



June 27, 2019

Mr. Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 Seventh Place East, Suite 350
St. Paul, MN 55101-2147

RE: In the Matter of Basin Electric Power Cooperative's Optional Integrated Resource Plan

Dear Mr. Wolf:

Enclosed please find Basin Electric Power Cooperative's filing regarding the above captioned matter.

Should you have any questions regarding this filing, please contact me at cjacobson@bepc.com or 701.557.5413.

Respectfully submitted,

A handwritten signature in black ink that reads "Casey J. Jacobson".

Casey J. Jacobson
Sr. Staff Counsel

/sw
Enclosures

cc: Service List
Becky Kern
Justin Davy

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No	OFF_SL_18-437_RP-18-437
Dan	Fredrickson	ds.fredrickson@mapp.org	MAPP	1970 Oakcrest Ave Ste 200 Roseville, MN 55113	Electronic Service	No	OFF_SL_18-437_RP-18-437
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Clair	Moeller	N/A	Midwest ISO	2985 Ames Crossing Rd Eagan, MN 55121	Paper Service	No	OFF_SL_18-437_RP-18-437
David	Raatz	dtraatz@depcc.com	Basin Electric Power Cooperative	1717 East Interstate Avenue Bismarck, ND 58501	Electronic Service	No	OFF_SL_18-437_RP-18-437

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Dan	Skaar	N/A	Midwest Reliability Organization	380 St. Peter Street, Suite 800 Saint Paul, MN 55102	Paper Service	No	OFF_SL_18-437_RP-18-437
Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	Yes	OFF_SL_18-437_RP-18-437

INTRODUCTION

Basin Electric Power Cooperative (Basin Electric) is a regional rural electric wholesale power supplier headquartered at 1717 East Interstate Avenue, Bismarck, North Dakota. The region served by Basin Electric and its 141 member cooperatives includes all or portions of nine states encompassing Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Minnesota, Iowa and New Mexico. Basin Electric owns and operates or otherwise jointly shares energy conversion and transmission facilities throughout this region. Of Basin Electric's cooperative members 12 (or 9%) deliver power within Minnesota. In 2018, Basin Electric's sales to its Minnesota members represent 2.6% of the annual electricity sold at retail in the state of Minnesota.

In 2012, Dairyland Power Cooperative (Dairyland) and Basin Electric proposed to the legislature that Minnesota statutes section 216B.2422 be modified to recognize our limited presence in Minnesota. The 2012 state legislature was receptive to Dairyland and Basin Electric's request to be fully exempted from the statutory requirement to file an Integrated Resource Plan (IRP). The House and Senate both passed language to fully exempt Dairyland and Basin Electric. However, in response to concerns raised by staff at the Department of Energy Resources (DER), Dairyland and Basin Electric worked with Deputy Director Grant to create the option of an informational only filing which could be submitted in lieu of the IRP. This mutually agreed to language was substituted for the full exemption language - and passed into law. This is now referred to in statute as the Optional – IRP (O-IRP) filing and is outlined in Minnesota statutes section 216B.2422, subsection 2b.

The details of Minnesota statutes section 216B.2422, subsection 2b provides an exemption from the requirement to file an Integrated Resource Plan for generating and transmission cooperatives that has at least 80% of its member distribution cooperatives located outside of Minnesota and that provides less than 4% of the electricity annually sold at retail in the state of Minnesota.

The intent of this statute was to create an opportunity for Dairyland and Basin Electric to provide a streamlined report to the Commission in lieu of a full IRP. Under the O-IRP, Dairyland and Basin Electric are to provide an informational only annual report which will be based upon aggregate data. In an effort to minimize duplication, we may utilize reports used elsewhere (such as the load and capability report or reports made to MRO or MISO). The O-IRP submission is to include a narrative which will provide a high level overview of what is happening in the cooperative's system. Since the O-IRP will be an annual update to the Commission, there will not be a need for mid-report updates based upon changes in our load and capability.

The O-IRP may involve a public presentation to the Commission, so that Commissioners have an opportunity to ask questions and comment on the annual submission. The Commission has indicated that a planning session is an appropriate venue for the presentation – and we would be willing to give the public presentation at a scheduled planning session upon the Commission's request.

