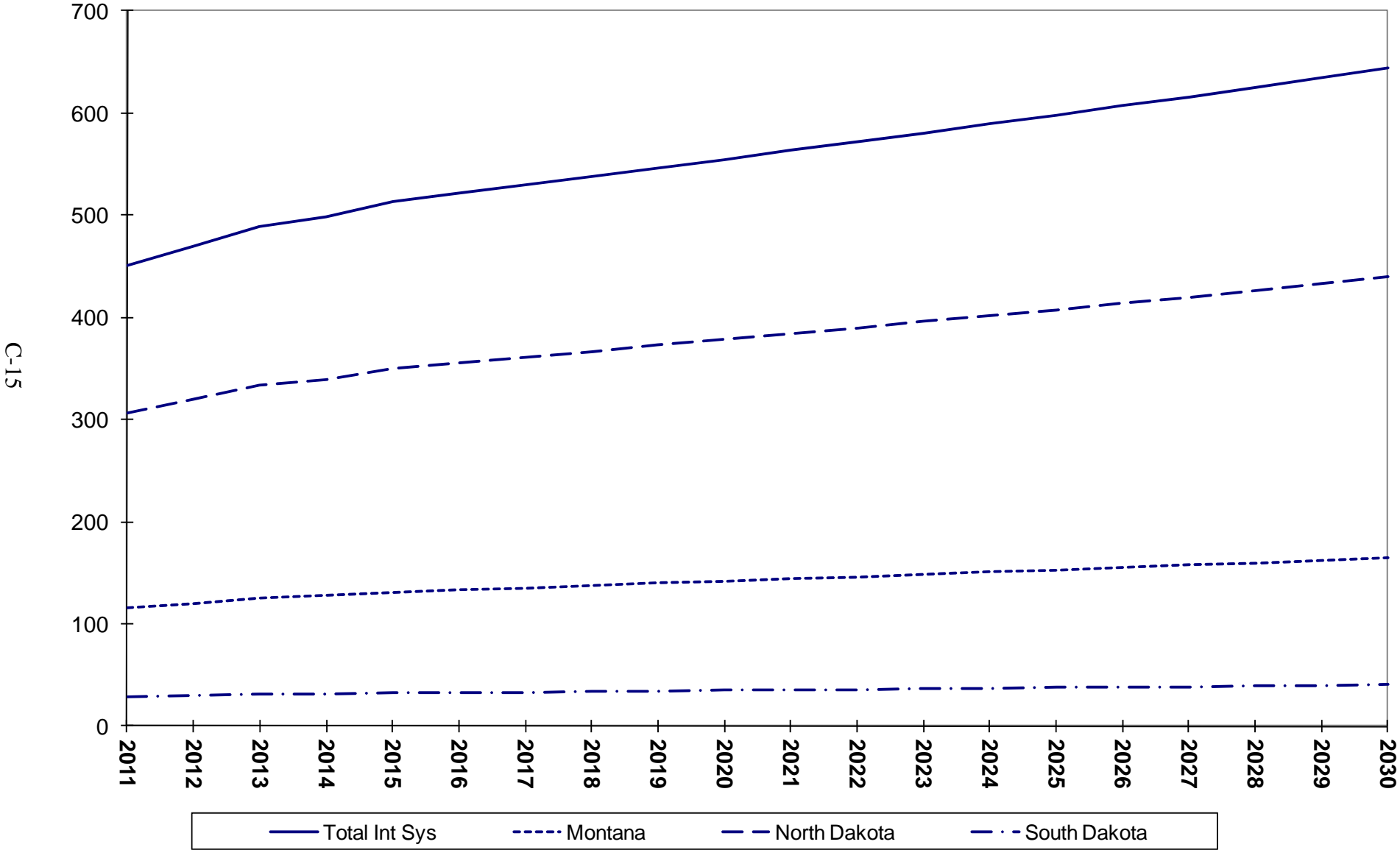
Montana-Dakota Integrated System

Forecast of Summer Peak Demand (Net of Interruptible Load) by State



Montana-Dakota Integrated System

Forecast of Winter Peak Demand by State



APPENDIX D

Monthly Forecasts - Montana (2011-2020)

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

MONTANA YEAR 2011

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	889.5	809.7	744.1	647.7	649.2	685.0	948.1	843.8	721.8	643.8	768.5	907.9	9,260.0
# of Residential Customers	18,844	18,841	18,826	18,769	18,774	18,783	18,797	18,805	18,811	18,826	18,851	18,856	18,815
Total Residential Sales - MWh	16,761	15,255	14,008	12,156	12,189	12,867	17,821	15,868	13,577	12,120	14,487	17,120	174,229
Use per Small Comm & Ind Customer - kWh	2,115.3	2,051.3	1,957.6	1,747.4	1,845.3	1,779.3	2,309.9	2,131.0	1,958.2	1,744.1	1,923.0	2,145.5	23,708.7
# of Small Comm & Ind Customers	4,832	4,831	4,836	4,881	4,945	4,974	4,985	4,991	4,977	4,924	4,897	4,885	4,913
Total Small Comm & Ind Sales - MWh	10,221	9,910	9,467	8,529	9,125	8,850	11,515	10,636	9,746	8,588	9,417	10,481	116,485
General Large Comm & Ind Sales	17,861	17,006	16,553	17,697	17,279	13,955	17,338	17,004	17,522	18,164	18,717	21,223	210,319
Encore Oil Sales	17,667	17,309	18,003	17,591	16,923	18,733	18,081	17,796	18,415	19,285	19,637	20,270	219,710
TransCanada Keystone Pipeline	-	-	-	-	-	-	-	-	-	-	-	-	-
Westmoreland Coal - MT Sales	259	258	237	210	178	165	146	139	146	178	227	273	2,416
Total Sales (Residential, SC&I and LC&I)	62,769	59,738	58,268	56,183	55,694	54,570	64,901	61,443	59,406	58,335	62,485	69,367	723,159
Other Public Sales	506	519	472	494	586	657	875	772	691	513	488	529	7,102
Street & Highway Lighting Sales	631	577	621	592	620	569	587	613	587	625	606	617	7,245
Interdepartmental Sales	18	18	16	14	14	12	15	13	15	14	16	19	184
Total Billed Sales - MWh	63,924	60,852	59,377	57,283	56,914	55,808	66,378	62,841	60,699	59,487	63,595	70,532	737,690
Company Use	40	37	33	29	26	25	31	29	26	25	29	34	364
Total Energy	63,964	60,889	59,410	57,312	56,940	55,833	66,409	62,870	60,725	59,512	63,624	70,566	738,054
Total Requirements (Energy + Losses)	69,024	65,705	64,109	61,845	61,444	60,249	71,662	67,843	65,528	64,219	68,657	76,148	796,433
# of Large Comm & Ind Customers	248	248	249	250	254	256	257	258	256	253	252	251	253
# of Other Public Customers	101	101	102	104	107	108	108	108	106	104	103	102	105
# of Street & Highway Lighting Customers	93	91	90	90	90	90	83	83	83	83	83	84	87
Peak Demand Net of DSM Programs	98.2	99.6	92.6	89.1	80.6	117.5	131.9	111.5	98.9	89.2	104.5	115.1	131.9

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

MONTANA YEAR 2012

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	898.1	817.6	751.3	654.0	655.5	691.7	957.3	852.1	728.8	650.1	776.0	916.8	9,350.3
# of Residential Customers	18,931	18,928	18,913	18,855	18,861	18,870	18,884	18,892	18,898	18,913	18,938	18,943	18,902
Total Residential Sales - MWh	17,002	15,475	14,210	12,331	12,364	13,053	18,078	16,097	13,773	12,295	14,696	17,366	176,740
Use per Small Comm & Ind Customer - kWh	2,146.7	2,081.8	1,986.7	1,773.2	1,872.5	1,805.3	2,344.0	2,162.7	1,987.1	1,770.0	1,951.3	2,177.8	24,059.7
# of Small Comm & Ind Customers	4,880	4,879	4,884	4,930	4,995	5,024	5,035	5,041	5,027	4,973	4,946	4,933	4,962
Total Small Comm & Ind Sales - MWh	10,476	10,157	9,703	8,742	9,353	9,070	11,802	10,902	9,989	8,802	9,651	10,743	119,390
General Large Comm & Ind Sales	18,904	17,999	17,519	18,730	18,288	14,770	18,351	17,997	18,546	19,224	19,809	22,306	222,443
Encore Oil Sales	18,260	17,890	18,608	18,182	17,491	19,362	18,688	18,394	19,033	19,933	20,297	20,951	227,089
TransCanada Keystone Pipeline	-	-	-	-	-	-	1,732	1,732	1,676	1,732	1,676	1,732	10,280
Westmoreland Coal - MT Sales	259	258	237	210	178	165	146	139	146	178	227	273	2,416
Total Sales (Residential, SC&I and LC&I)	64,901	61,779	60,277	58,195	57,674	56,420	68,797	65,261	63,163	62,164	66,356	73,371	758,358
Other Public Sales	507	520	473	496	587	658	878	774	693	515	489	530	7,120
Street & Highway Lighting Sales	631	577	621	592	621	570	587	613	587	625	606	618	7,248
Interdepartmental Sales	18	18	16	14	14	12	15	13	15	13	16	19	183
Total Billed Sales - MWh	66,057	62,894	61,387	59,297	58,896	57,660	70,277	66,661	64,458	63,317	67,467	74,538	772,909
Company Use	40	37	33	29	26	25	31	29	26	25	29	34	364
Total Energy	66,097	62,931	61,420	59,326	58,922	57,685	70,308	66,690	64,484	63,342	67,496	74,572	773,273
Total Requirements (Energy + Losses)	71,325	67,909	66,278	64,019	63,583	62,248	75,869	71,965	69,585	68,352	72,835	80,471	834,439
# of Large Comm & Ind Customers	249	249	250	252	255	257	259	259	257	255	253	252	254
# of Other Public Customers	101	101	102	104	107	108	108	108	106	104	103	102	105
# of Street & Highway Lighting Customers	93	91	90	90	90	90	83	83	83	83	83	84	87
Peak Demand Net of DSM Programs	99.7	101.2	94.1	90.5	83.7	122.0	137.0	115.8	102.6	92.6	109.0	120.0	137.0

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

MONTANA YEAR 2013

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	906.9	825.5	758.6	660.4	661.9	698.5	966.6	860.4	735.9	656.4	783.5	925.6	9,441.2
# of Residential Customers	19,017	19,014	18,999	18,941	18,947	18,956	18,970	18,978	18,984	18,999	19,025	19,029	18,988
Total Residential Sales - MWh	17,246	15,696	14,413	12,508	12,541	13,240	18,337	16,328	13,971	12,471	14,907	17,614	179,272
Use per Small Comm & Ind Customer - kWh	2,178.5	2,112.6	2,016.0	1,799.2	1,900.1	1,831.9	2,378.5	2,194.4	2,016.1	1,795.9	1,980.0	2,209.7	24,413.8
# of Small Comm & Ind Customers	4,929	4,928	4,933	4,980	5,045	5,075	5,086	5,092	5,078	5,023	4,996	4,983	5,012
Total Small Comm & Ind Sales - MWh	10,738	10,411	9,945	8,960	9,586	9,297	12,097	11,174	10,238	9,021	9,892	11,011	122,370
General Large Comm & Ind Sales	19,637	18,697	18,198	19,457	18,998	15,343	19,061	18,694	19,265	19,969	20,577	23,053	230,949
Encore Oil Sales	18,875	18,492	19,234	18,793	18,079	20,013	19,316	19,013	19,673	20,602	20,979	21,655	234,724
TransCanada Keystone Pipeline	6,927	6,256	6,927	6,703	6,927	6,703	6,927	6,927	6,703	6,927	6,703	6,927	81,557
Westmoreland Coal - MT Sales	259	258	237	210	178	165	146	139	146	178	227	273	2,416
Total Sales (Residential, SC&I and LC&I)	73,682	69,810	68,954	66,631	66,309	64,761	75,884	72,275	69,996	69,168	73,285	80,533	851,288
Other Public Sales	509	522	474	497	589	660	880	776	694	516	491	532	7,140
Street & Highway Lighting Sales	631	577	621	592	621	570	587	613	587	625	606	618	7,248
Interdepartmental Sales	18	18	16	14	14	12	15	13	14	13	16	19	182
Total Billed Sales - MWh	74,840	70,927	70,065	67,734	67,533	66,003	77,366	73,677	71,291	70,322	74,398	81,702	865,858
Company Use	40	37	33	29	26	25	31	29	26	25	29	34	364
Total Energy	74,880	70,964	70,098	67,763	67,559	66,028	77,397	73,706	71,317	70,347	74,427	81,736	866,222
Total Requirements (Energy + Losses)	80,803	76,577	75,643	73,123	72,903	71,251	83,519	79,536	76,958	75,911	80,314	88,201	934,739
# of Large Comm & Ind Customers	250	251	251	253	256	259	260	260	259	256	254	253	255
# of Other Public Customers	101	101	102	104	107	108	108	108	106	104	103	102	105
# of Street & Highway Lighting Customers	93	91	90	90	90	90	83	83	83	83	83	84	87
Peak Demand Net of DSM Programs	104.0	105.5	98.1	94.4	87.0	126.7	142.3	120.3	106.6	96.2	113.7	125.1	142.3

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

MONTANA YEAR 2014

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	915.7	833.5	766.0	666.8	668.4	705.3	976.1	868.8	743.1	662.8	791.2	934.6	9,533.3
# of Residential Customers	19,101	19,098	19,083	19,025	19,030	19,039	19,054	19,061	19,067	19,082	19,108	19,113	19,072
Total Residential Sales - MWh	17,491	15,919	14,618	12,685	12,720	13,428	18,598	16,560	14,169	12,648	15,118	17,863	181,817
Use per Small Comm & Ind Customer - kWh	2,210.5	2,143.6	2,045.6	1,825.3	1,928.0	1,858.8	2,413.7	2,226.7	2,045.8	1,822.2	2,009.3	2,241.8	24,771.9
# of Small Comm & Ind Customers	4,979	4,978	4,983	5,031	5,096	5,126	5,137	5,143	5,129	5,074	5,046	5,034	5,063
Total Small Comm & Ind Sales - MWh	11,006	10,671	10,193	9,183	9,825	9,528	12,399	11,452	10,493	9,246	10,139	11,285	125,420
General Large Comm & Ind Sales	20,116	19,152	18,642	19,931	19,460	15,717	19,527	19,150	19,734	20,456	21,079	23,616	236,580
Encore Oil Sales	19,509	19,113	19,880	19,425	18,686	20,685	19,965	19,652	20,334	21,295	21,684	22,245	242,473
TransCanada Keystone Pipeline	6,927	6,256	6,927	6,703	6,927	6,703	6,927	6,927	6,703	6,927	6,703	6,927	81,557
Westmoreland Coal - MT Sales	259	258	237	210	178	165	146	139	146	178	227	273	2,416
Total Sales (Residential, SC&I and LC&I)	75,308	71,369	70,497	68,137	67,796	66,226	77,562	73,880	71,579	70,750	74,950	82,209	870,263
Other Public Sales	511	524	476	498	590	662	883	779	696	517	492	533	7,161
Street & Highway Lighting Sales	632	578	621	592	621	570	587	613	588	626	606	618	7,252
Interdepartmental Sales	18	17	16	14	14	12	15	13	14	13	16	18	180
Total Billed Sales - MWh	76,469	72,488	71,610	69,241	69,021	67,470	79,047	75,285	72,877	71,906	76,064	83,378	884,856
Company Use	40	37	33	29	26	25	31	29	26	25	29	34	364
Total Energy	76,509	72,525	71,643	69,270	69,047	67,495	79,078	75,314	72,903	71,931	76,093	83,412	885,220
Total Requirements (Energy + Losses)	82,561	78,262	77,310	74,749	74,509	72,834	85,333	81,271	78,670	77,621	82,112	90,010	955,242
# of Large Comm & Ind Customers	251	252	252	254	258	260	261	261	260	257	255	254	256
# of Other Public Customers	101	101	102	104	107	108	108	108	106	104	103	102	105
# of Street & Highway Lighting Customers	93	91	90	90	90	90	83	83	83	83	83	84	87
Peak Demand Net of DSM Programs	108.4	110.0	102.3	98.4	88.4	128.8	144.6	122.3	108.4	97.8	115.7	127.4	144.6

