

## Renewable, Recycled, and Conserved Energy Objective Annual Report for 2016

Directions: Fill in each orange box, save your responses, and email the completed spreadsheet back to darren.kearney(at)state.sd.us by July 1, 2017. Your completed spreadsheet will fulfill the reporting requirements in SDCL 49-34A-105. If you wish to supplement the spreadsheet with an additional narrative report, please include that report in your submission. If you have any questions, please contact Darren Kearney at 605.773.3201 or darren.kearney(at)state.sd.us.

- 1  MWH of electricity delivered to retail customers in South Dakota (SD retail sales) in 2016
- 2  MWH of electricity obtained from a hydroelectric facility in 2016 with an inservice date before July 1, 2008 (old hydro)
- 3  MWH of electricity obtained from qualifying renewable or recycled facilities
- 4  MWH of qualifying conserved energy
- 5 Please provide a brief narrative that describes steps taken to meet the state renewable, recycled, and conserved objective over time and identifies any challenges or barriers encountered in meeting the objective.

MRES has developed a plan to meet the South Dakota Renewable, Recycled and Conserved Energy Objective (RRCEO) goal of 10% by 2017 as part of its overall renewable energy goals for members in Minnesota, North Dakota, and South Dakota. The SD RRCEO has been integrated into the MRES resource planning process, and MRES is committed to pursuing renewable energy as part of its balanced portfolio to supply its member communities with reliable and cost-effective power supply.

MRES acquires renewable energy resources through its exclusive power supply arrangement with Western Minnesota Municipal Power Agency (Western Minnesota), and through power purchase agreements with independent developers. At the present time, all MRES renewable resources are based on wind generation. MRES has included wind energy in its power supply program since 2002. Currently, MRES contracts for the output of the following wind generating resources:

- Worthington (MN) Wind Project, 3.7 MW
- Marshall (MN) Wind Project, 18.7 MW
- Odin (MN) Wind Project, 20.0 MW
- Rugby (ND) Wind Project, 40.0 MW
- Hancock (IA) Wind Project, 3.3 MW

MRES purchases the output of the units in each of these wind projects, and owns all of the environmental attributes associated with such generation. These resources total 85.7 MW of nameplate capacity, most of which is dedicated to meeting the Renewable Energy Objective (REO) goals of North Dakota and South Dakota, and the requirements of the Minnesota Renewable Energy Standard. MRES intends to meet its REO goals by utilizing the contracted wind generation, associated renewable attributes, and conserved/recycled energy to meet the MRES SD RRCEO benchmark for each year.

At this time, MRES does not envision any obstacles to meeting the RRCEO goals established through 2019. MRES continues to evaluate opportunities for additional renewable resources to ensure continuing compliance with the various state REOs and the Minnesota RES. In 2019 and beyond, MRES will evaluate its renewable energy portfolio and the energy market to determine cost-effective purchases or the acquisition of such resources. MRES seeks out projects that meet its needs as well as the needs of its members as part of our continuing commitment to expand the role of renewable energy used to serve our member communities.

**If the Company is claiming renewable MWH in (3) above or retiring RECs in other jurisdictions, please provide the following per ARSD 20:10:38:07:**

6  Total amount of RECs retired for CY2016 compliance across all jurisdictions

7  Amount of RECs retired to meet South Dakota's renewable energy objective for CY2016

8 For RECs listed above in (7), please provide the tracking system(s) RECs were retired under:

Midwest Renewable Energy Tracking System (MRETS)

9 For RECs listed above in (7), please provide the name and location of each facility that produced the retired RECs:

Rugby Wind Project near Rugby, N.D., in Pierce County

10 Amount of RECs that the provider retired to meet a renewable energy objective or renewable energy standard in each of the other states it provides electricity services:

259,197: Minnesota RES (253,186), ND RREO (6,011) and Green Pricing in Minnesota (722)

11 For RECs listed above in (10), please provide the name and location of each facility that produced the retired RECs:

Marshall Wind Project near Marshall, Minn., in Lyon County  
Rugby Wind Project near Rugby, N.D., in Pierce County  
Worthington Wind Project near Worthington, Minn., in Nobles County

**If the Company is claiming conserved MWH in (4) above, please provide the following per ARSD 20:10:38:03 through 06:**

12  MWH of conserved energy achieved through energy efficiency

13 A general explanation of each energy efficiency impact evaluation or estimate, the rationale for using each energy efficiency impact evaluation or estimate, and the amount of expenditures spent on energy efficiency measures for the calendar year (ARSD 20:10:38:03).