Basin Electric anticipates the Commission will open a docket for the purposes of accepting O-IRP submissions, which also provides an opportunity for interested parties to review and comment on submissions. The expectation is that the Commission will issue an order acknowledging receipt of the submission of an O-IRP and acknowledging that the statutory requirements of the O-IRP have been fulfilled.

Basin Electric has filed O-IRP's every year from 2012 through 2018.

PROJECTED DEMAND

Basin Electric's service area is electrically divided into western and eastern systems. These systems are separated by the east-west DC ties, which are boundaries that separate two major electrical regions of the United States. As a result of this, Basin Electric must supply generating capacity and energy on both sides of the ties to serve its member-load requirements.

The eastern system is further divided up into Basin Electric's obligations in the Southwest Power Pool (SPP) and Midcontinent Independent System Operator (MISO) regions. The SPP area consists of the Western-UGP East (North Dakota, South Dakota and portions of Iowa) and NPPD (North West Nebraska).

The MISO area consists of Basin Electric's Member load obligations located within the MISO RTO footprint. These loads are mainly located in North Dakota, Minnesota and Iowa. The load in MISO Local Resource Zone (LRZ) 1 is located within in North Dakota, South Dakota, and Minnesota are in the Montana-Dakota Utilities, Otter Tail Power Company, Great River Energy, Minnesota Power and Xcel Energy-Northern States Power local balancing areas. The load in MISO LRZ 3 is located within southern Minnesota and Iowa are in the MidAmerican Energy Company and Alliant West Energy local balancing areas.

Basin Electric's load obligations in the western system consist of load in NorthWestern Energy (Montana), Western-UGP West (North Central Montana), and Western-WACM (Eastern Wyoming and Colorado). Basin Electric's loads in Montana are served by power purchase agreements in Montana or resources in SPP by transferring the power across the Miles City DC tie.

Two major studies are jointly prepared by the members and Basin Electric to address where the members are presently using their power (end use survey) and how much they will require in the future (load forecast). These studies are prepared in accordance with the Rural Utilities Service (RUS) general guidelines. Both the end use survey and the load forecast represent a joint effort by the distribution cooperatives, the G&T cooperatives, and Basin Electric. Basin Electric combines this information to complete the long range load forecasts to obtain the Basin Electric total power supply responsibility.

Exhibit A is a 15-year load and capability calculation of Basin Electric’s SPP system. Basin Electric completed its last load forecast in early 2019 (a weather normalized load forecast). Basin Electric is planning on meeting the 12% SPP reserve margin requirement for our system within SPP. Basin Electric’s load located within MISO, Basin Electric will meet the requirements set forth by MISO Resource Adequacy, and a 15-year load and capability calculation is shown on Exhibit B1 (LRZ1) and B2 (LRZ3).

GENERATION RESOURCES

Basin Electric owns all or portions of sixteen existing energy conversion facilities.

Generation Facility	# Units	Facility Size	Fuel Type	Location
Antelope Valley Station	2	900 MW ⁵	Coal	Beulah, ND
Leland Olds Station	2	660 MW	Coal	Stanton, ND
PrairieWinds 1	77	115.5 MW	Wind	Minot, ND
Minot Wind Project	5	7.1 MW	Wind	Minot, ND
Laramie River Station ¹	3	1,698 MW	Coal	Wheatland, WY
Wyoming Dist. Generation	9	54 MW	Nat Gas	Wyoming
Dry Fork Station ⁴	1	385 MW	Coal	Gillette, WY
Spirit Mound Station	2	120 MW	Oil	Vermillion, SD
Chamberlain Wind Project	2	2.6 MW	Wind	Chamberlain, SD
Groton Generation Station	2	188 MW	Nat Gas	Groton, SD
Crow Lake Wind Project ²	108	162 MW	Wind	White Lake, SD
Wisdom Unit #2 ³	1	80 MW	Nat Gas	Spencer, IA
Culbertson Generation Station	1	95 MW	Nat Gas	Culbertson, MT
Deer Creek Station	1	297 MW	Nat Gas	Elkton, SD
Lonesome Creek Station	5	225 MW	Nat Gas	Watford City, ND
Pioneer Generation Station	15	239 MW	Nat Gas	Williston, ND

¹ Basin Electric owns 42.27% share of Laramie River Station or approximately 718 MW. Unit 1 is in the eastern interconnection and Units 2/3 are in the western interconnection.