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

MONTANA YEAR 2015

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	924.7	841.7	773.5	673.3	674.9	712.1	985.6	877.3	750.4	669.3	798.9	943.6	9,626.4
# of Residential Customers	19,183	19,180	19,165	19,106	19,112	19,121	19,135	19,143	19,149	19,164	19,190	19,195	19,154
Total Residential Sales - MWh	17,738	16,144	14,824	12,864	12,899	13,617	18,860	16,794	14,369	12,827	15,331	18,113	184,380
Use per Small Comm & Ind Customer - kWh	2,243.4	2,175.7	2,076.1	1,853.0	1,956.9	1,886.8	2,450.0	2,259.9	2,076.7	1,849.5	2,039.1	2,275.6	25,143.2
# of Small Comm & Ind Customers	5,028	5,027	5,032	5,080	5,146	5,176	5,187	5,194	5,179	5,124	5,096	5,083	5,113
Total Small Comm & Ind Sales - MWh	11,280	10,937	10,447	9,413	10,070	9,766	12,708	11,738	10,755	9,477	10,391	11,567	128,549
General Large Comm & Ind Sales	20,607	19,620	19,097	20,417	19,935	16,100	20,003	19,619	20,216	20,955	21,593	24,193	242,355
Encore Oil Sales	19,836	19,434	20,214	19,751	19,000	21,033	20,301	19,981	20,675	21,653	22,048	22,618	246,544
TransCanada Keystone Pipeline	10,390	9,384	10,390	10,055	10,390	10,055	10,390	10,390	10,055	10,390	10,055	10,390	122,334
Westmoreland Coal - MT Sales	259	258	237	210	178	165	146	139	146	178	227	273	2,416
Total Sales (Residential, SC&I and LC&I)	80,110	75,777	75,209	72,710	72,472	70,736	82,408	78,661	76,216	75,480	79,645	87,154	926,578
Other Public Sales	512	525	477	499	592	664	885	781	698	519	494	535	7,181
Street & Highway Lighting Sales	632	578	621	592	621	570	587	613	588	626	606	618	7,252
Interdepartmental Sales	17	17	16	14	13	12	15	13	14	13	15	18	177
Total Billed Sales - MWh	81,271	76,897	76,323	73,815	73,698	71,982	83,895	80,068	77,516	76,638	80,760	88,325	941,188
Company Use	40	37	33	29	26	25	31	29	26	25	29	34	364
Total Energy	81,311	76,934	76,356	73,844	73,724	72,007	83,926	80,097	77,542	76,663	80,789	88,359	941,552
Total Requirements (Energy + Losses)	87,743	83,019	82,396	79,685	79,556	77,703	90,565	86,433	83,676	82,727	87,179	95,348	1,016,030
# of Large Comm & Ind Customers	252	253	253	255	259	261	262	262	261	258	256	255	257
# of Other Public Customers	101	101	102	104	107	108	108	108	106	104	103	102	105
# of Street & Highway Lighting Customers	93	91	90	90	90	90	83	83	83	83	83	84	87
Peak Demand Net of DSM Programs	110.4	112.0	104.1	100.2	90.9	132.4	148.7	125.7	111.4	100.5	119.2	131.3	148.7

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

MONTANA YEAR 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	933.7	849.9	781.1	679.9	681.5	719.1	995.2	885.8	757.7	675.8	806.7	952.7	9,720.2
# of Residential Customers	19,262	19,259	19,244	19,185	19,191	19,200	19,215	19,222	19,228	19,244	19,270	19,274	19,233
Total Residential Sales - MWh	17,985	16,369	15,031	13,043	13,079	13,807	19,123	17,027	14,569	13,006	15,545	18,363	186,947
Use per Small Comm & Ind Customer - kWh	2,276.7	2,207.8	2,107.0	1,880.7	1,986.0	1,914.7	2,486.2	2,293.8	2,107.2	1,876.9	2,069.4	2,309.6	25,516.6
# of Small Comm & Ind Customers	5,078	5,077	5,082	5,130	5,197	5,228	5,239	5,245	5,231	5,175	5,147	5,133	5,164
Total Small Comm & Ind Sales - MWh	11,561	11,209	10,708	9,648	10,321	10,010	13,025	12,031	11,023	9,713	10,651	11,855	131,755
General Large Comm & Ind Sales	21,111	20,101	19,565	20,917	20,424	16,495	20,493	20,099	20,711	21,468	22,122	24,729	248,235
Encore Oil Sales	20,170	19,760	20,554	20,082	19,320	21,386	20,641	20,317	21,023	22,016	22,419	22,998	250,686
TransCanada Keystone Pipeline	10,390	9,384	10,390	10,055	10,390	10,055	10,390	10,390	10,055	10,390	10,055	10,390	122,334
Westmoreland Coal - MT Sales	259	258	237	210	178	165	146	139	146	178	227	273	2,416
Total Sales (Residential, SC&I and LC&I)	81,476	77,081	76,485	73,955	73,712	71,918	83,818	80,003	77,527	76,771	81,019	88,608	942,373
Other Public Sales	514	526	478	501	594	666	888	783	701	520	495	536	7,202
Street & Highway Lighting Sales	632	578	621	592	621	570	588	613	588	626	606	618	7,253
Interdepartmental Sales	17	17	16	14	13	12	15	13	14	13	15	18	177
Total Billed Sales - MWh	82,639	78,202	77,600	75,062	74,940	73,166	85,309	81,412	78,830	77,930	82,135	89,780	957,005
Company Use	40	37	33	29	26	25	31	29	26	25	29	34	364
Total Energy	82,679	78,239	77,633	75,091	74,966	73,191	85,340	81,441	78,856	77,955	82,164	89,814	957,369
Total Requirements (Energy + Losses)	89,219	84,428	83,774	81,031	80,896	78,980	92,090	87,883	85,094	84,121	88,663	96,918	1,033,097
# of Large Comm & Ind Customers	253	254	254	256	260	262	263	263	262	259	257	256	258
# of Other Public Customers	101	101	102	104	107	108	108	108	106	104	103	102	105
# of Street & Highway Lighting Customers	93	91	90	90	90	90	83	83	83	83	83	84	87
Peak Demand Net of DSM Programs	113.7	115.4	107.3	103.3	92.3	134.4	151.0	127.7	113.1	102.1	121.1	133.4	151.0

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

MONTANA YEAR 2017

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	942.8	858.2	788.7	686.5	688.2	726.1	1,004.9	894.5	765.1	682.4	814.5	962.0	9,814.8
# of Residential Customers	19,339	19,336	19,321	19,262	19,267	19,277	19,291	19,299	19,305	19,321	19,347	19,351	19,310
Total Residential Sales - MWh	18,233	16,594	15,238	13,223	13,259	13,997	19,386	17,262	14,770	13,185	15,759	18,615	189,521
Use per Small Comm & Ind Customer - kWh	2,310.4	2,240.9	2,138.1	1,908.5	2,015.4	1,943.0	2,523.2	2,327.3	2,138.6	1,905.1	2,100.2	2,343.5	25,894.9
# of Small Comm & Ind Customers	5,129	5,127	5,133	5,181	5,249	5,280	5,291	5,298	5,283	5,226	5,198	5,185	5,215
Total Small Comm & Ind Sales - MWh	11,850	11,489	10,975	9,888	10,579	10,259	13,350	12,330	11,298	9,956	10,917	12,151	135,042
General Large Comm & Ind Sales	21,496	20,467	19,921	21,298	20,796	16,796	20,867	20,465	21,089	21,860	22,525	25,180	252,760
Encore Oil Sales	20,509	20,093	20,899	20,420	19,644	21,745	20,989	20,659	21,376	22,386	22,795	23,384	254,899
TransCanada Keystone Pipeline	10,390	9,384	10,390	10,055	10,390	10,055	10,390	10,390	10,055	10,390	10,055	10,390	122,334
Westmoreland Coal - MT Sales	259	258	237	210	178	165	146	139	146	178	227	273	2,416
Total Sales (Residential, SC&I and LC&I)	82,737	78,285	77,660	75,094	74,846	73,017	85,128	81,245	78,734	77,955	82,278	89,993	956,972
Other Public Sales	515	528	480	502	595	668	890	785	703	522	496	538	7,222
Street & Highway Lighting Sales	632	578	621	592	621	570	588	613	588	626	606	618	7,253
Interdepartmental Sales	17	17	15	13	13	12	15	13	14	13	15	18	175
Total Billed Sales - MWh	83,901	79,408	78,776	76,201	76,075	74,267	86,621	82,656	80,039	79,116	83,395	91,167	971,622
Company Use	40	37	33	29	26	25	31	29	26	25	29	34	364
Total Energy	83,941	79,445	78,809	76,230	76,101	74,292	86,652	82,685	80,065	79,141	83,424	91,201	971,986
Total Requirements (Energy + Losses)	90,581	85,729	85,043	82,260	82,121	80,168	93,506	89,225	86,398	85,401	90,023	98,415	1,048,870
# of Large Comm & Ind Customers	255	255	255	257	261	263	264	265	263	260	259	258	260
# of Other Public Customers	101	101	102	104	107	108	108	108	106	104	103	102	105
# of Street & Highway Lighting Customers	93	91	90	90	90	90	83	83	83	83	83	84	87
Peak Demand Net of DSM Programs	115.6	117.3	109.0	104.9	93.7	136.5	153.2	129.6	114.8	103.6	123.0	135.4	153.2

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

MONTANA YEAR 2018

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	952.0	866.6	796.4	693.2	694.9	733.2	1,014.7	903.2	772.5	689.1	822.5	971.3	9,910.5
# of Residential Customers	19,414	19,411	19,395	19,336	19,342	19,351	19,366	19,373	19,380	19,395	19,421	19,426	19,384
Total Residential Sales - MWh	18,482	16,821	15,446	13,403	13,440	14,188	19,651	17,497	14,971	13,365	15,974	18,868	192,106
Use per Small Comm & Ind Customer - kWh	2,345.0	2,274.0	2,170.4	1,937.1	2,045.5	1,972.1	2,560.9	2,362.2	2,170.6	1,933.3	2,131.6	2,378.5	26,282.0
# of Small Comm & Ind Customers	5,179	5,178	5,183	5,232	5,301	5,332	5,343	5,350	5,335	5,278	5,249	5,236	5,266
Total Small Comm & Ind Sales - MWh	12,145	11,775	11,249	10,135	10,843	10,515	13,683	12,638	11,580	10,204	11,189	12,454	138,410
General Large Comm & Ind Sales	21,888	20,841	20,286	21,687	21,175	17,102	21,247	20,838	21,473	22,258	22,936	25,639	257,370
Encore Oil Sales	20,853	20,430	21,250	20,763	19,974	22,110	21,341	21,006	21,735	22,762	23,179	23,778	259,181
TransCanada Keystone Pipeline	10,390	9,384	10,390	10,055	10,390	10,055	10,390	10,390	10,055	10,390	10,055	10,390	122,334
Westmoreland Coal - MT Sales	259	258	237	210	178	165	146	139	146	178	227	273	2,416
Total Sales (Residential, SC&I and LC&I)	84,017	79,509	78,858	76,253	76,000	74,135	86,458	82,508	79,960	79,157	83,560	91,402	971,817
Other Public Sales	516	529	481	504	597	669	893	788	704	523	498	540	7,242
Street & Highway Lighting Sales	632	578	621	592	621	570	588	613	588	626	607	618	7,254
Interdepartmental Sales	17	17	15	13	13	11	13	12	14	12	15	17	169
Total Billed Sales - MWh	85,182	80,633	79,975	77,362	77,231	75,385	87,952	83,921	81,266	80,318	84,680	92,577	986,482
Company Use	40	37	33	29	26	25	31	29	26	25	29	34	364
Total Energy	85,222	80,670	80,008	77,391	77,257	75,410	87,983	83,950	81,292	80,343	84,709	92,611	986,846
Total Requirements (Energy + Losses)	91,963	87,051	86,337	83,513	83,368	81,375	94,942	90,590	87,722	86,698	91,409	99,937	1,064,905
# of Large Comm & Ind Customers	256	256	257	258	262	264	266	266	264	262	260	259	261
# of Other Public Customers	101	101	102	104	107	108	108	108	106	104	103	102	105
# of Street & Highway Lighting Customers	93	91	90	90	90	90	83	83	83	83	83	84	87
Peak Demand Net of DSM Programs	117.4	119.1	110.7	106.6	95.1	138.5	155.5	131.5	116.5	105.2	125.0	137.6	155.5

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

MONTANA YEAR 2019

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	961.3	875.0	804.1	699.9	701.6	740.4	1,024.6	912.0	780.1	695.8	830.6	980.7	10,007.0
# of Residential Customers	19,486	19,483	19,468	19,408	19,414	19,423	19,438	19,446	19,452	19,467	19,494	19,498	19,456
Total Residential Sales - MWh	18,731	17,048	15,654	13,584	13,621	14,380	19,916	17,734	15,174	13,546	16,191	19,121	194,700
Use per Small Comm & Ind Customer - kWh	2,379.9	2,308.1	2,202.7	1,965.7	2,076.0	2,001.7	2,599.0	2,397.4	2,203.3	1,962.1	2,163.2	2,414.2	26,674.0
# of Small Comm & Ind Customers	5,230	5,229	5,234	5,284	5,353	5,384	5,396	5,403	5,387	5,330	5,301	5,287	5,318
Total Small Comm & Ind Sales - MWh	12,447	12,069	11,529	10,387	11,113	10,777	14,024	12,953	11,869	10,458	11,467	12,764	141,857
General Large Comm & Ind Sales	22,288	21,221	20,655	22,083	21,562	17,414	21,635	21,218	21,865	22,665	23,355	26,108	262,069
Encore Oil Sales	21,203	20,774	21,607	21,112	20,309	22,482	21,699	21,358	22,100	23,145	23,568	24,102	263,459
TransCanada Keystone Pipeline	10,390	9,384	10,390	10,055	10,390	10,055	10,390	10,390	10,055	10,390	10,055	10,390	122,334
Westmoreland Coal - MT Sales	259	258	237	210	178	165	146	139	146	178	227	273	2,416
Total Sales (Residential, SC&I and LC&I)	85,318	80,754	80,072	77,431	77,173	75,273	87,810	83,792	81,209	80,382	84,863	92,758	986,835
Other Public Sales	518	531	482	505	598	672	895	790	706	525	499	541	7,262
Street & Highway Lighting Sales	632	578	621	592	621	570	588	613	588	626	607	618	7,254
Interdepartmental Sales	16	16	15	13	13	11	13	12	13	12	15	17	166
Total Billed Sales - MWh	86,484	81,879	81,190	78,541	78,405	76,526	89,306	85,207	82,516	81,545	85,984	93,934	1,001,517
Company Use	40	37	33	29	26	25	31	29	26	25	29	34	364
Total Energy	86,524	81,916	81,223	78,570	78,431	76,551	89,337	85,236	82,542	81,570	86,013	93,968	1,001,881
Total Requirements (Energy + Losses)	93,368	88,396	87,648	84,785	84,635	82,606	96,404	91,978	89,071	88,022	92,817	101,401	1,081,131
# of Large Comm & Ind Customers	257	257	258	260	263	266	267	267	266	263	261	260	262
# of Other Public Customers	101	101	102	104	107	108	108	108	106	104	103	102	105
# of Street & Highway Lighting Customers	93	91	90	90	90	90	83	83	83	83	83	84	87
Peak Demand Net of DSM Programs	119.2	120.9	112.5	108.2	96.5	140.6	157.9	133.5	118.3	106.7	126.9	139.7	157.9

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

MONTANA YEAR 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	970.6	883.5	812.0	706.7	708.5	747.6	1,034.6	920.9	787.7	702.6	838.6	990.2	10,104.4
# of Residential Customers	19,557	19,554	19,538	19,479	19,484	19,494	19,508	19,516	19,523	19,538	19,565	19,569	19,527
Total Residential Sales - MWh	18,982	17,276	15,864	13,766	13,804	14,573	20,183	17,972	15,378	13,727	16,407	19,377	197,309
Use per Small Comm & Ind Customer - kWh	2,415.8	2,342.6	2,235.3	1,995.1	2,106.9	2,031.6	2,637.7	2,433.3	2,236.0	1,991.6	2,195.6	2,450.3	27,072.8
# of Small Comm & Ind Customers	5,281	5,280	5,286	5,336	5,406	5,437	5,449	5,456	5,440	5,382	5,353	5,339	5,370
Total Small Comm & Ind Sales - MWh	12,758	12,369	11,816	10,646	11,390	11,046	14,373	13,276	12,164	10,719	11,753	13,082	145,392
General Large Comm & Ind Sales	22,695	21,608	21,033	22,487	21,956	17,733	22,031	21,606	22,265	23,079	23,782	26,585	266,860
Encore Oil Sales	21,381	20,948	21,788	21,289	20,480	22,671	21,882	21,538	22,286	23,339	23,766	24,305	265,673
TransCanada Keystone Pipeline	10,390	9,384	10,390	10,055	10,390	10,055	10,390	10,390	10,055	10,390	10,055	10,390	122,334
Westmoreland Coal - MT Sales	259	258	237	210	178	165	146	139	146	178	227	273	2,416
Total Sales (Residential, SC&I and LC&I)	86,465	81,843	81,128	78,453	78,198	76,243	89,005	84,921	82,294	81,432	85,990	94,012	999,984
Other Public Sales	519	533	484	507	600	673	898	792	709	527	501	543	7,286
Street & Highway Lighting Sales	632	578	622	592	621	570	588	613	588	626	607	618	7,255
Interdepartmental Sales	16	15	15	13	13	11	13	12	13	12	14	17	164
Total Billed Sales - MWh	87,632	82,969	82,249	79,565	79,432	77,497	90,504	86,338	83,604	82,597	87,112	95,190	1,014,689
Company Use	40	37	33	29	26	25	31	29	26	25	29	34	364
Total Energy	87,672	83,006	82,282	79,594	79,458	77,522	90,535	86,367	83,630	82,622	87,141	95,224	1,015,053
Total Requirements (Energy + Losses)	94,607	89,572	88,791	85,890	85,743	83,654	97,696	93,199	90,245	89,157	94,034	102,756	1,095,344
# of Large Comm & Ind Customers	258	259	259	261	265	267	268	268	267	264	262	261	263
# of Other Public Customers	101	101	102	104	107	108	108	108	106	104	103	102	105
# of Street & Highway Lighting Customers	93	91	90	90	90	90	83	83	83	83	83	84	87
Peak Demand Net of DSM Programs	121.1	122.8	114.2	109.9	97.9	142.6	160.2	135.4	120.0	108.3	128.8	141.8	160.2