Energy impacts of the MRES energy efficiency measures are primarily determined by the Minnesota Technical Resource Manual (MN TRM). For prescriptive measures that are not in the MN TRM, MRES has retained Franklin Energy Services of Port Washington, WI, to research and calculate deemed savings for use in our program. Savings estimates for custom measures are typically submitted by the customer's engineer or vendor and then reviewed and approved by an MRES staff engineer and/or a consulting engineering firm such as Franklin Energy or The Weidt Group. Projects that have potential savings of 1 million kWhs or more, and select smaller projects, are pre- and post-metered, in addition to the engineering review. Post inspections are completed on minimum of 10 percent of commercial and industrial projects and on 100 percent of custom projects, with the exception of small custom lighting projects. Spending on energy efficiency measures in South Dakota in 2016 totaled \$966,275, which included \$618,416 in incentives and \$347,859 in administrative expenses.

14  MWH of conserved energy achieved through demand response ((12) and (14) should sum to (4))

15 A general explanation of each demand response impact evaluation or estimate, the rationale for using each demand response impact evaluation or estimate, and the amount of expenditures spend on demand response measures for the calendar year (ARSD 20:10:38:06).

MRES collects data on the demand response efforts of our South Dakota members through a Verification Payment Program whereby members are encouraged to use direct load control of central air conditioners and electric water heaters to remove load during peak times. MRES members report the number of devices controlled and annually test a statistical sampling of the devices to ensure they are working properly. MRES pays an incentive of \$5.00 per kW per year of controlled load. The deemed kW savings, based on the MN TRM, are 1 kW per central air conditioner and .35 kW per electric water heater. In 2016, three SD members controlled 3,725 air conditioners and 1,219 water heaters for total controlled kW of 4,152 KW. To determine MWHs of conserved energy, MRES estimates that members control air conditioners an average of 80 hours per year and control water heaters an average of 150 hours per year for total savings of 362 MWHs in 2016. The number of hours controlled fluctuates greatly from year to year. At this time, all load control is done using on-way communication to the load control device, so exact savings cannot be measured. In 2016, MRES paid \$20,758 in incentives to our members to verify and report on the operation of their load control systems. We did not track administrative costs for this activity and we don't have access to the costs incurred by MRES members to operate the system.

Generation Mix Attributable to SD in 2016

Utility Name	Coal	Hydro	Nuclear	Wind	Natural Gas	Oil	Biomass	Solid Waste	Waste Heat	Purchases	Other - <i>Please Specify</i>	Total Check
Missouri River Energy Services	25.12%	40.06%	5.54%	5.65%	0.86%	0.00%	0.00%	0.00%	0.00%	22.76%	0.00%	100.00%

**Other:** For any generation listed under "Other", please provide the generation source and percentage associated with each.

## SDCLs

### 49-34A-101

**State renewable, recycled, and conserved energy objective established.** There is hereby established a state renewable, recycled, and conserved energy objective that [ten percent of all electricity sold at retail within the state by the year 2015](#) be obtained from renewable, recycled, and conserved energy sources. In the case of renewable and recycled energy, the objective shall be measured by [qualifying megawatt hours delivered at retail or by certificates representing credits purchased and retired to offset nonqualifying retail sales](#). In the case of conserved energy, the objective shall be measured by methods established by rules promulgated by the commission pursuant to chapter 1-26. This objective is [voluntary, and there is no penalty or sanction for a retail provider of electricity that fails to meet this objective](#). The objective applies to each retail provider of electricity in the state, regardless of the ownership status of the electricity retailer. Any municipal or cooperative utility that receives wholesale electricity through a municipal power agency or generation and transmission cooperative may aggregate the utility's renewable, recycled, and conserved energy objective resources to meet this objective.

