

For the User of the LWECS Power Production Annual Report Spreadsheets (version 10/23/2012): request blank spreadsheets from cynthia.kahrman@state.mn.us

The Minnesota Department of Commerce Energy Facility Permitting (EFP) staff has developed this standard format for reporting required by conditions in Large Wind Energy Conversion System (LWECS) permits issued by the Minnesota Public Utilities Commission.

The LWECS permit conditions that these spreadsheets are for are:

<i>Spreadsheet in this Workbook</i>	<i>Permit Condition (this is typical numbering for most permits, although the numbering in any particular permit might vary)</i>
page 1	III.H.1. and III.H.2. or 6.8 and 6.9, Project Energy Production and Wind Resource Use
page 2	III.H.1. and III.H.2. or 6.8 and 6.9, part of reporting on operational status and availability
page 3	III.J.4. or 10.2, Power Purchase Agreement (used in the annual report to update this information if any change has occurred)
page 4	III.I.1. or 8.1, Turbine and GIS data (used in the annual report to update turbine information if any change has occurred, such as if a turbine has been taken out of service)

THIS VERSION OF THE WORKBOOK CONTAINS EXAMPLES TO FOLLOW. A BLANK VERSION OF THE WORKBOOK IS IN A SEPARATE FILE.

Upload as a spreadsheet, not a PDF. You may make the file read-only.

Providing the data in a standard spreadsheet format makes for more consistent reporting for all LWECS and will allow EFP to better compare the reporting to permit requirements, to review for accuracy and to use the data more effectively.

These spreadsheets also provide a simple way for the Permittee to provide the required summary data by **only needing to complete the fields in GRAY**; formulas in the spreadsheet complete the calculations. The spreadsheets will also provide a convenient way to provide updated information if there are changes to power purchasers or if a turbine is taken out of service.

This is the information that is needed in order for EFP staff to review the filing and make a recommendation to the Public Utilities Commission.

If you have questions about these spreadsheets, please contact Cynthia Kahrman @ 651-296-9655 or cynthia.kahrman@state.mn.us