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APPENDIX E

Monthly Forecasts - North Dakota (2011-2020)

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

NORTH DAKOTA YEAR 2011

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	983.1	906.8	826.6	717.3	691.3	735.8	966.6	886.4	755.9	706.0	849.3	1,000.1	10,025.3
# of Residential Customers	64,479	64,491	64,508	64,510	64,565	64,652	64,693	64,744	64,764	64,805	64,836	64,835	64,657
Total Residential Sales - MWh	63,389	58,480	53,322	46,273	44,634	47,571	62,532	57,389	48,955	45,752	55,065	64,842	648,205
Use per Small Comm & Ind Customer - kWh	3,131.8	2,962.4	2,939.2	2,611.2	2,633.7	2,650.7	3,186.0	3,081.6	2,807.1	2,672.9	2,963.3	3,148.0	34,786.1
# of Small Comm & Ind Customers	10,196	10,185	10,190	10,259	10,355	10,410	10,417	10,443	10,431	10,369	10,345	10,351	10,329
Total Small Comm & Ind Sales - MWh	31,932	30,172	29,950	26,788	27,272	27,594	33,189	32,181	29,281	27,715	30,655	32,585	359,314
General Large Comm & Ind Sales	39,810	39,304	38,397	38,459	38,400	39,563	44,395	43,654	41,568	39,068	39,699	41,821	484,138
Sabin Metals Sales	1,474	1,513	1,561	1,595	1,585	1,506	1,613	1,569	1,562	1,573	1,273	1,228	18,052
Tesoro Refinery Sales	4,433	4,466	4,893	4,870	5,056	5,305	5,558	5,458	5,296	4,876	4,800	4,828	59,839
Westmoreland Coal - ND Sales	1,921	1,825	1,707	1,602	1,445	1,319	1,301	1,328	1,439	1,566	1,743	1,892	19,088
Total Sales (Residential, SC&I and LC&I)	142,959	135,760	129,830	119,587	118,392	122,858	148,588	141,579	128,101	120,550	133,235	147,196	1,588,636
Other Public Sales	2,860	2,786	2,825	2,620	2,979	3,264	3,743	3,602	3,056	2,708	2,678	2,835	35,956
Street & Highway Lighting Sales	1,853	1,738	1,752	1,658	1,646	1,522	1,598	1,638	1,677	1,770	1,864	1,874	20,590
Interdepartmental Sales	22	22	20	19	18	16	18	17	18	18	21	23	232
Total Billed Sales - MWh	147,694	140,306	134,427	123,884	123,035	127,660	153,947	146,836	132,852	125,046	137,798	151,928	1,645,414
Company Use	628	586	595	595	615	636	694	699	595	600	630	621	7,494
Total Energy	148,322	140,892	135,022	124,479	123,650	128,296	154,641	147,535	133,447	125,646	138,428	152,549	1,652,908
Total Requirements (Energy + Losses)	160,055	152,037	145,703	134,325	133,430	138,444	166,873	159,205	144,003	135,585	149,378	164,615	1,783,653
# of Large Comm & Ind Customers	723	726	727	730	731	731	731	731	731	733	732	732	730
# of Other Public Customers	704	704	705	708	713	713	713	712	710	706	702	699	707
# of Street & Highway Lighting Customers	516	515	514	516	516	518	505	507	508	511	512	514	513
Peak Demand Net of DSM Programs	299.5	284.8	260.3	240.5	232.7	310.2	347.4	344.9	290.0	243.2	273.4	307.0	347.4
Interruptible Demand	-	-	-	-	-	-	7.6	-	-	-	-	-	7.6
Peak Demand Net of all DSM	299.5	284.8	260.3	240.5	232.7	310.2	339.8	344.9	290.0	243.2	273.4	307.0	339.8

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

NORTH DAKOTA YEAR 2012

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	992.7	915.6	834.6	724.3	698.0	742.9	976.0	895.0	763.3	712.9	857.6	1,009.8	10,122.8
# of Residential Customers	64,770	64,782	64,799	64,801	64,856	64,944	64,985	65,037	65,057	65,097	65,129	65,128	64,949
Total Residential Sales - MWh	64,297	59,314	54,081	46,935	45,270	48,247	63,425	58,208	49,658	46,408	55,855	65,766	657,465
Use per Small Comm & Ind Customer - kWh	3,178.1	3,006.2	2,982.7	2,649.7	2,672.9	2,690.0	3,233.2	3,127.3	2,848.7	2,712.6	3,007.3	3,194.5	35,301.4
# of Small Comm & Ind Customers	10,298	10,287	10,292	10,362	10,458	10,514	10,521	10,547	10,535	10,472	10,448	10,455	10,432
Total Small Comm & Ind Sales - MWh	32,728	30,925	30,698	27,456	27,953	28,283	34,017	32,984	30,011	28,406	31,420	33,398	368,279
General Large Comm & Ind Sales	42,841	42,296	41,320	41,387	41,324	42,576	47,775	46,977	44,733	42,042	42,722	44,310	520,303
Sabin Metals Sales	1,549	1,590	1,641	1,677	1,666	1,583	1,695	1,649	1,642	1,654	1,338	1,289	18,973
Tesoro Refinery Sales	4,558	4,592	5,030	5,007	5,198	5,455	5,714	5,612	5,445	5,013	4,935	4,962	61,521
Westmoreland Coal - ND Sales	1,921	1,825	1,707	1,602	1,445	1,319	1,301	1,328	1,439	1,566	1,743	1,892	19,088
Total Sales (Residential, SC&I and LC&I)	147,894	140,542	134,477	124,064	122,856	127,463	153,927	146,758	132,928	125,089	138,013	151,617	1,645,629
Other Public Sales	2,868	2,794	2,833	2,628	2,987	3,273	3,753	3,612	3,065	2,716	2,686	2,843	36,058
Street & Highway Lighting Sales	1,853	1,738	1,752	1,658	1,646	1,522	1,598	1,639	1,677	1,770	1,864	1,874	20,591
Interdepartmental Sales	22	22	20	19	18	16	18	17	18	18	21	23	232
Total Billed Sales - MWh	152,637	145,096	139,082	128,369	127,507	132,274	159,296	152,026	137,688	129,593	142,584	156,357	1,702,510
Company Use	628	586	595	595	615	636	694	699	595	600	630	621	7,494
Total Energy	153,265	145,682	139,677	128,964	128,122	132,910	159,990	152,725	138,283	130,193	143,214	156,978	1,710,004
Total Requirements (Energy + Losses)	165,388	157,206	150,726	139,165	138,256	143,423	172,646	164,806	149,221	140,491	154,542	169,395	1,845,265
# of Large Comm & Ind Customers	727	729	730	733	735	734	735	735	735	736	736	735	733
# of Other Public Customers	704	704	705	708	713	713	713	712	710	706	702	699	707
# of Street & Highway Lighting Customers	516	515	514	516	516	518	505	507	508	511	512	514	513
Peak Demand Net of DSM Programs	304.3	289.3	264.5	244.3	241.6	322.1	360.6	358.0	301.1	252.5	285.0	320.0	360.6
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	304.3	289.3	264.5	244.3	241.6	322.1	350.3	358.0	301.1	252.5	285.0	320.0	350.3

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

NORTH DAKOTA YEAR 2013

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,002.3	924.5	842.8	731.4	704.8	750.2	985.5	903.7	770.8	719.8	866.0	1,019.6	10,221.5
# of Residential Customers	65,059	65,071	65,088	65,090	65,145	65,233	65,275	65,326	65,347	65,387	65,419	65,418	65,238
Total Residential Sales - MWh	65,209	60,158	54,856	47,607	45,914	48,938	64,329	59,035	50,370	47,066	56,653	66,700	666,834
Use per Small Comm & Ind Customer - kWh	3,225.0	3,050.4	3,026.5	2,688.5	2,712.0	2,729.3	3,280.5	3,173.3	2,890.7	2,752.4	3,051.4	3,241.3	35,819.6
# of Small Comm & Ind Customers	10,402	10,391	10,396	10,467	10,564	10,621	10,628	10,654	10,641	10,578	10,554	10,561	10,538
Total Small Comm & Ind Sales - MWh	33,546	31,697	31,464	28,141	28,650	28,988	34,865	33,808	30,760	29,115	32,205	34,231	377,470
General Large Comm & Ind Sales	44,694	44,126	43,107	43,177	43,111	44,417	49,841	49,008	46,667	43,860	44,569	45,706	542,283
Sabin Metals Sales	1,625	1,667	1,721	1,758	1,747	1,660	1,779	1,729	1,722	1,734	1,403	1,350	19,895
Tesoro Refinery Sales	4,682	4,718	5,168	5,144	5,341	5,604	5,871	5,766	5,594	5,150	5,071	5,097	63,206
Westmoreland Coal - ND Sales	1,921	1,825	1,707	1,602	1,445	1,319	1,301	1,328	1,439	1,566	1,743	1,892	19,088
Total Sales (Residential, SC&I and LC&I)	151,677	144,191	138,023	127,429	126,208	130,926	157,986	150,674	136,552	128,491	141,644	154,976	1,688,776
Other Public Sales	2,876	2,802	2,841	2,636	2,996	3,282	3,763	3,622	3,074	2,724	2,694	2,851	36,161
Street & Highway Lighting Sales	1,853	1,739	1,752	1,658	1,646	1,523	1,599	1,639	1,677	1,770	1,864	1,875	20,595
Interdepartmental Sales	22	22	20	19	18	16	18	17	18	18	20	23	231
Total Billed Sales - MWh	156,428	148,754	142,636	131,742	130,868	135,747	163,366	155,952	141,321	133,003	146,222	159,725	1,745,763
Company Use	628	586	595	595	615	636	694	699	595	600	630	621	7,494
Total Energy	157,056	149,340	143,231	132,337	131,483	136,383	164,060	156,651	141,916	133,603	146,852	160,346	1,753,257
Total Requirements (Energy + Losses)	169,479	161,153	154,561	142,805	141,884	147,171	177,037	169,042	153,141	144,171	158,468	173,030	1,891,942
# of Large Comm & Ind Customers	730	733	734	737	738	737	738	738	738	740	739	738	737
# of Other Public Customers	704	704	705	708	713	713	713	712	710	706	702	699	707
# of Street & Highway Lighting Customers	516	515	514	516	516	518	505	507	508	511	512	514	513
Peak Demand Net of DSM Programs	317.2	301.6	275.7	254.7	250.9	334.5	374.6	371.9	312.7	262.2	297.2	333.7	374.6
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	317.2	301.6	275.7	254.7	250.9	334.5	364.3	371.9	312.7	262.2	297.2	333.7	364.3

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

NORTH DAKOTA YEAR 2014

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,012.1	933.5	851.0	738.5	711.7	757.5	995.2	912.6	778.3	726.8	874.4	1,029.5	10,321.2
# of Residential Customers	65,339	65,351	65,368	65,370	65,426	65,514	65,556	65,607	65,628	65,669	65,701	65,700	65,519
Total Residential Sales - MWh	66,130	61,005	55,628	48,276	46,564	49,627	65,241	59,873	51,078	47,728	57,449	67,638	676,237
Use per Small Comm & Ind Customer - kWh	3,272.3	3,095.2	3,071.0	2,728.0	2,751.9	2,769.6	3,328.6	3,219.8	2,933.1	2,792.6	3,096.1	3,288.8	36,345.2
# of Small Comm & Ind Customers	10,507	10,496	10,501	10,573	10,671	10,728	10,736	10,762	10,749	10,686	10,661	10,668	10,645
Total Small Comm & Ind Sales - MWh	34,382	32,487	32,249	28,843	29,365	29,712	35,736	34,652	31,528	29,842	33,008	35,085	386,889
General Large Comm & Ind Sales	45,573	44,994	43,955	44,027	43,959	45,290	50,821	49,972	47,586	44,723	45,446	46,606	552,952
Sabin Metals Sales	1,700	1,744	1,800	1,840	1,828	1,737	1,861	1,809	1,802	1,814	1,468	1,392	20,795
Tesoro Refinery Sales	4,808	4,844	5,306	5,282	5,483	5,754	6,027	5,919	5,743	5,288	5,206	5,231	64,891
Westmoreland Coal - ND Sales	1,921	1,825	1,707	1,602	1,445	1,319	1,301	1,328	1,439	1,566	1,743	1,892	19,088
Total Sales (Residential, SC&I and LC&I)	154,514	146,899	140,645	129,870	128,644	133,439	160,987	153,553	139,176	130,961	144,320	157,844	1,720,852
Other Public Sales	2,884	2,810	2,849	2,643	3,005	3,292	3,775	3,633	3,083	2,731	2,701	2,858	36,264
Street & Highway Lighting Sales	1,854	1,739	1,752	1,658	1,646	1,523	1,599	1,639	1,678	1,770	1,864	1,875	20,597
Interdepartmental Sales	22	22	20	18	18	16	18	17	17	17	20	23	228
Total Billed Sales - MWh	159,274	151,470	145,266	134,189	133,313	138,270	166,379	158,842	143,954	135,479	148,905	162,600	1,777,941
Company Use	628	586	595	595	615	636	694	699	595	600	630	621	7,494
Total Energy	159,902	152,056	145,861	134,784	133,928	138,906	167,073	159,541	144,549	136,079	149,535	163,221	1,785,435
Total Requirements (Energy + Losses)	172,550	164,084	157,399	145,445	144,521	149,893	180,289	172,161	155,983	146,843	161,363	176,132	1,926,663
# of Large Comm & Ind Customers	734	736	737	740	742	741	742	742	742	743	743	742	740
# of Other Public Customers	704	704	705	708	713	713	713	712	710	706	702	699	707
# of Street & Highway Lighting Customers	516	515	514	516	516	518	505	507	508	511	512	514	513
Peak Demand Net of DSM Programs	330.8	314.5	287.5	265.6	255.1	340.0	380.7	378.0	317.9	266.6	302.5	339.7	380.7
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	330.8	314.5	287.5	265.6	255.1	340.0	370.4	378.0	317.9	266.6	302.5	339.7	370.4

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

NORTH DAKOTA YEAR 2015

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,022.0	942.6	859.3	745.7	718.6	764.9	1,004.9	921.5	785.9	733.9	883.0	1,039.4	10,421.8
# of Residential Customers	65,613	65,625	65,642	65,644	65,700	65,789	65,831	65,883	65,904	65,945	65,977	65,975	65,794
Total Residential Sales - MWh	67,057	61,858	56,406	48,951	47,212	50,322	66,154	60,711	51,794	48,397	58,258	68,574	685,693
Use per Small Comm & Ind Customer - kWh	3,321.3	3,141.6	3,117.0	2,769.1	2,793.2	2,811.1	3,378.8	3,268.2	2,977.2	2,834.7	3,142.7	3,338.6	36,891.6
# of Small Comm & Ind Customers	10,610	10,599	10,604	10,676	10,775	10,833	10,840	10,867	10,854	10,790	10,765	10,771	10,749
Total Small Comm & Ind Sales - MWh	35,239	33,298	33,053	29,563	30,097	30,453	36,626	35,515	32,314	30,586	33,831	35,960	396,535
General Large Comm & Ind Sales	46,471	45,880	44,821	44,894	44,825	46,183	51,823	50,957	48,523	45,604	46,341	47,524	563,846
Sabin Metals Sales	1,738	1,783	1,840	1,881	1,868	1,776	1,902	1,849	1,842	1,855	1,501	1,404	21,239
Tesoro Refinery Sales	4,932	4,970	5,444	5,419	5,626	5,903	6,184	6,073	5,893	5,425	5,341	5,365	66,575
Westmoreland Coal - ND Sales	1,921	1,825	1,707	1,602	1,445	1,319	1,301	1,328	1,439	1,566	1,743	1,892	19,088
Total Sales (Residential, SC&I and LC&I)	157,358	149,614	143,271	132,310	131,073	135,956	163,990	156,433	141,805	133,433	147,015	160,719	1,752,976
Other Public Sales	2,892	2,818	2,857	2,650	3,013	3,301	3,785	3,643	3,091	2,739	2,708	2,867	36,364
Street & Highway Lighting Sales	1,854	1,739	1,753	1,659	1,647	1,523	1,599	1,639	1,678	1,771	1,865	1,875	20,602
Interdepartmental Sales	21	21	19	18	18	16	18	16	17	17	20	22	223
Total Billed Sales - MWh	162,125	154,192	147,900	136,637	135,751	140,796	169,392	161,731	146,591	137,960	151,608	165,483	1,810,165
Company Use	628	586	595	595	615	636	694	699	595	600	630	621	7,494
Total Energy	162,753	154,778	148,495	137,232	136,366	141,432	170,086	162,430	147,186	138,560	152,238	166,104	1,817,659
Total Requirements (Energy + Losses)	175,626	167,021	160,241	148,087	147,153	152,619	183,539	175,278	158,828	149,520	164,280	179,243	1,961,435
# of Large Comm & Ind Customers	736	739	740	743	744	744	744	744	744	746	745	745	743
# of Other Public Customers	704	704	705	708	713	713	713	712	710	706	702	699	707
# of Street & Highway Lighting Customers	516	515	514	516	516	518	505	507	508	511	512	514	513
Peak Demand Net of DSM Programs	336.7	320.1	292.6	270.4	262.3	349.6	391.5	388.7	326.8	274.1	311.8	350.1	391.5
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	336.7	320.1	292.6	270.4	262.3	349.6	381.2	388.7	326.8	274.1	311.8	350.1	381.2