Source: SL 2008, ch 244, § 1; SL 2009, ch 241, § 1.

### 49-34A-102 **Qualifications for meeting renewable, recycled, and conserved energy objective.**

Electricity qualifies for meeting the state renewable, recycled, and conserved energy objective if the source meets the requirements of [§§ 49-34A-94 to 49-34A-96](#), inclusive, and the commission's rules for tracking, recording, and verifying renewable energy certificates. Electricity also qualifies for meeting the state renewable, recycled, and conserved energy objective if the source is [conserved energy and meets the requirements established by rules promulgated by the commission](#) pursuant to chapter 1-26.

Source: SL 2008, ch 244, § 2; SL 2009, ch 241, § 2.

### 49-34A-103 **Calculation of amount of electricity from renewable, recycled, and conserved energy source.**

For the purpose of calculating the amount of electricity from a renewable, recycled, and conserved energy source needed to meet the state renewable and recycled energy objective, a retail provider may deduct from the [provider's baseline of total retail sales the proportion of electricity obtained from a hydroelectric facility with an inservice date](#) before July 1, 2008.

Source: SL 2008, ch 244, § 3; SL 2009, ch 241, § 3.

### 49-34A-104

**Evaluation of use as reasonable and cost effective.** Before using new renewable, recycled, and conserved energy after July 1, 2008, to meet the objective, the retail provider or the provider's generation supplier shall make an evaluation to determine if the use of new renewable, recycled, and conserved energy is reasonable and cost effective considering other electricity alternatives. After making such an evaluation and considering the state renewable, recycled, and conserved energy objective, the retail provider or the provider's generation supplier may use the electricity alternative that best meets the provider's resource or customer needs.

Source: SL 2008, ch 244, § 4; SL 2009, ch 241, § 4.

**49-34A-105 Annual reports concerning renewable, recycled, and conserved energy objective.** Beginning on July 1, 2009, each retail provider shall annually report to the commission on the provider's energy sales during the twelve month period ending on the preceding December thirty-first. This report shall include **information regarding qualifying electricity delivered and renewable and recycled energy certificates purchased and retired as a percentage of annual retail sales, the amount of conserved energy as a percentage of annual retail sales, and a brief narrative report that describes steps taken to meet the state renewable, recycled, and conserved energy objective over time and identifies any challenges or barriers encountered in meeting the objective.** The **last annual report shall be made on July 1, 2017.** The commission shall make the data and narrative reports available and accessible to the public on the internet. The commission shall compile the data obtained from the reports and submit the data to the Legislature by the following January first. A distribution cooperative may aggregate the cooperative's reporting through generation and transmission cooperatives and a municipal utility may aggregate the utility's reporting through a municipal power agency.

Source: SL 2008, ch 244, § 5; SL 2009, ch 241, § 5.

**49-34A-106 Purchase and retirement of renewable energy and recycled energy credits.** A portion or all of the renewable energy and recycled energy objective **may be met by the purchase and retirement of renewable energy and recycled energy certificates representing credits** from a qualified source and facility pursuant to §§ 49-34A-101 to 49-34A-106, inclusive. Renewable energy and recycled energy certificates **do not need to be acquired from an in-state facility.**

Source: SL 2008, ch 244, § 6.