LWECS ENERGY PRODUCTION, ANNUAL REPORT TO MINNESOTA PUBLIC UTILITIES COMMISSION										This EXAMPLE prints to 11 X 17 inch paper.					DATE OF REPORT		02/01/13		Developed by MN Dept. of Commerce EFP staff		PAGE 1
LWECS NAME:		ABC WIND FARM (EXAMPLE)			DOCKET NUMBER:		20-2020		NUMBER OF TURBINES:		7		(MM/DD/YYYY):						Version 10/23/2012		
Section D. POWER PRODUCTION AND WIND RESOURCE REPORTING, standardized to make this reporting more consistent for all LWECS. We are providing this standard format so that we can make comparisons to the permit, review for accuracy and use the data more effectively.										IN THIS SPACE BELOW: Note major outages, turbine performance improvements, or major repairs, or if any turbines have been taken out of service. Identify turbines related to these changes. If none, enter "NONE."											
INSTRUCTIONS:		Please do not add or delete fields or write over the formulas. Report data only in units given.										INSERT YOUR TEXT HERE. EXPAND IN COVER LETTER AS NEEDED.									
PLEASE COMPLETE ONLY FIELDS THAT ARE COLORED GRAY		Upload this file into e-Dockets as a spreadsheet not a PDF. You may upload a read-only version.																			
(OTHER CELLS HAVE FORMULAS)		When you fill in ALL the cells that are gray, the formulas will report a result instead of the error message that you see in the blank form.																			
		If you have questions ABOUT USING THIS FORM, please contact Cynthia Kahrmann at 651-296-9655 or cynthia.kahrmann@state.mn.us																			
		CALENDAR YEAR FOR THIS REPORT (YYYY):					2012		FIRST DATE OF COMMERCIAL OPERATION (MM/DD/YYYY):					1/1/2012							
		Definition	Result for Year below	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	EXPLANATORY NOTES IF ANY					
13	Gross Energy Actually Produced (MWH)	Energy produced by the turbines in MWH.	27,263.262	2,518.222	2,595.755	2,314.123	2,675.562	2,601.234	2,198.452	1,504.612	1,562.433	2,107.056	2,145.982	2,465.573	2,574.258						
14	Gross Capacity Factor Actual, Percent	Equals (MWH Gross Energy actually produced [this is line 13] divided by MWH total maximum energy possible [this is line 27]) X 100. The calculation for the year at right is the annual total energy produced by the turbines divided by total maximum energy possible. It is not an average of the set of results for each month over a year; result may vary slightly from that average calculation.	29.6	32.2	36.8	29.6	35.4	33.3	29.1	19.3	20.0	27.9	27.5	32.6	33.0						
15	Losses (MWH), Actual	Energy in MWH lost due to various factors (list types of losses at far right in this row).	584.692	53.456	51.345	49.234	52.136	51.234	52.156	36.478	35.896	51.975	50.865	50.239	49.678	Explain sources of loss such as line loss or other losses.					
16	Percent Losses	Equals (MWH due to losses [this is line 15] divided by MWH gross energy actually produced [this is line 13]) X 100. The calculation for the year is the MWH annual total energy due to losses divided by MWH of gross energy actually produced. It is not an average of the set of results for each month over a year; the result may vary slightly from that average calculation.	2.1	2.1	2.0	2.1	1.9	2.0	2.4	2.4	2.3	2.5	2.4	2.0	1.9						
17	Net Energy Actually Produced to Sell (MWH)	Equals MWH Gross energy actually produced [this is line 13] minus MWH due to losses [this is line 15].	26,678.570	2,464.766	2,544.410	2,264.889	2,623.426	2,550.000	2,146.296	1,468.134	1,526.537	2,055.081	2,095.117	2,415.334	2,524.580						
18	Net Capacity Factor Actual, Percent	Equals MWH Net Energy Actually Produced to Sell [this is line 17] divided by MWH total maximum energy possible [this is line 27]) X 100. Please note that the calculation for the year is not an average of each month's result over the year and may differ slightly from that average.	29.0	31.6	36.1	29.0	34.7	32.6	28.4	18.8	19.5	27.2	26.8	31.9	32.3						
19	Percent Availability	Equals (Time turbines were available divided by total possible available time in a month or year) X 100. For convenience, the result for the year in the cell to the right is an average of each month's percent availability.	98.0	98.1	99.4	98.6	98.6	99.5	98.6	95.2	95.3	97.5	97.5	98.9	99.2						
20	Average Wind Speed (miles per hour) actual not predicted	You may choose either miles per hour or meters per second and report here or on line 21 below. For convenience, this calculation for the year in the cell to the right is an average of each month's result. If your data collection system calculates an average of all of the readings over the year, report that result also in the Notes section to the far right. Since the row is unused in this example, the formula in cell at right shows an error message. This is fine.	#DIV/0!																		
21	Average Wind Speed (meters per second) actual not predicted	See above.	8.6	9.5	9.2	9.1	9.0	8.9	8.2	7.5	7.7	8.0	8.3	8.6	8.7						
22	Wind Speed Measurement Height, (feet)	You may choose either feet or meters and report either here or on line 23 below.																			
23	Wind Speed Measurement Height, (meters)	You may choose either feet or meters and report either here or on line 22 above.	80																		
24	Average Temperature (degrees Fahrenheit)	You may choose either Fahrenheit or Celsius and report here or on line 25 below. For convenience, this calculation for the year in the cell to the right is an average of the set of monthly average results. Leave blank if LWECS permit does not require.	46.0	13.2	20.3	32.4	47.0	60.8	70.7	74.2	71.4	62.4	49.1	32.5	18.1	Average of all of the readings over the year is 45.7degrees F					
25	Average Temperature (degrees Celsius)	See above.	#DIV/0!																		
26	INSTALLED Nameplate Capacity (MW)	Installed nameplate capacity in MW for the entire LWECS.	10.5																		
27	Total Energy Production, Maximum Possible (MWH)	For all turbines included in the LWECS, equals installed nameplate capacity in MW [this is line 26] times 24 hours per day times 365 days per year.	91,980.000	7812.000	7056.000	7812.000	7560.000	7812.000	7560.000	7812.000	7812.000	7560.000	7812.000	7560.000	7812.000						

LWECS ENERGY PRODUCTION, ANNUAL REPORT TO MINNESOTA PUBLIC UTILITIES COMMISSION

LWECS NAME:	ABC WIND FARM	DOCKET NUMBER:	20-2020	DATE OF REPORT (MM/DD/YYYY):	02/01/13
	THIS IS AN EXAMPLE			CALENDAR YEAR FOR THIS REPORT (YYYY):	2012

Section D. Curtailment Reporting

We are providing this standard format so that we can make comparisons to the permit, review for accuracy and use the data more effectively.

Please report in the units indicated and do not make changes to formulas or formatting.

INSTRUCTIONS:	Please do not add or delete fields or write over the formulas. Report data only in units given.
PLEASE COMPLETE ONLY FIELDS THAT ARE COLORED GRAY	Upload this file into e-Dockets as a spreadsheet not a PDF. You may upload a read-only version.
(OTHER CELLS HAVE FORMULAS)	When you fill in ALL the cells that are gray, the formulas will report a result instead of the error message that you see in the blank form.
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Curtailment is defined as taking a turbine or turbines off line due to lack of transmission capacity OR taking a turbine or turbines off line due to operational limitations.