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

NORTH DAKOTA YEAR 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,032.0	951.9	867.7	753.0	725.7	772.4	1,014.7	930.4	793.5	741.1	891.6	1,049.5	10,523.6
# of Residential Customers	65,879	65,891	65,908	65,910	65,966	66,055	66,098	66,150	66,170	66,212	66,244	66,243	66,061
Total Residential Sales - MWh	67,987	62,722	57,188	49,630	47,872	51,021	67,070	61,546	52,506	49,070	59,063	69,522	695,196
Use per Small Comm & Ind Customer - kWh	3,370.6	3,188.0	3,163.1	2,810.2	2,834.7	2,852.8	3,428.9	3,316.4	3,021.3	2,876.8	3,189.3	3,387.8	37,438.1
# of Small Comm & Ind Customers	10,716	10,705	10,710	10,782	10,882	10,941	10,948	10,976	10,962	10,897	10,872	10,879	10,856
Total Small Comm & Ind Sales - MWh	36,119	34,128	33,877	30,300	30,847	31,212	37,540	36,401	33,120	31,348	34,674	36,856	406,422
General Large Comm & Ind Sales	47,388	46,785	45,705	45,779	45,709	47,094	52,845	51,962	49,480	46,503	47,255	48,462	574,967
Sabin Metals Sales	1,738	1,783	1,840	1,881	1,868	1,776	1,902	1,849	1,842	1,855	1,501	1,404	21,239
Tesoro Refinery Sales	5,057	5,095	5,582	5,556	5,769	6,053	6,340	6,226	6,042	5,562	5,476	5,499	68,257
Westmoreland Coal - ND Sales	1,921	1,825	1,707	1,602	1,445	1,319	1,301	1,328	1,439	1,566	1,743	1,892	19,088
Total Sales (Residential, SC&I and LC&I)	160,210	152,338	145,899	134,748	133,510	138,475	166,998	159,312	144,429	135,904	149,712	163,635	1,785,169
Other Public Sales	2,901	2,826	2,866	2,658	3,021	3,310	3,795	3,653	3,100	2,746	2,716	2,875	36,467
Street & Highway Lighting Sales	1,854	1,739	1,753	1,659	1,647	1,523	1,599	1,640	1,678	1,771	1,865	1,876	20,604
Interdepartmental Sales	21	21	19	18	17	15	17	16	17	17	20	22	220
Total Billed Sales - MWh	164,986	156,924	150,537	139,083	138,195	143,323	172,409	164,621	149,224	140,438	154,313	168,408	1,842,460
Company Use	628	586	595	595	615	636	694	699	595	600	630	621	7,494
Total Energy	165,614	157,510	151,132	139,678	138,810	143,959	173,103	165,320	149,819	141,038	154,943	169,029	1,849,954
Total Requirements (Energy + Losses)	178,714	169,969	163,087	150,727	149,789	155,346	186,795	178,397	161,670	152,194	167,199	182,399	1,996,286
# of Large Comm & Ind Customers	740	742	743	746	748	747	748	748	748	749	749	748	746
# of Other Public Customers	704	704	705	708	713	713	713	712	710	706	702	699	707
# of Street & Highway Lighting Customers	516	515	514	516	516	518	505	507	508	511	512	514	513
Peak Demand Net of DSM Programs	347.0	329.9	301.6	278.6	266.3	355.0	397.5	394.7	331.9	278.3	316.8	355.7	397.5
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	347.0	329.9	301.6	278.6	266.3	355.0	387.2	394.7	331.9	278.3	316.8	355.7	387.2

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

NORTH DAKOTA YEAR 2017

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,042.0	961.1	876.1	760.3	732.7	779.9	1,024.5	939.5	801.3	748.3	900.3	1,059.6	10,625.7
# of Residential Customers	66,136	66,149	66,166	66,168	66,224	66,313	66,356	66,408	66,429	66,470	66,503	66,501	66,319
Total Residential Sales - MWh	68,914	63,576	57,968	50,308	48,522	51,718	67,982	62,390	53,230	49,740	59,873	70,465	704,683
Use per Small Comm & Ind Customer - kWh	3,420.7	3,235.5	3,210.2	2,851.7	2,876.5	2,895.0	3,479.8	3,365.7	3,066.2	2,919.3	3,236.5	3,438.2	37,993.4
# of Small Comm & Ind Customers	10,822	10,811	10,816	10,890	10,991	11,050	11,057	11,085	11,071	11,006	10,981	10,987	10,964
Total Small Comm & Ind Sales - MWh	37,019	34,979	34,722	31,055	31,616	31,990	38,476	37,309	33,946	32,130	35,540	37,775	416,557
General Large Comm & Ind Sales	48,323	47,709	46,607	46,683	46,611	48,023	53,888	52,988	50,456	47,422	48,189	49,420	586,319
Sabin Metals Sales	1,738	1,783	1,840	1,881	1,868	1,776	1,902	1,849	1,842	1,855	1,501	1,404	21,239
Tesoro Refinery Sales	5,182	5,221	5,720	5,694	5,911	6,202	6,497	6,380	6,191	5,700	5,612	5,634	69,944
Westmoreland Coal - ND Sales	1,921	1,825	1,707	1,602	1,445	1,319	1,301	1,328	1,439	1,566	1,743	1,892	19,088
Total Sales (Residential, SC&I and LC&I)	163,097	155,093	148,564	137,223	135,973	141,028	170,046	162,244	147,104	138,413	152,458	166,590	1,817,830
Other Public Sales	2,909	2,834	2,873	2,665	3,029	3,319	3,806	3,663	3,108	2,754	2,724	2,883	36,567
Street & Highway Lighting Sales	1,854	1,740	1,753	1,659	1,647	1,524	1,600	1,640	1,678	1,771	1,865	1,876	20,607
Interdepartmental Sales	21	21	19	18	17	15	17	16	17	17	19	22	219
Total Billed Sales - MWh	167,881	159,688	153,209	141,565	140,666	145,886	175,469	167,563	151,907	142,955	157,066	171,371	1,875,223
Company Use	628	586	595	595	615	636	694	699	595	600	630	621	7,494
Total Energy	168,509	160,274	153,804	142,160	141,281	146,522	176,163	168,262	152,502	143,555	157,696	171,992	1,882,717
Total Requirements (Energy + Losses)	181,838	172,951	165,970	153,404	152,457	158,111	190,097	181,572	164,564	154,910	170,169	185,596	2,031,639
# of Large Comm & Ind Customers	743	746	747	750	751	751	751	751	751	753	752	752	750
# of Other Public Customers	704	704	705	708	713	713	713	712	710	706	702	699	707
# of Street & Highway Lighting Customers	516	515	514	516	516	518	505	507	508	511	512	514	513
Peak Demand Net of DSM Programs	352.6	335.2	306.4	283.1	270.3	360.3	403.5	400.6	336.8	282.5	321.7	361.2	403.5
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	352.6	335.2	306.4	283.1	270.3	360.3	393.2	400.6	336.8	282.5	321.7	361.2	393.2

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

NORTH DAKOTA YEAR 2018

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,052.2	970.5	884.7	767.7	739.9	787.5	1,034.5	948.7	809.1	755.6	909.1	1,069.9	10,729.5
# of Residential Customers	66,385	66,398	66,415	66,417	66,474	66,563	66,606	66,659	66,679	66,721	66,753	66,752	66,569
Total Residential Sales - MWh	69,850	64,439	58,757	50,988	49,184	52,418	68,904	63,239	53,950	50,414	60,685	71,418	714,249
Use per Small Comm & Ind Customer - kWh	3,471.7	3,283.7	3,258.0	2,894.4	2,919.6	2,938.2	3,531.7	3,416.0	3,112.0	2,963.0	3,284.8	3,489.6	38,560.7
# of Small Comm & Ind Customers	10,929	10,918	10,923	10,997	11,099	11,159	11,166	11,194	11,180	11,114	11,089	11,095	11,072
Total Small Comm & Ind Sales - MWh	37,942	35,851	35,587	31,830	32,405	32,787	39,435	38,239	34,792	32,931	36,425	38,717	426,941
General Large Comm & Ind Sales	49,279	48,652	47,528	47,606	47,532	48,973	54,954	54,035	51,454	48,359	49,141	50,397	597,910
Sabin Metals Sales	1,738	1,783	1,840	1,881	1,868	1,776	1,902	1,849	1,842	1,855	1,501	1,404	21,239
Tesoro Refinery Sales	5,307	5,347	5,857	5,831	6,053	6,351	6,653	6,534	6,340	5,837	5,747	5,767	71,624
Westmoreland Coal - ND Sales	1,921	1,825	1,707	1,602	1,445	1,319	1,301	1,328	1,439	1,566	1,743	1,892	19,088
Total Sales (Residential, SC&I and LC&I)	166,037	157,897	151,276	139,738	138,487	143,624	173,149	165,224	149,817	140,962	155,242	169,595	1,851,051
Other Public Sales	2,917	2,841	2,881	2,673	3,038	3,329	3,817	3,674	3,117	2,762	2,731	2,891	36,671
Street & Highway Lighting Sales	1,855	1,740	1,753	1,659	1,647	1,524	1,600	1,640	1,679	1,771	1,865	1,876	20,609
Interdepartmental Sales	21	21	19	18	17	15	17	16	17	17	19	21	218
Total Billed Sales - MWh	170,830	162,499	155,929	144,088	143,189	148,492	178,583	170,554	154,630	145,512	159,857	174,383	1,908,549
Company Use	628	586	595	595	615	636	694	699	595	600	630	621	7,494
Total Energy	171,458	163,085	156,524	144,683	143,804	149,128	179,277	171,253	155,225	146,112	160,487	175,004	1,916,043
Total Requirements (Energy + Losses)	185,021	175,985	168,905	156,128	155,179	160,924	193,458	184,800	167,503	157,670	173,182	188,847	2,067,602
# of Large Comm & Ind Customers	747	749	750	753	755	754	755	755	755	756	756	755	753
# of Other Public Customers	704	704	705	708	713	713	713	712	710	706	702	699	707
# of Street & Highway Lighting Customers	516	515	514	516	516	518	505	507	508	511	512	514	513
Peak Demand Net of DSM Programs	358.1	340.5	311.2	287.5	274.3	365.7	409.5	406.5	341.8	286.7	326.8	366.9	409.5
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	358.1	340.5	311.2	287.5	274.3	365.7	399.2	406.5	341.8	286.7	326.8	366.9	399.2

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

NORTH DAKOTA YEAR 2019

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,062.4	980.0	893.3	775.2	747.1	795.2	1,044.6	957.9	817.0	763.0	917.9	1,080.2	10,833.9
# of Residential Customers	66,628	66,640	66,658	66,660	66,716	66,806	66,849	66,902	66,923	66,965	66,997	66,996	66,812
Total Residential Sales - MWh	70,786	65,307	59,546	51,675	49,844	53,124	69,831	64,085	54,676	51,094	61,497	72,369	723,833
Use per Small Comm & Ind Customer - kWh	3,523.6	3,332.9	3,306.8	2,937.7	2,963.3	2,982.1	3,584.4	3,467.1	3,158.3	3,007.1	3,333.9	3,541.5	39,136.7
# of Small Comm & Ind Customers	11,036	11,025	11,030	11,105	11,208	11,269	11,276	11,304	11,291	11,224	11,198	11,205	11,181
Total Small Comm & Ind Sales - MWh	38,887	36,745	36,474	32,623	33,213	33,605	40,418	39,192	35,660	33,752	37,333	39,682	437,584
General Large Comm & Ind Sales	50,254	49,615	48,469	48,548	48,473	49,942	56,041	55,105	52,472	49,316	50,114	51,395	609,744
Sabin Metals Sales	1,738	1,783	1,840	1,881	1,868	1,776	1,902	1,849	1,842	1,855	1,501	1,404	21,239
Tesoro Refinery Sales	5,432	5,473	5,995	5,968	6,196	6,501	6,810	6,688	6,490	5,975	5,882	5,902	73,312
Westmoreland Coal - ND Sales	1,921	1,825	1,707	1,602	1,445	1,319	1,301	1,328	1,439	1,566	1,743	1,892	19,088
Total Sales (Residential, SC&I and LC&I)	169,018	160,748	154,031	142,297	141,039	146,267	176,303	168,247	152,579	143,558	158,070	172,644	1,884,800
Other Public Sales	2,925	2,849	2,889	2,680	3,047	3,338	3,828	3,684	3,126	2,770	2,739	2,899	36,774
Street & Highway Lighting Sales	1,855	1,740	1,754	1,659	1,647	1,524	1,600	1,640	1,679	1,772	1,866	1,876	20,612
Interdepartmental Sales	20	20	18	17	17	15	17	16	16	16	19	21	212
Total Billed Sales - MWh	173,818	165,357	158,692	146,653	145,750	151,144	181,748	173,587	157,400	148,116	162,694	177,440	1,942,398
Company Use	628	586	595	595	615	636	694	699	595	600	630	621	7,494
Total Energy	174,446	165,943	159,287	147,248	146,365	151,780	182,442	174,286	157,995	148,716	163,324	178,061	1,949,892
Total Requirements (Energy + Losses)	188,244	179,069	171,886	158,895	157,942	163,786	196,873	188,072	170,493	160,480	176,242	192,146	2,104,128
# of Large Comm & Ind Customers	750	752	754	757	758	757	758	758	758	760	759	758	757
# of Other Public Customers	704	704	705	708	713	713	713	712	710	706	702	699	707
# of Street & Highway Lighting Customers	516	515	514	516	516	518	505	507	508	511	512	514	513
Peak Demand Net of DSM Programs	363.7	345.8	316.1	292.0	278.5	371.2	415.6	412.7	347.0	291.0	331.9	372.7	415.6
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	363.7	345.8	316.1	292.0	278.5	371.2	405.3	412.7	347.0	291.0	331.9	372.7	405.3