## **ARSDs**

- 20:10:38:01** Definitions. Terms defined in SDCL 49-34A-1 have the same meaning when used in this chapter. In addition, terms used in this chapter mean:
- (1) "Conserved energy," the reduction of energy or capacity usage achieved through energy efficiency measures and demand response measures;
  - (2) "Demand response," temporary changes in energy use by end use customers from their normal consumption patterns in response to changes in the price of energy over time, in response to periods of high energy use, or in response to incentive payments designed to induce lower energy use at times of high wholesale market prices, high energy use, or when system reliability is jeopardized;
  - (3) "Demand response baseline energy use," an estimate of the electricity that would have been consumed in the absence of the implementation of a demand response measure;
  - (4) "Demand response impact evaluation," the performance of studies and activities intended to determine demand response reduction;
  - (5) "Demand response measure," any measure designed, intended, or used to implement demand response;
  - (6) "Demand response reduction," the reduction of electrical consumption achieved during the time a demand response measure was implemented as compared to the demand response baseline energy use;
  - (7) "Energy efficiency," the decrease in electricity requirements of specific customers during any selected period with end-use services of such customers held constant;
  - (8) "Energy efficiency baseline energy use," the energy consumption estimated to have occurred before the energy efficiency measure was implemented and is representative of normal operations;
  - (9) "Energy efficiency impact evaluation," the performance of studies and activities intended to determine the actual savings and other effects from energy efficiency measures;
  - (10) "Energy efficiency measure," any measure designed, intended, or used to improve energy efficiency;

- (11) "Location," the county and state where the facility is located;
- (12) "Post-installation energy use," energy consumption that occurs after an energy efficiency measure is implemented;
- (13) "Reported conserved energy savings," the capability of installed energy efficiency and demand response measures to result in conserved energy. Reported conserved energy savings are an estimate of electricity savings from individual projects where engineering or other calculations were submitted with project proposals for specific energy conservation projects or where deemed savings are used.

Source: 38 SDR 116, effective January 10, 2012.

General Authority: SDCL 49-34A-27, 49-34A-96, 49-34A-101.

Law Implemented: SDCL 49-34A-96, 49-34A-101, 49-34A-102, 49-34A-105, 49-34A-106.

**20:10:38:02** Applicability of rules. The provisions of §§ 20:10:38:03 through 20:10:38:06, inclusive, [apply only to retail providers who use conserved energy sources to meet the renewable, recycled, and conserved energy objective](#) established by § 49-34A-101. Municipal and cooperative retail providers may aggregate the conserved energy with their wholesale municipal power agency or generation and transmission cooperative suppliers. The retail providers [shall follow the requirements in this chapter to determine the amount of conserved energy](#)

Source: 38 SDR 116, effective January 10, 2012.

General Authority: SDCL 49-34A-27, 49-34A-96, 49-34A-101.

Law Implemented: SDCL 49-34A-96, 49-34A-101, 49-34A-102, 49-34A-105, 49-34A-106.

**20:10:38:03** Measurement and verification of energy efficiency measures. A retail provider of electricity [shall use a deemed savings approach or a measured savings approach](#), as appropriate, to estimate or determine the amount of conserved energy achieved through an energy efficiency measure. The [amount of conserved energy achieved through energy efficiency measures shall be validated by the use of an energy efficiency impact evaluation](#). An [energy efficiency impact evaluation shall be performed at appropriate periodic intervals](#) that may be no more frequent than once every three years and shall be consistent with generally accepted industry guidelines for measurement and verification. As necessary, an energy efficiency impact evaluation shall include adjustments to account for factors that are beyond the control of the retail provider of electricity or energy consumer in order to bring baseline energy use and post-installation energy use subject to the same or similar conditions. Adjustments may include weather corrections, occupancy levels and hours, change of building or facility use, and production levels. [The retail provider shall provide a general explanation of each energy efficiency impact evaluation or estimate, the rationale for using each energy efficiency impact evaluation or estimate, and the amount of expenditures spent on energy efficiency measures for the calendar year.](#)

If an energy efficiency impact evaluation has not been completed at the time the retail provider's annual report is due, the retail provider may use reported conserved energy savings for the time period the energy efficiency measure was in effect. If the energy efficiency impact evaluation has been completed at the time the retail provider's annual report is due, the retail provider shall report the amount of conserved energy achieved through energy efficiency measures as found in the evaluation.