Turbine Number	CURTAILMENT	Total Per Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	EXPLANATION
1	Duration of curtailment in HOURS; only list turbines where curtailment has occurred.	43.75	0.00	0.00	0.00	0.00	0.00	0.00	30.50	13.25	0.00	0.00	0.00	0.00	Explain any curtailment at request of utility or any operational limitation that resulted in curtailment.
7	Duration of curtailment in HOURS; only list turbines where curtailment has occurred.	88.85	7.10	7.30	7.50	7.80	6.90	6.75	5.60	8.20	9.10	8.40	7.10	7.10	Explain any curtailment at request of utility or any operational limitation that resulted in curtailment.
Insert lines as necessary for remaining turbines		0.00													
TOTAL HOURS		132.60	7.10	7.30	7.50	7.80	6.90	6.75	36.10	21.45	9.10	8.40	7.10	7.10	

LWECS NAME:	ABC WIND FARM (EXAMPLE)	DOCKET NUMBER:	20-2020
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Section B. PLEASE USE TO COMPLETE OR UPDATE POWER PURCHASER INFORMATION REQUIRED BY THE LWECS PERMIT.
This information is being requested in this format to assist in tracking.
We appreciate your cooperation in completing this form, if previously provided.

Developed by MN Dept. of Commerce EFP staff
Version 10/23/2012

INSTRUCTIONS: *Please complete fields that are colored grey. Please do not add or delete fields.
 Upload this file into e-Dockets as a spreadsheet not a PDF. You may upload a read-only version.*

THIS IS AN EXAMPLE TO FOLLOW *If there is a Power Purchase Agreement with more than one power purchaser, use a separate line for each one.*

If you have questions ABOUT USING THIS FORM, please contact Cynthia Kahrman at 651-296-9655 or cynthia.kahrman@state.mn.us

REPORT DATE (MM/DD/YYYY):	02/01/13	CALENDAR YEAR FOR REPORT (YYYY):	2012
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IF YOU HAVE REPORTED THE INFORMATION BELOW PREVIOUSLY, USE THIS FORM IN THE ANNUAL REPORT TO UPDATE ANY CHANGES TO THE INFORMATION. HIGHLIGHT UPDATED INFORMATION.

PPA	Power Purchaser(s) Name in CAPITAL LETTERS	Date of Power Purchase Agreement	Term of Power Purchase Agreement	Power Purchaser Street Address in CAPITAL LETTERS	Power Purchaser Address, City in CAPITAL LETTERS	Power Purchaser Address, State (two letter abbreviation in CAPITAL LETTERS)	Power Purchaser Address Zip Code	Percent of Total Power in MWH That Will Be Purchased by Each Entity
1	XYZ UTILITY	1/1/2011	25 YEARS	222 SMITH STREET	SMITHTON	MN	55123	100
2								
3								
4								
5								
6								
7								
8								
9								
10								

Add rows above as needed.

Please note that this page may be used separately for pre-construction LWECS Permit Conditions III.J.4. or 10.2, Power Purchase Agreement.

Section C. PLEASE USE TO COMPLETE OR UPDATE TURBINE INFORMATION. Developed by MN Dept. of Commerce EFP staff

INSTRUCTIONS: *Please complete fields that are colored grey. Do not add or delete fields.
 Upload this file into e-Dockets as a spreadsheet not a PDF. You may upload a read-only version.
 Use a separate line for each turbine.*

If you have questions ABOUT USING THIS FORM, please contact Cynthia Kahrman at 651-296-9655 or cynthia.kahrman@state.mn.us

DATE OF REPORT (MM/DD/YYYY):	02/01/13	CALENDAR YEAR FOR THIS REPORT (YYYY):	2012
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IF YOU HAVE REPORTED THE INFORMATION BELOW PREVIOUSLY, USE THIS FORM IN THE ANNUAL REPORT TO UPDATE ANY CHANGES TO THE INFORMATION, SUCH AS IF A TURBINE HAS BEEN TAKEN OUT OF SERVICE. HIGHLIGHT UPDATED INFORMATION.

Turbine 1 has been taken out of service.

T	Turbine Location: City, Town, or Township	Turbine Location: County	Turbine Manufacturer	Turbine Model	Nameplate Capacity in MW for this One Turbine	Latitude Coordinate	Longitude Coordinate
1	LAKES TOWNSHIP	LAKES COUNTY	JKL COMPANY	JKL-1000	1.5 MW	44.940866	-93.102683
2							
3	THIS IS AN EXAMPLE TO FOLLOW						
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Continue for other turbines. Add Rows as Needed.

PLEASE NOTE: YOU MAY COPY THIS SHEET TO ATTACH WITH THE AS-BUILT PLANS OR COPY CELLS TO OR FROM GIS SHAPEFILES FOR THE PROJECT.