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

NORTH DAKOTA YEAR 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,072.8	989.5	902.0	782.8	754.4	802.9	1,054.8	967.3	824.9	770.4	926.9	1,090.7	10,939.5
# of Residential Customers	66,864	66,877	66,894	66,896	66,953	67,044	67,086	67,140	67,161	67,203	67,235	67,234	67,049
Total Residential Sales - MWh	71,732	66,175	60,338	52,366	50,509	53,830	70,762	64,945	55,401	51,773	62,320	73,332	733,483
Use per Small Comm & Ind Customer - kWh	3,576.2	3,382.8	3,356.1	2,981.6	3,007.6	3,026.9	3,637.9	3,518.9	3,205.7	3,052.1	3,383.7	3,594.4	39,722.1
# of Small Comm & Ind Customers	11,145	11,133	11,139	11,214	11,318	11,379	11,387	11,415	11,401	11,334	11,308	11,315	11,291
Total Small Comm & Ind Sales - MWh	39,857	37,661	37,384	33,436	34,040	34,443	41,425	40,168	36,548	34,593	38,263	40,671	448,489
General Large Comm & Ind Sales	51,249	50,598	49,430	49,510	49,434	50,932	57,151	56,197	53,512	50,293	51,107	52,414	621,827
Sabin Metals Sales	1,738	1,783	1,840	1,881	1,868	1,776	1,902	1,849	1,842	1,855	1,501	1,404	21,239
Tesoro Refinery Sales	5,557	5,598	6,133	6,105	6,338	6,651	6,967	6,842	6,639	6,112	6,017	6,036	74,995
Westmoreland Coal - ND Sales	1,921	1,825	1,707	1,602	1,445	1,319	1,301	1,328	1,439	1,566	1,743	1,892	19,088
Total Sales (Residential, SC&I and LC&I)	172,054	163,640	156,832	144,900	143,634	148,951	179,508	171,329	155,381	146,192	160,951	175,749	1,919,121
Other Public Sales	2,933	2,857	2,897	2,687	3,055	3,348	3,838	3,694	3,135	2,778	2,747	2,907	36,876
Street & Highway Lighting Sales	1,855	1,741	1,754	1,660	1,648	1,524	1,600	1,641	1,679	1,772	1,866	1,877	20,617
Interdepartmental Sales	20	20	18	17	16	15	17	15	16	16	19	21	210
Total Billed Sales - MWh	176,862	168,258	161,501	149,264	148,353	153,838	184,963	176,679	160,211	150,758	165,583	180,554	1,976,824
Company Use	628	586	595	595	615	636	694	699	595	600	630	621	7,494
Total Energy	177,490	168,844	162,096	149,859	148,968	154,474	185,657	177,378	160,806	151,358	166,213	181,175	1,984,318
Total Requirements (Energy + Losses)	191,529	182,199	174,918	161,713	160,752	166,692	200,343	191,408	173,526	163,331	179,361	195,506	2,141,278
# of Large Comm & Ind Customers	753	756	757	760	762	761	762	762	762	763	763	762	760
# of Other Public Customers	704	704	705	708	713	713	713	712	710	706	702	699	707
# of Street & Highway Lighting Customers	516	515	514	516	516	518	505	507	508	511	512	514	513
Peak Demand Net of DSM Programs	369.4	351.2	321.1	296.7	282.5	376.7	421.7	418.7	352.1	295.2	336.9	378.3	421.7
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	369.4	351.2	321.1	296.7	282.5	376.7	411.4	418.7	352.1	295.2	336.9	378.3	411.4

APPENDIX F

Monthly Forecasts – South Dakota (2011-2020)

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

SOUTH DAKOTA YEAR 2011

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,099.4	1,006.8	939.9	787.6	753.4	782.1	1,000.0	907.9	805.9	755.2	922.9	1,092.8	10,851.8
# of Residential Customers	6,659	6,656	6,655	6,663	6,684	6,700	6,727	6,723	6,714	6,696	6,670	6,652	6,683
Total Residential Sales - MWh	7,321	6,701	6,255	5,248	5,036	5,240	6,727	6,104	5,411	5,057	6,156	7,269	72,525
Use per Small Comm & Ind Customer - kWh	2,033.2	1,966.2	1,796.7	1,602.8	1,583.9	1,648.5	2,111.6	1,903.8	1,840.7	1,641.0	1,902.1	2,048.2	22,071.8
# of Small Comm & Ind Customers	1,840	1,837	1,840	1,868	1,908	1,926	1,927	1,924	1,915	1,883	1,869	1,866	1,884
Total Small Comm & Ind Sales - MWh	3,741	3,612	3,306	2,994	3,022	3,175	4,069	3,663	3,525	3,090	3,555	3,822	41,574
General Large Comm & Ind Sales	2,686	2,978	2,680	2,539	2,782	2,509	3,194	2,690	3,304	2,696	2,984	3,117	34,159
Total Sales (Residential, SC&I and LC&I)	13,748	13,291	12,241	10,781	10,840	10,924	13,990	12,457	12,240	10,843	12,695	14,208	148,258
Other Public Sales	116	154	124	117	148	157	197	133	173	102	129	139	1,689
Street & Highway Lighting Sales	222	210	223	219	219	212	216	219	215	223	219	212	2,609
Interdepartmental Sales	1	1	1	1	1	-	-	-	1	1	1	1	9
Total Billed Sales - MWh	14,087	13,656	12,589	11,118	11,208	11,293	14,403	12,809	12,629	11,169	13,044	14,560	152,565
Company Use	57	47	38	22	20	11	13	15	13	19	32	48	335
Total Energy	14,144	13,703	12,627	11,140	11,228	11,304	14,416	12,824	12,642	11,188	13,076	14,608	152,900
Total Requirements (Energy + Losses)	15,263	14,787	13,626	12,021	12,116	12,198	15,556	13,838	13,642	12,073	14,110	15,763	164,993
# of Large Comm & Ind Customers	75	75	75	75	75	76	76	76	76	76	76	76	76
# of Other Public Customers	53	53	53	55	59	60	61	60	58	54	53	52	56
# of Street & Highway Lighting Customers	38	39	39	39	39	39	38	38	38	38	38	38	38
Peak Demand Net of DSM Programs	28.1	25.7	23.6	22.9	15.9	26.0	28.3	28.4	20.0	20.4	23.9	28.2	28.4

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

SOUTH DAKOTA YEAR 2012

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,110.0	1,016.6	948.8	795.3	760.8	789.6	1,009.8	916.8	813.8	762.6	932.0	1,103.6	10,957.4
# of Residential Customers	6,690	6,687	6,686	6,694	6,715	6,731	6,758	6,754	6,745	6,727	6,701	6,682	6,714
Total Residential Sales - MWh	7,426	6,798	6,344	5,324	5,109	5,315	6,824	6,192	5,489	5,130	6,245	7,374	73,570
Use per Small Comm & Ind Customer - kWh	2,062.9	1,996.2	1,823.0	1,626.4	1,607.2	1,673.0	2,143.4	1,932.1	1,868.1	1,665.1	1,931.1	2,078.0	22,399.4
# of Small Comm & Ind Customers	1,859	1,855	1,859	1,887	1,927	1,945	1,946	1,943	1,934	1,902	1,887	1,885	1,902
Total Small Comm & Ind Sales - MWh	3,835	3,703	3,389	3,069	3,097	3,254	4,171	3,754	3,613	3,167	3,644	3,917	42,613
General Large Comm & Ind Sales	2,890	3,204	2,884	2,733	2,995	2,701	3,437	2,895	3,555	2,900	3,211	3,291	36,696
Total Sales (Residential, SC&I and LC&I)	14,151	13,705	12,617	11,126	11,201	11,270	14,432	12,841	12,657	11,197	13,100	14,582	152,879
Other Public Sales	117	155	125	118	148	157	198	134	174	102	129	140	1,697
Street & Highway Lighting Sales	222	210	223	219	219	212	216	219	215	223	219	212	2,609
Interdepartmental Sales	1	1	1	1	1	-	-	-	1	1	1	1	9
Total Billed Sales - MWh	14,491	14,071	12,966	11,464	11,569	11,639	14,846	13,194	13,047	11,523	13,449	14,935	157,194
Company Use	57	47	38	22	20	11	13	15	13	19	32	48	335
Total Energy	14,548	14,118	13,004	11,486	11,589	11,650	14,859	13,209	13,060	11,542	13,481	14,983	157,529
Total Requirements (Energy + Losses)	15,699	15,235	14,033	12,395	12,506	12,572	16,034	14,254	14,093	12,455	14,547	16,168	169,991
# of Large Comm & Ind Customers	75	75	75	75	76	76	76	76	76	76	76	76	76
# of Other Public Customers	53	53	53	55	59	60	61	60	58	54	53	52	56
# of Street & Highway Lighting Customers	38	39	39	39	39	39	38	38	38	38	38	38	38
Peak Demand Net of DSM Programs	28.5	26.1	23.9	23.3	16.5	27.0	29.4	29.4	20.8	21.1	24.9	29.4	29.4

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

SOUTH DAKOTA YEAR 2013

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,121.0	1,026.6	958.3	803.1	768.3	797.2	1,019.6	925.7	821.8	770.2	941.0	1,114.1	11,064.7
# of Residential Customers	6,720	6,717	6,716	6,724	6,745	6,762	6,789	6,785	6,775	6,757	6,731	6,713	6,745
Total Residential Sales - MWh	7,533	6,896	6,436	5,400	5,182	5,391	6,922	6,281	5,568	5,204	6,334	7,479	74,626
Use per Small Comm & Ind Customer - kWh	2,093.8	2,025.1	1,850.8	1,650.6	1,630.7	1,697.7	2,174.5	1,960.3	1,896.1	1,689.7	1,959.6	2,108.7	22,730.2
# of Small Comm & Ind Customers	1,877	1,874	1,877	1,906	1,947	1,965	1,966	1,963	1,953	1,921	1,906	1,904	1,922
Total Small Comm & Ind Sales - MWh	3,930	3,795	3,474	3,146	3,175	3,336	4,275	3,848	3,703	3,246	3,735	4,015	43,678
General Large Comm & Ind Sales	3,016	3,343	3,009	2,851	3,124	2,818	3,585	3,020	3,709	3,026	3,350	3,386	38,237
Total Sales (Residential, SC&I and LC&I)	14,479	14,034	12,919	11,397	11,481	11,545	14,782	13,149	12,980	11,476	13,419	14,880	156,541
Other Public Sales	117	155	125	118	148	158	199	134	174	102	130	140	1,700
Street & Highway Lighting Sales	222	210	223	219	219	212	216	219	215	223	219	212	2,609
Interdepartmental Sales	1	1	1	1	1	-	-	-	1	1	1	1	9
Total Billed Sales - MWh	14,819	14,400	13,268	11,735	11,849	11,915	15,197	13,502	13,370	11,802	13,769	15,233	160,859
Company Use	57	47	38	22	20	11	13	15	13	19	32	48	335
Total Energy	14,876	14,447	13,306	11,757	11,869	11,926	15,210	13,517	13,383	11,821	13,801	15,281	161,194
Total Requirements (Energy + Losses)	16,053	15,590	14,359	12,687	12,808	12,869	16,413	14,586	14,442	12,756	14,893	16,490	173,946
# of Large Comm & Ind Customers	76	76	76	76	76	76	76	76	77	77	77	77	76
# of Other Public Customers	53	53	53	55	59	60	61	60	58	54	53	52	56
# of Street & Highway Lighting Customers	38	39	39	39	39	39	38	38	38	38	38	38	38
Peak Demand Net of DSM Programs	29.7	27.2	25.0	24.3	17.1	28.1	30.5	30.6	21.6	21.9	25.9	30.7	30.7

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

SOUTH DAKOTA YEAR 2014

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,131.9	1,036.5	967.5	810.9	775.8	805.2	1,029.6	934.7	829.7	777.5	950.3	1,125.0	11,172.3
# of Residential Customers	6,750	6,747	6,746	6,754	6,775	6,791	6,819	6,815	6,805	6,787	6,761	6,742	6,774
Total Residential Sales - MWh	7,640	6,993	6,527	5,477	5,256	5,468	7,021	6,370	5,646	5,277	6,425	7,585	75,685
Use per Small Comm & Ind Customer - kWh	2,124.5	2,054.4	1,877.6	1,674.8	1,655.1	1,721.9	2,206.4	1,989.9	1,924.0	1,714.1	1,987.5	2,139.4	23,062.3
# of Small Comm & Ind Customers	1,896	1,893	1,896	1,925	1,966	1,985	1,986	1,982	1,973	1,941	1,926	1,923	1,941
Total Small Comm & Ind Sales - MWh	4,028	3,889	3,560	3,224	3,254	3,418	4,382	3,944	3,796	3,327	3,828	4,114	44,764
General Large Comm & Ind Sales	3,075	3,409	3,068	2,906	3,185	2,873	3,656	3,080	3,782	3,086	3,416	3,453	38,989
Total Sales (Residential, SC&I and LC&I)	14,743	14,291	13,155	11,607	11,695	11,759	15,059	13,394	13,224	11,690	13,669	15,152	159,438
Other Public Sales	117	156	125	118	149	158	199	134	174	102	130	140	1,702
Street & Highway Lighting Sales	222	210	223	219	219	212	216	219	215	223	219	212	2,609
Interdepartmental Sales	1	1	1	1	-	-	-	-	-	1	1	1	7
Total Billed Sales - MWh	15,083	14,658	13,504	11,945	12,063	12,129	15,474	13,747	13,613	12,016	14,019	15,505	163,756
Company Use	57	47	38	22	20	11	13	15	13	19	32	48	335
Total Energy	15,140	14,705	13,542	11,967	12,083	12,140	15,487	13,762	13,626	12,035	14,051	15,553	164,091
Total Requirements (Energy + Losses)	16,338	15,868	14,613	12,914	13,039	13,100	16,712	14,851	14,704	12,987	15,162	16,783	177,071
# of Large Comm & Ind Customers	76	76	76	76	76	77	77	77	77	77	77	77	77
# of Other Public Customers	53	53	53	55	59	60	61	60	58	54	53	52	56
# of Street & Highway Lighting Customers	38	39	39	39	39	39	38	38	38	38	38	38	38
Peak Demand Net of DSM Programs	31.0	28.3	26.0	25.3	17.4	28.5	31.0	31.1	21.9	22.3	26.4	31.2	31.2

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

SOUTH DAKOTA YEAR 2015

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,142.9	1,046.8	977.1	818.8	783.4	812.9	1,039.7	943.9	837.9	785.2	959.5	1,135.9	11,281.7
# of Residential Customers	6,779	6,775	6,774	6,783	6,804	6,821	6,848	6,844	6,834	6,816	6,790	6,771	6,803
Total Residential Sales - MWh	7,748	7,092	6,619	5,554	5,330	5,545	7,120	6,460	5,726	5,352	6,515	7,691	76,752
Use per Small Comm & Ind Customer - kWh	2,155.6	2,084.7	1,905.5	1,700.1	1,679.3	1,748.5	2,239.9	2,019.0	1,952.8	1,740.7	2,018.5	2,171.5	23,408.7
# of Small Comm & Ind Customers	1,915	1,912	1,915	1,944	1,986	2,004	2,005	2,002	1,992	1,959	1,944	1,942	1,960
Total Small Comm & Ind Sales - MWh	4,128	3,986	3,649	3,305	3,335	3,504	4,491	4,042	3,890	3,410	3,924	4,217	45,881
General Large Comm & Ind Sales	3,135	3,476	3,129	2,964	3,248	2,930	3,728	3,141	3,857	3,147	3,483	3,521	39,759
Total Sales (Residential, SC&I and LC&I)	15,011	14,554	13,397	11,823	11,913	11,979	15,339	13,643	13,473	11,909	13,922	15,429	162,392
Other Public Sales	117	156	126	119	149	159	200	135	176	103	130	141	1,711
Street & Highway Lighting Sales	222	210	223	219	219	212	216	220	215	223	219	212	2,610
Interdepartmental Sales	1	1	1	1	-	-	-	-	-	1	1	1	7
Total Billed Sales - MWh	15,351	14,921	13,747	12,162	12,281	12,350	15,755	13,998	13,864	12,236	14,272	15,783	166,720
Company Use	57	47	38	22	20	11	13	15	13	19	32	48	335
Total Energy	15,408	14,968	13,785	12,184	12,301	12,361	15,768	14,013	13,877	12,255	14,304	15,831	167,055
Total Requirements (Energy + Losses)	16,627	16,152	14,875	13,148	13,274	13,339	17,015	15,121	14,975	13,224	15,435	17,083	180,268
# of Large Comm & Ind Customers	76	76	76	76	77	77	77	77	77	77	77	77	77
# of Other Public Customers	53	53	53	55	59	60	61	60	58	54	53	52	56
# of Street & Highway Lighting Customers	38	39	39	39	39	39	38	38	38	38	38	38	38
Peak Demand Net of DSM Programs	31.5	28.9	26.5	25.8	17.9	29.4	31.9	32.0	22.5	22.9	27.2	32.2	32.2

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

SOUTH DAKOTA YEAR 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,154.0	1,056.9	986.5	826.9	791.0	820.8	1,049.6	953.1	846.0	792.8	968.9	1,146.8	11,390.9
# of Residential Customers	6,807	6,804	6,803	6,811	6,832	6,849	6,877	6,872	6,863	6,844	6,818	6,799	6,832
Total Residential Sales - MWh	7,855	7,191	6,711	5,632	5,404	5,622	7,218	6,550	5,806	5,426	6,606	7,797	77,818
Use per Small Comm & Ind Customer - kWh	2,188.2	2,116.0	1,933.8	1,725.4	1,704.7	1,774.2	2,273.1	2,049.0	1,981.6	1,766.5	2,047.4	2,202.9	23,755.5
# of Small Comm & Ind Customers	1,934	1,931	1,934	1,963	2,005	2,024	2,025	2,022	2,012	1,979	1,964	1,962	1,980
Total Small Comm & Ind Sales - MWh	4,232	4,086	3,740	3,387	3,418	3,591	4,603	4,143	3,987	3,496	4,021	4,322	47,026
General Large Comm & Ind Sales	3,197	3,544	3,190	3,022	3,312	2,988	3,802	3,202	3,932	3,208	3,552	3,590	40,539
Total Sales (Residential, SC&I and LC&I)	15,284	14,821	13,641	12,041	12,134	12,201	15,623	13,895	13,725	12,130	14,179	15,709	165,383
Other Public Sales	118	157	126	119	149	159	200	135	176	103	131	141	1,714
Street & Highway Lighting Sales	222	210	223	219	219	212	216	220	215	223	219	212	2,610
Interdepartmental Sales	1	1	1	1	-	-	-	-	-	1	1	1	7
Total Billed Sales - MWh	15,625	15,189	13,991	12,380	12,502	12,572	16,039	14,250	14,116	12,457	14,530	16,063	169,714
Company Use	57	47	38	22	20	11	13	15	13	19	32	48	335
Total Energy	15,682	15,236	14,029	12,402	12,522	12,583	16,052	14,265	14,129	12,476	14,562	16,111	170,049
Total Requirements (Energy + Losses)	16,922	16,441	15,139	13,383	13,512	13,578	17,322	15,393	15,247	13,463	15,714	17,385	183,499
# of Large Comm & Ind Customers	77	77	77	77	77	77	77	77	78	78	78	78	77
# of Other Public Customers	53	53	53	55	59	60	61	60	58	54	53	52	56
# of Street & Highway Lighting Customers	38	39	39	39	39	39	38	38	38	38	38	38	38
Peak Demand Net of DSM Programs	32.5	29.7	27.3	26.5	18.2	29.8	32.4	32.5	22.9	23.3	27.7	32.7	32.7