Source: 38 SDR 116, effective January 10, 2012.

General Authority: SDCL 49-34A-27, 49-34A-96, 49-34A-101.

Law Implemented: SDCL 49-34A-96, 49-34A-101, 49-34A-102, 49-34A-105, 49-34A-106.

**20:10:38:04** Deemed savings approach. A deemed savings approach uses pre-determined, validated estimates of energy savings attributable to a particular energy efficiency measure based upon engineering calculations, baseline studies, or reasonable assumptions. A retail provider of electricity may use a deemed savings approach for projects that involve simple energy efficiency measures with documented per-measure values.

Source: 38 SDR 116, effective January 10, 2012.  
General Authority: SDCL 49-34A-27, 49-34A-96, 49-34A-101.  
Law Implemented: SDCL 49-34A-96, 49-34A-101, 49-34A-102, 49-34A-105, 49-34A-106.

**20:10:38:05** Measured savings approaches. A measured savings approach shall be based on one or more of the following methods:

- (1) The use of direct metering and monitoring to measure baseline energy use and post-installation energy use;
- (2) The use of engineering methods that use standard formulas and assumptions to calculate the energy use of baseline and post-installation energy systems;
- (3) The use of statistical analyses to estimate baseline energy use and post-installation energy use; or
- (4) The use of computer models to predict the change in energy use after energy efficiency measures are implemented.

Source: 38 SDR 116, effective January 10, 2012.  
General Authority: SDCL 49-34A-4(2), 49-34A-27, 49-34A-101.  
Law Implemented: SDCL 49-34A-96, 49-34A-101, 49-34A-102, 49-34A-105, 49-34A-106.

**20:10:38:06** Measurement and verification of demand response measures. A retail provider of electricity shall use metering data collection and analyses, statistical estimations, engineering analyses, or a combination of these methods to estimate or determine the amount of conserved energy achieved through a demand response measure. The amount of conserved energy achieved through demand response measures shall be validated by the use of a demand response impact evaluation. A demand response impact evaluation shall be performed at appropriate periodic intervals consistent with generally accepted industry guidelines for measurement and verification. The retail provider shall provide a general explanation of each demand response impact evaluation or estimate, the rationale for using each demand response impact evaluation or estimate, and the amount of expenditures spent on demand response measures for the calendar year.

If a demand response impact evaluation has not been completed at the time the retail provider's annual report is due, the retail provider may use reported conserved energy savings for the time period the demand response measure was in effect. If the demand response impact evaluation has been completed at the time the retail provider's annual report is due, the retail provider shall report the amount of conserved energy achieved through demand response measures as found in the evaluation.

Source: 38 SDR 116, effective January 10, 2012.  
General Authority: SDCL 49-34A-4(2), 49-34A-27, 49-34A-101.  
Law Implemented: SDCL 49-34A-96, 49-34A-101, 49-34A-102, 49-34A-105, 49-34A-106.

**20:10:38:07** Renewable energy credit requirements. A provider of electricity that generates electricity from renewable electricity or recycled energy and that retires renewable energy credits to meet the renewable, recycled, and conserved energy objective shall provide to the commission:

- (1) The amount of renewable energy credits that the provider retired, the amount of renewable energy credits that the provider retired to meet South Dakota's renewable energy objective, the tracking system the renewable energy credits were retired under, and the name and location of each facility that produced the retired renewable energy credits; and
- (2) The amount of renewable energy credits that the provider retired to meet a renewable energy objective or renewable energy standard in each of the other states it provides electricity services, and the name and location of each facility that produced the retired renewable energy credits.

The information shall be provided for the preceding calendar year by July first.

Source: 38 SDR 116, effective January 10, 2012.  
General Authority: SDCL 49-34A-4(2), 49-34A-27, 49-34A-96.  
Law Implemented: SDCL 49-34A-27, 49-34A-94, 49-34A-95, 49-34A-96, 49-34A-101, 49-34A-102.