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

SOUTH DAKOTA YEAR 2017

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,165.3	1,067.2	996.2	834.9	798.7	829.0	1,060.0	962.3	854.3	800.5	978.2	1,157.9	11,502.1
# of Residential Customers	6,834	6,831	6,830	6,838	6,860	6,876	6,904	6,900	6,890	6,872	6,845	6,826	6,859
Total Residential Sales - MWh	7,964	7,290	6,804	5,709	5,479	5,700	7,318	6,640	5,886	5,501	6,696	7,904	78,891
Use per Small Comm & Ind Customer - kWh	2,220.7	2,147.7	1,962.6	1,750.4	1,729.9	1,800.9	2,306.6	2,079.3	2,011.3	1,791.9	2,078.2	2,236.2	24,108.0
# of Small Comm & Ind Customers	1,953	1,950	1,953	1,983	2,025	2,044	2,045	2,042	2,032	1,999	1,983	1,981	1,999
Total Small Comm & Ind Sales - MWh	4,337	4,188	3,833	3,471	3,503	3,681	4,717	4,246	4,087	3,582	4,121	4,430	48,196
General Large Comm & Ind Sales	3,260	3,614	3,253	3,082	3,378	3,047	3,877	3,266	4,010	3,272	3,622	3,661	41,342
Total Sales (Residential, SC&I and LC&I)	15,561	15,092	13,890	12,262	12,360	12,428	15,912	14,152	13,983	12,355	14,439	15,995	168,429
Other Public Sales	118	157	126	119	150	160	201	136	176	103	131	142	1,719
Street & Highway Lighting Sales	222	210	223	219	219	212	216	220	215	223	219	212	2,610
Interdepartmental Sales	1	1	1	1	-	-	-	-	-	1	1	1	7
Total Billed Sales - MWh	15,902	15,460	14,240	12,601	12,729	12,800	16,329	14,508	14,374	12,682	14,790	16,350	172,765
Company Use	57	47	38	22	20	11	13	15	13	19	32	48	335
Total Energy	15,959	15,507	14,278	12,623	12,749	12,811	16,342	14,523	14,387	12,701	14,822	16,398	173,100
Total Requirements (Energy + Losses)	17,221	16,734	15,407	13,621	13,757	13,824	17,635	15,672	15,525	13,706	15,994	17,695	186,791
# of Large Comm & Ind Customers	77	77	77	77	77	78	78	78	78	78	78	78	78
# of Other Public Customers	53	53	53	55	59	60	61	60	58	54	53	52	56
# of Street & Highway Lighting Customers	38	39	39	39	39	39	38	38	38	38	38	38	38
Peak Demand Net of DSM Programs	33.0	30.2	27.7	27.0	18.5	30.3	32.9	32.9	23.2	23.6	28.1	33.2	33.2

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

SOUTH DAKOTA YEAR 2018

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,176.7	1,077.6	1,006.0	843.1	806.4	837.0	1,070.3	971.8	862.5	808.4	987.8	1,169.0	11,614.1
# of Residential Customers	6,860	6,857	6,856	6,864	6,886	6,903	6,931	6,926	6,917	6,898	6,872	6,853	6,885
Total Residential Sales - MWh	8,072	7,389	6,897	5,787	5,553	5,778	7,418	6,731	5,966	5,576	6,788	8,011	79,966
Use per Small Comm & Ind Customer - kWh	2,252.9	2,179.8	1,991.9	1,777.2	1,756.0	1,827.5	2,341.4	2,111.1	2,041.4	1,819.6	2,108.8	2,269.4	24,469.6
# of Small Comm & Ind Customers	1,973	1,969	1,972	2,002	2,045	2,064	2,065	2,062	2,052	2,018	2,003	2,001	2,019
Total Small Comm & Ind Sales - MWh	4,445	4,292	3,928	3,558	3,591	3,772	4,835	4,353	4,189	3,672	4,224	4,541	49,400
General Large Comm & Ind Sales	3,324	3,686	3,318	3,143	3,444	3,107	3,953	3,330	4,089	3,336	3,693	3,734	42,157
Total Sales (Residential, SC&I and LC&I)	15,841	15,367	14,143	12,488	12,588	12,657	16,206	14,414	14,244	12,584	14,705	16,286	171,523
Other Public Sales	119	157	127	120	150	160	201	136	177	103	131	142	1,723
Street & Highway Lighting Sales	222	210	223	219	219	212	217	220	215	223	219	212	2,611
Interdepartmental Sales	1	1	1	1	-	-	-	-	-	1	1	1	7
Total Billed Sales - MWh	16,183	15,735	14,494	12,828	12,957	13,029	16,624	14,770	14,636	12,911	15,056	16,641	175,864
Company Use	57	47	38	22	20	11	13	15	13	19	32	48	335
Total Energy	16,240	15,782	14,532	12,850	12,977	13,040	16,637	14,785	14,649	12,930	15,088	16,689	176,199
Total Requirements (Energy + Losses)	17,525	17,030	15,681	13,866	14,003	14,071	17,953	15,954	15,808	13,953	16,281	18,009	190,134
# of Large Comm & Ind Customers	77	78	77	77	78	78	78	78	78	78	78	78	78
# of Other Public Customers	53	53	53	55	59	60	61	60	58	54	53	52	56
# of Street & Highway Lighting Customers	38	39	39	39	39	39	38	38	38	38	38	38	38
Peak Demand Net of DSM Programs	33.5	30.7	28.2	27.4	18.7	30.7	33.4	33.4	23.6	24.0	28.5	33.7	33.7

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

SOUTH DAKOTA YEAR 2019

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,188.1	1,088.0	1,015.7	851.2	814.2	845.1	1,080.6	981.3	870.9	816.3	997.5	1,180.4	11,727.1
# of Residential Customers	6,886	6,883	6,882	6,890	6,912	6,928	6,957	6,952	6,943	6,924	6,897	6,878	6,911
Total Residential Sales - MWh	8,181	7,489	6,990	5,865	5,628	5,855	7,518	6,822	6,047	5,652	6,880	8,119	81,046
Use per Small Comm & Ind Customer - kWh	2,287.1	2,212.2	2,021.6	1,803.7	1,782.1	1,855.6	2,375.8	2,142.7	2,071.9	1,846.4	2,140.4	2,304.0	24,835.8
# of Small Comm & Ind Customers	1,992	1,989	1,992	2,022	2,065	2,084	2,086	2,082	2,072	2,038	2,023	2,020	2,039
Total Small Comm & Ind Sales - MWh	4,556	4,400	4,027	3,647	3,680	3,867	4,956	4,461	4,293	3,763	4,330	4,654	50,634
General Large Comm & Ind Sales	3,391	3,758	3,383	3,205	3,512	3,168	4,031	3,396	4,170	3,402	3,767	3,808	42,991
Total Sales (Residential, SC&I and LC&I)	16,128	15,647	14,400	12,717	12,820	12,890	16,505	14,679	14,510	12,817	14,977	16,581	174,671
Other Public Sales	119	158	127	120	150	161	202	137	177	103	132	142	1,728
Street & Highway Lighting Sales	222	210	223	219	219	212	217	220	215	223	219	212	2,611
Interdepartmental Sales	1	1	1	1	-	-	-	-	-	1	1	1	7
Total Billed Sales - MWh	16,470	16,016	14,751	13,057	13,189	13,263	16,924	15,036	14,902	13,144	15,329	16,936	179,017
Company Use	57	47	38	22	20	11	13	15	13	19	32	48	335
Total Energy	16,527	16,063	14,789	13,079	13,209	13,274	16,937	15,051	14,915	13,163	15,361	16,984	179,352
Total Requirements (Energy + Losses)	17,834	17,334	15,959	14,114	14,254	14,324	18,277	16,242	16,095	14,204	16,576	18,327	193,540
# of Large Comm & Ind Customers	78	78	78	78	78	78	78	78	79	79	79	79	78
# of Other Public Customers	53	53	53	55	59	60	61	60	58	54	53	52	56
# of Street & Highway Lighting Customers	38	39	39	39	39	39	38	38	38	38	38	38	38
Peak Demand Net of DSM Programs	34.1	31.2	28.6	27.8	19.0	31.2	33.9	33.9	23.9	24.4	29.0	34.3	34.3

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

SOUTH DAKOTA YEAR 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,199.7	1,098.7	1,025.6	859.6	822.3	853.3	1,091.2	991.0	879.4	824.1	1,007.2	1,191.8	11,841.6
# of Residential Customers	6,911	6,908	6,907	6,915	6,937	6,954	6,982	6,977	6,968	6,949	6,922	6,903	6,936
Total Residential Sales - MWh	8,291	7,590	7,084	5,944	5,704	5,934	7,619	6,914	6,128	5,727	6,972	8,227	82,134
Use per Small Comm & Ind Customer - kWh	2,321.1	2,245.5	2,052.2	1,830.1	1,808.2	1,882.7	2,411.7	2,174.0	2,102.2	1,874.1	2,173.4	2,338.2	25,205.5
# of Small Comm & Ind Customers	2,012	2,008	2,011	2,042	2,086	2,105	2,106	2,103	2,093	2,058	2,042	2,040	2,059
Total Small Comm & Ind Sales - MWh	4,670	4,509	4,127	3,737	3,772	3,963	5,079	4,572	4,400	3,857	4,438	4,770	51,894
General Large Comm & Ind Sales	3,457	3,832	3,450	3,269	3,582	3,231	4,111	3,464	4,253	3,470	3,841	3,883	43,843
Total Sales (Residential, SC&I and LC&I)	16,418	15,931	14,661	12,950	13,058	13,128	16,809	14,950	14,781	13,054	15,251	16,880	177,871
Other Public Sales	119	158	128	121	151	161	202	137	178	104	133	143	1,735
Street & Highway Lighting Sales	222	210	223	219	220	213	217	220	215	223	219	212	2,613
Interdepartmental Sales	1	1	1	1	-	-	-	-	-	1	1	1	7
Total Billed Sales - MWh	16,760	16,300	15,013	13,291	13,429	13,502	17,228	15,307	15,174	13,382	15,604	17,236	182,226
Company Use	57	47	38	22	20	11	13	15	13	19	32	48	335
Total Energy	16,817	16,347	15,051	13,313	13,449	13,513	17,241	15,322	15,187	13,401	15,636	17,284	182,561
Total Requirements (Energy + Losses)	18,147	17,640	16,242	14,366	14,513	14,582	18,605	16,534	16,388	14,461	16,873	18,651	197,002
# of Large Comm & Ind Customers	78	78	78	78	78	79	79	79	79	79	79	79	79
# of Other Public Customers	53	53	53	55	59	60	61	60	58	54	53	52	56
# of Street & Highway Lighting Customers	38	39	39	39	39	39	38	38	38	38	38	38	38
Peak Demand Net of DSM Programs	34.6	31.7	29.1	28.3	19.3	31.6	34.4	34.4	24.3	24.7	29.4	34.8	34.8

APPENDIX G

Monthly Forecasts – Integrated System (2011-2020)

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

INTEGRATED SYSTEM YEAR 2011

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	972.1	893.9	817.7	708.0	687.1	728.7	965.2	879.1	752.5	696.7	837.9	987.7	9,926.9
# of Residential Customers	89,982	89,988	89,989	89,942	90,023	90,135	90,217	90,272	90,289	90,327	90,357	90,343	90,155
Total Residential Sales - MWh	87,471	80,436	73,585	63,677	61,859	65,678	87,080	79,361	67,943	62,929	75,708	89,231	894,959
Use per Small Comm & Ind Customer - kWh	2,720.8	2,592.7	2,533.1	2,252.5	2,290.7	2,288.8	2,814.5	2,677.7	2,456.4	2,293.5	2,549.6	2,741.7	30,209.8
# of Small Comm & Ind Customers	16,868	16,853	16,866	17,008	17,208	17,310	17,329	17,358	17,323	17,176	17,111	17,102	17,126
Total Small Comm & Ind Sales - MWh	45,894	43,694	42,723	38,311	39,419	39,619	48,773	46,480	42,552	39,393	43,627	46,888	517,373
General Large Comm & Ind Sales	60,357	59,288	57,630	58,695	58,461	56,027	64,927	63,348	62,394	59,928	61,400	66,161	728,616
Sabin Metals Sales	1,474	1,513	1,561	1,595	1,585	1,506	1,613	1,569	1,562	1,573	1,273	1,228	18,052
Encore Oil Sales	17,667	17,309	18,003	17,591	16,923	18,733	18,081	17,796	18,415	19,285	19,637	20,270	219,710
Tesoro Refinery Sales	4,433	4,466	4,893	4,870	5,056	5,305	5,558	5,458	5,296	4,876	4,800	4,828	59,839
TransCanada Keystone Pipeline	-	-	-	-	-	-	-	-	-	-	-	-	-
Westmoreland Coal Sales	2,180	2,083	1,944	1,812	1,623	1,484	1,447	1,467	1,585	1,744	1,970	2,165	21,504
Total Sales (Residential, SC&I and LC&I)	219,476	208,789	200,339	186,551	184,926	188,352	227,479	215,479	199,747	189,728	208,415	230,771	2,460,053
Other Public Sales	3,482	3,459	3,421	3,231	3,713	4,078	4,815	4,507	3,920	3,323	3,295	3,503	44,747
Street & Highway Lighting Sales	2,706	2,525	2,596	2,469	2,485	2,303	2,401	2,470	2,479	2,618	2,689	2,703	30,444
Interdepartmental Sales	41	41	37	34	33	28	33	30	34	33	38	43	425
Total Billed Sales - MWh	225,705	214,814	206,393	192,285	191,157	194,761	234,728	222,486	206,180	195,702	214,437	237,020	2,535,669
Company Use	725	670	666	646	661	672	738	743	634	644	691	703	8,193
Total Energy	226,430	215,484	207,059	192,931	191,818	195,433	235,466	223,229	206,814	196,346	215,128	237,723	2,543,862
Total Requirements (Energy + Losses)	244,342	232,529	223,438	208,191	206,990	210,891	254,091	240,886	223,173	211,877	232,145	256,526	2,745,079
# of Large Comm & Ind Customers	1,046	1,049	1,051	1,055	1,060	1,063	1,064	1,065	1,063	1,062	1,060	1,059	1,058
# of Other Public Customers	858	858	860	867	879	881	882	880	874	864	858	853	868
# of Street & Highway Lighting Customers	647	645	643	645	645	647	626	628	629	632	633	636	638
Peak Demand Net of DSM Programs	425.8	410.1	376.5	352.5	329.2	453.7	507.6	484.8	408.9	352.8	401.8	450.3	507.6
Interruptible Demand	-	-	-	-	-	-	7.6	-	-	-	-	-	7.6
Peak Demand Net of all DSM	425.8	410.1	376.5	352.5	329.2	453.7	500.0	484.8	408.9	352.8	401.8	450.3	500.0

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

INTEGRATED SYSTEM YEAR 2012

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	981.6	902.5	825.6	714.9	693.8	735.7	974.6	887.7	759.9	703.5	846.1	997.3	10,023.5
# of Residential Customers	90,391	90,397	90,398	90,350	90,432	90,545	90,627	90,683	90,700	90,737	90,768	90,753	90,565
Total Residential Sales - MWh	88,725	81,587	74,635	64,590	62,743	66,615	88,327	80,497	68,920	63,833	76,796	90,506	907,775
Use per Small Comm & Ind Customer - kWh	2,761.0	2,631.2	2,570.6	2,285.8	2,324.7	2,322.7	2,856.2	2,717.5	2,492.7	2,327.5	2,587.5	2,782.3	30,657.3
# of Small Comm & Ind Customers	17,037	17,021	17,035	17,179	17,380	17,483	17,502	17,531	17,496	17,347	17,281	17,273	17,297
Total Small Comm & Ind Sales - MWh	47,039	44,785	43,790	39,267	40,403	40,607	49,990	47,640	43,613	40,375	44,715	48,058	530,282
General Large Comm & Ind Sales	64,635	63,499	61,723	62,850	62,607	60,047	69,563	67,869	66,834	64,166	65,742	69,907	779,442
Sabin Metals Sales	1,549	1,590	1,641	1,677	1,666	1,583	1,695	1,649	1,642	1,654	1,338	1,289	18,973
Encore Oil Sales	18,260	17,890	18,608	18,182	17,491	19,362	18,688	18,394	19,033	19,933	20,297	20,951	227,089
Tesoro Refinery Sales	4,558	4,592	5,030	5,007	5,198	5,455	5,714	5,612	5,445	5,013	4,935	4,962	61,521
TransCanada Keystone Pipeline	-	-	-	-	-	-	1,732	1,732	1,676	1,732	1,676	1,732	10,280
Westmoreland Coal Sales	2,180	2,083	1,944	1,812	1,623	1,484	1,447	1,467	1,585	1,744	1,970	2,165	21,504
Total Sales (Residential, SC&I and LC&I)	226,946	216,026	207,371	193,385	191,731	195,153	237,156	224,860	208,748	198,450	217,469	239,570	2,556,866
Other Public Sales	3,492	3,469	3,431	3,242	3,722	4,088	4,829	4,520	3,932	3,333	3,304	3,513	44,875
Street & Highway Lighting Sales	2,706	2,525	2,596	2,469	2,486	2,304	2,401	2,471	2,479	2,618	2,689	2,704	30,448
Interdepartmental Sales	41	41	37	34	33	28	33	30	34	32	38	43	424
Total Billed Sales - MWh	233,185	222,061	213,435	199,130	197,972	201,573	244,419	231,881	215,193	204,433	223,500	245,830	2,632,613
Company Use	725	670	666	646	661	672	738	743	634	644	691	703	8,193
Total Energy	233,910	222,731	214,101	199,776	198,633	202,245	245,157	232,624	215,827	205,077	224,191	246,533	2,640,806
Total Requirements (Energy + Losses)	252,412	240,350	231,037	215,579	214,345	218,243	264,549	251,025	232,899	221,298	241,924	266,034	2,849,695
# of Large Comm & Ind Customers	1,051	1,053	1,055	1,060	1,066	1,067	1,070	1,070	1,068	1,067	1,065	1,063	1,063
# of Other Public Customers	858	858	860	867	879	881	882	880	874	864	858	853	868
# of Street & Highway Lighting Customers	647	645	643	645	645	647	626	628	629	632	633	636	638
Peak Demand Net of DSM Programs	432.5	416.6	382.5	358.1	341.8	471.1	527.0	503.2	424.5	366.2	418.9	469.4	527.0
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	432.5	416.6	382.5	358.1	341.8	471.1	516.7	503.2	424.5	366.2	418.9	469.4	516.7

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

INTEGRATED SYSTEM YEAR 2013

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	991.1	911.3	833.7	721.9	700.6	742.9	984.1	896.3	767.3	710.3	854.3	1,006.9	10,121.2
# of Residential Customers	90,796	90,802	90,803	90,755	90,837	90,951	91,034	91,089	91,106	91,143	91,175	91,160	90,971
Total Residential Sales - MWh	89,988	82,750	75,705	65,515	63,637	67,569	89,588	81,644	69,909	64,741	77,894	91,793	920,732
Use per Small Comm & Ind Customer - kWh	2,801.8	2,669.9	2,608.6	2,319.3	2,358.8	2,356.7	2,898.0	2,757.4	2,529.5	2,361.7	2,625.6	2,823.1	31,107.9
# of Small Comm & Ind Customers	17,208	17,193	17,206	17,353	17,556	17,661	17,680	17,709	17,672	17,522	17,456	17,448	17,472
Total Small Comm & Ind Sales - MWh	48,214	45,903	44,883	40,247	41,411	41,621	51,237	48,830	44,701	41,382	45,832	49,257	543,518
General Large Comm & Ind Sales	67,347	66,166	64,314	65,485	65,233	62,578	72,487	70,722	69,641	66,855	68,496	72,145	811,469
Sabin Metals Sales	1,625	1,667	1,721	1,758	1,747	1,660	1,779	1,729	1,722	1,734	1,403	1,350	19,895
Encore Oil Sales	18,875	18,492	19,234	18,793	18,079	20,013	19,316	19,013	19,673	20,602	20,979	21,655	234,724
Tesoro Refinery Sales	4,682	4,718	5,168	5,144	5,341	5,604	5,871	5,766	5,594	5,150	5,071	5,097	63,206
TransCanada Keystone Pipeline	6,927	6,256	6,927	6,703	6,927	6,703	6,927	6,927	6,703	6,927	6,703	6,927	81,557
Westmoreland Coal Sales	2,180	2,083	1,944	1,812	1,623	1,484	1,447	1,467	1,585	1,744	1,970	2,165	21,504
Total Sales (Residential, SC&I and LC&I)	239,838	228,035	219,896	205,457	203,998	207,232	248,652	236,098	219,528	209,135	228,348	250,389	2,696,605
Other Public Sales	3,502	3,479	3,440	3,251	3,733	4,100	4,842	4,532	3,942	3,342	3,315	3,523	45,001
Street & Highway Lighting Sales	2,706	2,526	2,596	2,469	2,486	2,305	2,402	2,471	2,479	2,618	2,689	2,705	30,452
Interdepartmental Sales	41	41	37	34	33	28	33	30	33	32	37	43	422
Total Billed Sales - MWh	246,087	234,081	225,969	211,211	210,250	213,665	255,929	243,131	225,982	215,127	234,389	256,660	2,772,480
Company Use	725	670	666	646	661	672	738	743	634	644	691	703	8,193
Total Energy	246,812	234,751	226,635	211,857	210,911	214,337	256,667	243,874	226,616	215,771	235,080	257,363	2,780,673
Total Requirements (Energy + Losses)	266,335	253,320	244,563	228,615	227,595	231,291	276,969	263,164	244,541	232,838	253,675	277,721	3,000,627
# of Large Comm & Ind Customers	1,056	1,060	1,061	1,066	1,070	1,072	1,074	1,074	1,074	1,073	1,070	1,068	1,068
# of Other Public Customers	858	858	860	867	879	881	882	880	874	864	858	853	868
# of Street & Highway Lighting Customers	647	645	643	645	645	647	626	628	629	632	633	636	638
Peak Demand Net of DSM Programs	450.9	434.3	398.8	373.4	355.0	489.3	547.4	522.8	440.9	380.3	436.8	489.5	547.4
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	450.9	434.3	398.8	373.4	355.0	489.3	537.1	522.8	440.9	380.3	436.8	489.5	537.1

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

INTEGRATED SYSTEM YEAR 2014

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,000.8	920.2	841.8	728.9	707.4	750.2	993.8	905.1	774.8	717.2	862.6	1,016.7	10,219.9
# of Residential Customers	91,190	91,196	91,197	91,149	91,231	91,344	91,429	91,483	91,500	91,538	91,570	91,555	91,365
Total Residential Sales - MWh	91,261	83,917	76,773	66,438	64,540	68,523	90,860	82,803	70,893	65,653	78,992	93,086	933,739
Use per Small Comm & Ind Customer - kWh	2,842.9	2,709.0	2,646.8	2,353.2	2,393.5	2,391.3	2,940.6	2,798.0	2,566.6	2,396.2	2,664.0	2,864.3	31,564.3
# of Small Comm & Ind Customers	17,382	17,367	17,380	17,529	17,733	17,839	17,859	17,887	17,851	17,701	17,633	17,625	17,649
Total Small Comm & Ind Sales - MWh	49,416	47,047	46,002	41,250	42,444	42,658	52,517	50,048	45,817	42,415	46,975	50,484	557,073
General Large Comm & Ind Sales	68,764	67,555	65,665	66,864	66,604	63,880	74,004	72,202	71,102	68,265	69,941	73,675	828,521
Sabin Metals Sales	1,700	1,744	1,800	1,840	1,828	1,737	1,861	1,809	1,802	1,814	1,468	1,392	20,795
Encore Oil Sales	19,509	19,113	19,880	19,425	18,686	20,685	19,965	19,652	20,334	21,295	21,684	22,245	242,473
Tesoro Refinery Sales	4,808	4,844	5,306	5,282	5,483	5,754	6,027	5,919	5,743	5,288	5,206	5,231	64,891
TransCanada Keystone Pipeline	6,927	6,256	6,927	6,703	6,927	6,703	6,927	6,927	6,703	6,927	6,703	6,927	81,557
Westmoreland Coal Sales	2,180	2,083	1,944	1,812	1,623	1,484	1,447	1,467	1,585	1,744	1,970	2,165	21,504
Total Sales (Residential, SC&I and LC&I)	244,565	232,559	224,297	209,614	208,135	211,424	253,608	240,827	223,979	213,401	232,939	255,205	2,750,553
Other Public Sales	3,512	3,490	3,450	3,259	3,744	4,112	4,857	4,546	3,953	3,350	3,323	3,531	45,127
Street & Highway Lighting Sales	2,708	2,527	2,596	2,469	2,486	2,305	2,402	2,471	2,481	2,619	2,689	2,705	30,458
Interdepartmental Sales	41	40	37	33	32	28	33	30	31	31	37	42	415
Total Billed Sales - MWh	250,826	238,616	230,380	215,375	214,397	217,869	260,900	247,874	230,444	219,401	238,988	261,483	2,826,553
Company Use	725	670	666	646	661	672	738	743	634	644	691	703	8,193
Total Energy	251,551	239,286	231,046	216,021	215,058	218,541	261,638	248,617	231,078	220,045	239,679	262,186	2,834,746
Total Requirements (Energy + Losses)	271,449	258,214	249,322	233,108	232,069	235,827	282,334	268,283	249,357	237,451	258,637	282,925	3,058,976
# of Large Comm & Ind Customers	1,061	1,064	1,065	1,070	1,076	1,078	1,080	1,080	1,079	1,077	1,075	1,073	1,073
# of Other Public Customers	858	858	860	867	879	881	882	880	874	864	858	853	868
# of Street & Highway Lighting Customers	647	645	643	645	645	647	626	628	629	632	633	636	638
Peak Demand Net of DSM Programs	470.2	452.8	415.8	389.3	360.9	497.3	556.3	531.4	448.2	386.7	444.6	498.3	556.3
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	470.2	452.8	415.8	389.3	360.9	497.3	546.0	531.4	448.2	386.7	444.6	498.3	546.0

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

INTEGRATED SYSTEM YEAR 2015

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,010.6	929.2	850.1	736.0	714.3	757.5	1,003.5	914.0	782.4	724.2	871.1	1,026.5	10,319.5
# of Residential Customers	91,575	91,580	91,581	91,533	91,616	91,731	91,814	91,870	91,887	91,925	91,957	91,941	91,751
Total Residential Sales - MWh	92,543	85,094	77,849	67,369	65,441	69,484	92,134	83,965	71,889	66,576	80,104	94,378	946,825
Use per Small Comm & Ind Customer - kWh	2,885.4	2,749.5	2,686.4	2,388.8	2,429.3	2,427.3	2,985.0	2,839.8	2,605.2	2,432.3	2,704.1	2,907.6	32,038.3
# of Small Comm & Ind Customers	17,553	17,538	17,551	17,700	17,907	18,013	18,032	18,063	18,025	17,873	17,805	17,796	17,821
Total Small Comm & Ind Sales - MWh	50,647	48,221	47,149	42,281	43,502	43,723	53,825	51,295	46,959	43,473	48,146	51,744	570,965
General Large Comm & Ind Sales	70,213	68,976	67,047	68,275	68,008	65,213	75,554	73,717	72,596	69,706	71,417	75,238	845,960
Sabin Metals Sales	1,738	1,783	1,840	1,881	1,868	1,776	1,902	1,849	1,842	1,855	1,501	1,404	21,239
Encore Oil Sales	19,836	19,434	20,214	19,751	19,000	21,033	20,301	19,981	20,675	21,653	22,048	22,618	246,544
Tesoro Refinery Sales	4,932	4,970	5,444	5,419	5,626	5,903	6,184	6,073	5,893	5,425	5,341	5,365	66,575
TransCanada Keystone Pipeline	10,390	9,384	10,390	10,055	10,390	10,055	10,390	10,390	10,055	10,390	10,055	10,390	122,334
Westmoreland Coal Sales	2,180	2,083	1,944	1,812	1,623	1,484	1,447	1,467	1,585	1,744	1,970	2,165	21,504
Total Sales (Residential, SC&I and LC&I)	252,479	239,945	231,877	216,843	215,458	218,671	261,737	248,737	231,494	220,822	240,582	263,302	2,841,946
Other Public Sales	3,521	3,499	3,460	3,268	3,754	4,124	4,870	4,559	3,965	3,361	3,332	3,543	45,256
Street & Highway Lighting Sales	2,708	2,527	2,597	2,470	2,487	2,305	2,402	2,472	2,481	2,620	2,690	2,705	30,464
Interdepartmental Sales	39	39	36	33	31	28	33	29	31	31	36	41	407
Total Billed Sales - MWh	258,747	246,010	237,970	222,614	221,730	225,128	269,042	255,797	237,971	226,834	246,640	269,591	2,918,073
Company Use	725	670	666	646	661	672	738	743	634	644	691	703	8,193
Total Energy	259,472	246,680	238,636	223,260	222,391	225,800	269,780	256,540	238,605	227,478	247,331	270,294	2,926,266
Total Requirements (Energy + Losses)	279,996	266,192	257,512	240,920	239,983	243,661	291,119	276,832	257,479	245,471	266,894	291,674	3,157,733
# of Large Comm & Ind Customers	1,064	1,068	1,069	1,074	1,080	1,082	1,083	1,083	1,082	1,081	1,078	1,077	1,077
# of Other Public Customers	858	858	860	867	879	881	882	880	874	864	858	853	868
# of Street & Highway Lighting Customers	647	645	643	645	645	647	626	628	629	632	633	636	638
Peak Demand Net of DSM Programs	478.6	461.0	423.2	396.4	371.1	511.4	572.1	546.4	460.7	397.5	458.2	513.6	572.1
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	478.6	461.0	423.2	396.4	371.1	511.4	561.8	546.4	460.7	397.5	458.2	513.6	561.8

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

INTEGRATED SYSTEM YEAR 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,020.4	938.3	858.4	743.2	721.3	764.9	1,013.2	922.8	789.9	731.3	879.6	1,036.5	10,420.2
# of Residential Customers	91,948	91,954	91,955	91,906	91,989	92,104	92,190	92,244	92,261	92,300	92,332	92,316	92,125
Total Residential Sales - MWh	93,827	86,282	78,930	68,305	66,355	70,450	93,411	85,123	72,881	67,502	81,214	95,682	959,961
Use per Small Comm & Ind Customer - kWh	2,928.2	2,790.2	2,726.2	2,424.3	2,465.5	2,463.2	3,029.2	2,881.9	2,643.8	2,468.4	2,744.0	2,950.5	32,513.2
# of Small Comm & Ind Customers	17,728	17,713	17,726	17,875	18,084	18,193	18,212	18,243	18,205	18,051	17,983	17,974	17,999
Total Small Comm & Ind Sales - MWh	51,912	49,423	48,325	43,335	44,586	44,813	55,168	52,575	48,130	44,557	49,346	53,033	585,203
General Large Comm & Ind Sales	71,696	70,430	68,460	69,718	69,445	66,577	77,140	75,263	74,123	71,179	72,929	76,781	863,741
Sabin Metals Sales	1,738	1,783	1,840	1,881	1,868	1,776	1,902	1,849	1,842	1,855	1,501	1,404	21,239
Encore Oil Sales	20,170	19,760	20,554	20,082	19,320	21,386	20,641	20,317	21,023	22,016	22,419	22,998	250,686
Tesoro Refinery Sales	5,057	5,095	5,582	5,556	5,769	6,053	6,340	6,226	6,042	5,562	5,476	5,499	68,257
TransCanada Keystone Pipeline	10,390	9,384	10,390	10,055	10,390	10,055	10,390	10,390	10,055	10,390	10,055	10,390	122,334
Westmoreland Coal Sales	2,180	2,083	1,944	1,812	1,623	1,484	1,447	1,467	1,585	1,744	1,970	2,165	21,504
Total Sales (Residential, SC&I and LC&I)	256,970	244,240	236,025	220,744	219,356	222,594	266,439	253,210	235,681	224,805	244,910	267,952	2,892,925
Other Public Sales	3,533	3,509	3,470	3,278	3,764	4,135	4,883	4,571	3,977	3,369	3,342	3,552	45,383
Street & Highway Lighting Sales	2,708	2,527	2,597	2,470	2,487	2,305	2,403	2,473	2,481	2,620	2,690	2,706	30,467
Interdepartmental Sales	39	39	36	33	30	27	32	29	31	31	36	41	404
Total Billed Sales - MWh	263,250	250,315	242,128	226,525	225,637	229,061	273,757	260,283	242,170	230,825	250,978	274,251	2,969,179
Company Use	725	670	666	646	661	672	738	743	634	644	691	703	8,193
Total Energy	263,975	250,985	242,794	227,171	226,298	229,733	274,495	261,026	242,804	231,469	251,669	274,954	2,977,372
Total Requirements (Energy + Losses)	284,855	270,838	262,000	245,141	244,197	247,904	296,207	281,673	262,011	249,778	271,576	296,702	3,212,882
# of Large Comm & Ind Customers	1,070	1,073	1,074	1,079	1,085	1,086	1,088	1,088	1,088	1,086	1,084	1,082	1,082
# of Other Public Customers	858	858	860	867	879	881	882	880	874	864	858	853	868
# of Street & Highway Lighting Customers	647	645	643	645	645	647	626	628	629	632	633	636	638
Peak Demand Net of DSM Programs	493.2	475.0	436.2	408.4	376.8	519.2	580.9	554.9	467.9	403.7	465.6	521.8	580.9
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	493.2	475.0	436.2	408.4	376.8	519.2	570.6	554.9	467.9	403.7	465.6	521.8	570.6

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

INTEGRATED SYSTEM YEAR 2017

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,030.4	947.4	866.7	750.4	728.3	772.3	1,023.1	931.8	797.7	738.4	888.2	1,046.5	10,521.4
# of Residential Customers	92,309	92,316	92,317	92,268	92,351	92,466	92,551	92,607	92,624	92,663	92,695	92,678	92,487
Total Residential Sales - MWh	95,111	87,460	80,010	69,240	67,260	71,415	94,686	86,292	73,886	68,426	82,328	96,984	973,095
Use per Small Comm & Ind Customer - kWh	2,971.7	2,831.8	2,766.7	2,460.1	2,501.9	2,499.7	3,074.2	2,924.6	2,683.1	2,505.0	2,784.8	2,994.3	32,995.5
# of Small Comm & Ind Customers	17,904	17,888	17,902	18,054	18,265	18,374	18,393	18,425	18,386	18,231	18,162	18,153	18,178
Total Small Comm & Ind Sales - MWh	53,206	50,656	49,530	44,414	45,698	45,930	56,543	53,885	49,331	45,668	50,578	54,356	599,795
General Large Comm & Ind Sales	73,079	71,790	69,781	71,063	70,785	67,866	78,632	76,719	75,555	72,554	74,336	78,261	880,421
Sabin Metals Sales	1,738	1,783	1,840	1,881	1,868	1,776	1,902	1,849	1,842	1,855	1,501	1,404	21,239
Encore Oil Sales	20,509	20,093	20,899	20,420	19,644	21,745	20,989	20,659	21,376	22,386	22,795	23,384	254,899
Tesoro Refinery Sales	5,182	5,221	5,720	5,694	5,911	6,202	6,497	6,380	6,191	5,700	5,612	5,634	69,944
TransCanada Keystone Pipeline	10,390	9,384	10,390	10,055	10,390	10,055	10,390	10,390	10,055	10,390	10,055	10,390	122,334
Westmoreland Coal Sales	2,180	2,083	1,944	1,812	1,623	1,484	1,447	1,467	1,585	1,744	1,970	2,165	21,504
Total Sales (Residential, SC&I and LC&I)	261,395	248,470	240,114	224,579	223,179	226,473	271,086	257,641	239,821	228,723	249,175	272,578	2,943,231
Other Public Sales	3,542	3,519	3,479	3,286	3,774	4,147	4,897	4,584	3,987	3,379	3,351	3,563	45,508
Street & Highway Lighting Sales	2,708	2,528	2,597	2,470	2,487	2,306	2,404	2,473	2,481	2,620	2,690	2,706	30,470
Interdepartmental Sales	39	39	35	32	30	27	32	29	31	31	35	41	401
Total Billed Sales - MWh	267,684	254,556	246,225	230,367	229,470	232,953	278,419	264,727	246,320	234,753	255,251	278,888	3,019,610
Company Use	725	670	666	646	661	672	738	743	634	644	691	703	8,193
Total Energy	268,409	255,226	246,891	231,013	230,131	233,625	279,157	265,470	246,954	235,397	255,942	279,591	3,027,803
Total Requirements (Energy + Losses)	289,640	275,414	266,420	249,285	248,335	252,103	301,238	286,469	266,487	254,017	276,186	301,706	3,267,300
# of Large Comm & Ind Customers	1,075	1,078	1,079	1,084	1,089	1,092	1,093	1,094	1,092	1,091	1,089	1,088	1,087
# of Other Public Customers	858	858	860	867	879	881	882	880	874	864	858	853	868
# of Street & Highway Lighting Customers	647	645	643	645	645	647	626	628	629	632	633	636	638
Peak Demand Net of DSM Programs	501.2	482.7	443.1	415.0	382.5	527.1	589.6	563.1	474.8	409.7	472.8	529.8	589.6
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	501.2	482.7	443.1	415.0	382.5	527.1	579.3	563.1	474.8	409.7	472.8	529.8	579.3

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**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

INTEGRATED SYSTEM YEAR 2018

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,040.4	956.7	875.2	757.7	735.4	779.9	1,033.0	940.9	805.4	745.6	896.8	1,056.6	10,624.1
# of Residential Customers	92,659	92,666	92,666	92,617	92,702	92,817	92,903	92,958	92,976	93,014	93,046	93,031	92,838
Total Residential Sales - MWh	96,404	88,649	81,100	70,178	68,177	72,384	95,973	87,467	74,887	69,355	83,447	98,297	986,321
Use per Small Comm & Ind Customer - kWh	3,016.0	2,874.0	2,808.1	2,497.0	2,539.4	2,537.0	3,120.1	2,968.4	2,723.2	2,542.5	2,826.3	3,039.1	33,488.5
# of Small Comm & Ind Customers	18,081	18,065	18,078	18,231	18,445	18,555	18,574	18,606	18,567	18,410	18,341	18,332	18,357
Total Small Comm & Ind Sales - MWh	54,532	51,918	50,764	45,523	46,839	47,074	57,953	55,230	50,561	46,807	51,838	55,712	614,751
General Large Comm & Ind Sales	74,491	73,179	71,132	72,436	72,151	69,182	80,154	78,203	77,016	73,953	75,770	79,770	897,437
Sabin Metals Sales	1,738	1,783	1,840	1,881	1,868	1,776	1,902	1,849	1,842	1,855	1,501	1,404	21,239
Encore Oil Sales	20,853	20,430	21,250	20,763	19,974	22,110	21,341	21,006	21,735	22,762	23,179	23,778	259,181
Tesoro Refinery Sales	5,307	5,347	5,857	5,831	6,053	6,351	6,653	6,534	6,340	5,837	5,747	5,767	71,624
TransCanada Keystone Pipeline	10,390	9,384	10,390	10,055	10,390	10,055	10,390	10,390	10,055	10,390	10,055	10,390	122,334
Westmoreland Coal Sales	2,180	2,083	1,944	1,812	1,623	1,484	1,447	1,467	1,585	1,744	1,970	2,165	21,504
Total Sales (Residential, SC&I and LC&I)	265,895	252,773	244,277	228,479	227,075	230,416	275,813	262,146	244,021	232,703	253,507	277,283	2,994,391
Other Public Sales	3,552	3,527	3,489	3,297	3,785	4,158	4,911	4,598	3,998	3,388	3,360	3,573	45,636
Street & Highway Lighting Sales	2,709	2,528	2,597	2,470	2,487	2,306	2,405	2,473	2,482	2,620	2,691	2,706	30,474
Interdepartmental Sales	39	39	35	32	30	26	30	28	31	30	35	39	394
Total Billed Sales - MWh	272,195	258,867	250,398	234,278	233,377	236,906	283,159	269,245	250,532	238,741	259,593	283,601	3,070,895
Company Use	725	670	666	646	661	672	738	743	634	644	691	703	8,193
Total Energy	272,920	259,537	251,064	234,924	234,038	237,578	283,897	269,988	251,166	239,385	260,284	284,304	3,079,088
Total Requirements (Energy + Losses)	294,509	280,066	270,923	253,507	252,550	256,370	306,353	291,344	271,033	258,321	280,872	306,793	3,322,641
# of Large Comm & Ind Customers	1,080	1,083	1,084	1,088	1,095	1,096	1,099	1,099	1,097	1,096	1,094	1,092	1,092
# of Other Public Customers	858	858	860	867	879	881	882	880	874	864	858	853	868
# of Street & Highway Lighting Customers	647	645	643	645	645	647	626	628	629	632	633	636	638
Peak Demand Net of DSM Programs	509.0	490.3	450.1	421.5	388.1	534.9	598.4	571.4	481.9	415.9	480.3	538.2	598.4
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	509.0	490.3	450.1	421.5	388.1	534.9	588.1	571.4	481.9	415.9	480.3	538.2	588.1

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

INTEGRATED SYSTEM YEAR 2019

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,050.5	966.0	883.7	765.1	742.6	787.5	1,043.1	950.1	813.3	752.9	905.5	1,066.8	10,727.5
# of Residential Customers	93,000	93,006	93,008	92,958	93,042	93,157	93,244	93,300	93,318	93,356	93,388	93,372	93,179
Total Residential Sales - MWh	97,698	89,844	82,190	71,124	69,093	73,359	97,265	88,641	75,897	70,292	84,568	99,609	999,579
Use per Small Comm & Ind Customer - kWh	3,061.1	2,917.0	2,850.0	2,534.2	2,577.4	2,575.1	3,166.5	3,012.7	2,763.8	2,580.3	2,868.5	3,084.5	33,988.6
# of Small Comm & Ind Customers	18,258	18,243	18,256	18,411	18,626	18,737	18,758	18,789	18,750	18,592	18,522	18,512	18,538
Total Small Comm & Ind Sales - MWh	55,890	53,214	52,030	46,657	48,006	48,249	59,398	56,606	51,822	47,973	53,130	57,100	630,075
General Large Comm & Ind Sales	75,933	74,594	72,507	73,836	73,547	70,524	81,707	79,719	78,507	75,383	77,236	81,311	914,804
Sabin Metals Sales	1,738	1,783	1,840	1,881	1,868	1,776	1,902	1,849	1,842	1,855	1,501	1,404	21,239
Encore Oil Sales	21,203	20,774	21,607	21,112	20,309	22,482	21,699	21,358	22,100	23,145	23,568	24,102	263,459
Tesoro Refinery Sales	5,432	5,473	5,995	5,968	6,196	6,501	6,810	6,688	6,490	5,975	5,882	5,902	73,312
TransCanada Keystone Pipeline	10,390	9,384	10,390	10,055	10,390	10,055	10,390	10,390	10,055	10,390	10,055	10,390	122,334
Westmoreland Coal Sales	2,180	2,083	1,944	1,812	1,623	1,484	1,447	1,467	1,585	1,744	1,970	2,165	21,504
Total Sales (Residential, SC&I and LC&I)	270,464	257,149	248,503	232,445	231,032	234,430	280,618	266,718	248,298	236,757	257,910	281,983	3,046,306
Other Public Sales	3,562	3,538	3,498	3,305	3,795	4,171	4,925	4,611	4,009	3,398	3,370	3,582	45,764
Street & Highway Lighting Sales	2,709	2,528	2,598	2,470	2,487	2,306	2,405	2,473	2,482	2,621	2,692	2,706	30,477
Interdepartmental Sales	37	37	34	31	30	26	30	28	29	29	35	39	385
Total Billed Sales - MWh	276,772	263,252	254,633	238,251	237,344	240,933	287,978	273,830	254,818	242,805	264,007	288,310	3,122,932
Company Use	725	670	666	646	661	672	738	743	634	644	691	703	8,193
Total Energy	277,497	263,922	255,299	238,897	238,005	241,605	288,716	274,573	255,452	243,449	264,698	289,013	3,131,125
Total Requirements (Energy + Losses)	299,446	284,799	275,493	257,794	256,831	260,716	311,554	296,292	275,659	262,706	285,635	311,874	3,378,799
# of Large Comm & Ind Customers	1,085	1,087	1,090	1,095	1,099	1,101	1,103	1,103	1,103	1,102	1,099	1,097	1,097
# of Other Public Customers	858	858	860	867	879	881	882	880	874	864	858	853	868
# of Street & Highway Lighting Customers	647	645	643	645	645	647	626	628	629	632	633	636	638
Peak Demand Net of DSM Programs	517.0	497.9	457.2	428.0	394.0	543.0	607.4	580.1	489.2	422.1	487.8	546.7	607.4
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	517.0	497.9	457.2	428.0	394.0	543.0	597.1	580.1	489.2	422.1	487.8	546.7	597.1

**MONTHLY FORECASTS
SALES AND ENERGY (MWH)
PEAK DEMAND (MW)**

INTEGRATED SYSTEM YEAR 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Use per Residential Customer - kWh	1,060.8	975.4	892.3	772.6	749.9	795.1	1,053.3	959.4	821.2	760.2	914.4	1,077.2	10,832.0
# of Residential Customers	93,332	93,339	93,339	93,290	93,374	93,492	93,576	93,633	93,652	93,690	93,722	93,706	93,512
Total Residential Sales - MWh	99,005	91,041	83,286	72,076	70,017	74,337	98,564	89,831	76,907	71,227	85,699	100,936	1,012,926
Use per Small Comm & Ind Customer - kWh	3,106.9	2,960.7	2,892.5	2,572.0	2,615.7	2,613.6	3,213.9	3,057.7	2,805.1	2,619.0	2,911.5	3,130.6	34,496.7
# of Small Comm & Ind Customers	18,438	18,421	18,436	18,592	18,810	18,921	18,942	18,974	18,934	18,774	18,703	18,694	18,720
Total Small Comm & Ind Sales - MWh	57,285	54,539	53,327	47,819	49,202	49,452	60,877	58,016	53,112	49,169	54,454	58,523	645,775
General Large Comm & Ind Sales	77,401	76,038	73,913	75,266	74,972	71,896	83,293	81,267	80,030	76,842	78,730	82,882	932,530
Sabin Metals Sales	1,738	1,783	1,840	1,881	1,868	1,776	1,902	1,849	1,842	1,855	1,501	1,404	21,239
Encore Oil Sales	21,381	20,948	21,788	21,289	20,480	22,671	21,882	21,538	22,286	23,339	23,766	24,305	265,673
Tesoro Refinery Sales	5,557	5,598	6,133	6,105	6,338	6,651	6,967	6,842	6,639	6,112	6,017	6,036	74,995
TransCanada Keystone Pipeline	10,390	9,384	10,390	10,055	10,390	10,055	10,390	10,390	10,055	10,390	10,055	10,390	122,334
Westmoreland Coal Sales	2,180	2,083	1,944	1,812	1,623	1,484	1,447	1,467	1,585	1,744	1,970	2,165	21,504
Total Sales (Residential, SC&I and LC&I)	274,937	261,414	252,621	236,303	234,890	238,322	285,322	271,200	252,456	240,678	262,192	286,641	3,096,976
Other Public Sales	3,571	3,548	3,509	3,315	3,806	4,182	4,938	4,623	4,022	3,409	3,381	3,593	45,897
Street & Highway Lighting Sales	2,709	2,529	2,599	2,471	2,489	2,307	2,405	2,474	2,482	2,621	2,692	2,707	30,485
Interdepartmental Sales	37	36	34	31	29	26	30	27	29	29	34	39	381
Total Billed Sales - MWh	281,254	267,527	258,763	242,120	241,214	244,837	292,695	278,324	258,989	246,737	268,299	292,980	3,173,739
Company Use	725	670	666	646	661	672	738	743	634	644	691	703	8,193
Total Energy	281,979	268,197	259,429	242,766	241,875	245,509	293,433	279,067	259,623	247,381	268,990	293,683	3,181,932
Total Requirements (Energy + Losses)	304,283	289,411	279,951	261,969	261,008	264,928	316,644	301,141	280,159	266,949	290,268	316,913	3,433,624
# of Large Comm & Ind Customers	1,089	1,093	1,094	1,099	1,105	1,107	1,109	1,109	1,108	1,106	1,104	1,102	1,102
# of Other Public Customers	858	858	860	867	879	881	882	880	874	864	858	853	868
# of Street & Highway Lighting Customers	647	645	643	645	645	647	626	628	629	632	633	636	638
Peak Demand Net of DSM Programs	525.1	505.7	464.4	434.9	399.7	550.9	616.3	588.5	496.4	428.2	495.1	554.9	616.3
Interruptible Demand	-	-	-	-	-	-	10.3	-	-	-	-	-	10.3
Peak Demand Net of all DSM	525.1	505.7	464.4	434.9	399.7	550.9	606.0	588.5	496.4	428.2	495.1	554.9	606.0