² Basin Electric owns 107 of the 108 turbines from this project and Basin Electric purchases the output from the last turbine.

³ Basin Electric owns 50% share of Wisdom Unit #2 or 40 MW

⁴ Basin Electric owns 92.9% share of Dry Fork Station, or approximately 358 MW

⁵ After 12/30/20, AVS 2 lease expires and BEPC share goes down to 559 MW.

As of June 1, 2019, Basin Electric purchases all or portions of the output from the following facilities under long term arrangements (more than 10 years).

Generation Facility	# Units	Purchase Amount	Fuel Type	Location
George Neal Station Unit 4	1	104 MW	Coal	Sioux City, IA
Walter Scott Units 3 & 4	2	72 MW	Coal	Council Bluffs, IA
Boswell Energy Center Unit 4	1	100 MW	Coal	Cohasset, MN
Duane Arnold Energy Center	1	62 MW	Nuclear	Palo, IA
Wisdom Station Units 1 & 2	2	73 MW	Coal/Gas	Spencer, IA
Exira Station	1	35-140 MW	Gas	Brayton, IA
Madison Diesel Generation	5	10 MW	Diesel	Madison, SD
Spencer Combustion Turbine	1	10 MW	Jet Fuel	Spencer, IA
Estherville Generation	6	12.1 MW	Oil	Estherville, IA
Webster City Generation	1	24.8 MW	Oil	Webster City, IA
Watertown Power Plant	1	10-45 MW	Oil	Watertown, SD
Western Hydro Allocations		318.7 MW	Hydro	Various Locations
Waste Heat Facilities	8	44 MW	Exhaust	ND, SD, MT, MN
ND 1 Wind Energy Center	27	40 MW	Wind	Edgeley, ND
Wilton Wind Energy Center	66	99 MW	Wind	Wilton, ND
Baldwin Wind Project	66	100 MW	Wind	Baldwin, ND
SD Wind Energy Center	27	40 MW	Wind	Highmore, SD
Day County Wind Project	66	99 MW	Wind	Groton, SD
Pipestone Wind Project	1	.750 MW	Wind	Pipestone, SD
Crosswinds	10	16.8 MW	Wind	Ayrshire, IA
Hancock County Wind	148	7.3 MW	Wind	Duncan Cnty, IA
Lakota Wind Project	7	10.5 MW	Wind	Lakota, IA
Superior Wind Project	7	10.5 MW	Wind	Superior, IA
Campbell Cnty Wind Project	55	94 MW	Wind	Pollock, SD
Lindahl Wind Project	75	150 MW	Wind	Williams Cnty, ND
Sunflower Wind Project	52	104 MW	Wind	Stark Cnty, ND
Brady Wind Project	87	150 MW	Wind	Stark Cnty, ND
Brady Wind II Project	72	150 MW	Wind	Stark/Hettinger Cnty, ND
Burke Wind Project*	100	200 MW	Wind	Burke Cnty, ND
Prevailing Wind Park*	63	200 MW	Wind	Charles Mix Cnty, SD

*Both these Projects are anticipated to be operational in late 2019.

Basin Electric has contracted with other utilities or entities for the capacity or capacity/energy output of various facilities for durations less than 10 years.

Resource Development and Future Resource Options

Basin Electric is forecasting its entire member system to grow by more than 1900 MW between 2019 and 2050; with more than 600 MW of this anticipated load growth related to oil development within the Williston Basin area of North Dakota and Montana.

From 2013 to the date of this filing, Basin Electric has entered into seven Power Purchase Agreements for a total of 1049 MW of wind power. Of that, 649 MW of wind projects were operating as of April 2017. A Power Purchase Agreement for 200 MW was signed in 2016 for the Burke Wind project which is scheduled to be operational by the end of 2019. Another Power Purchase Agreement was signed in 2017 for Prevailing Wind Park which is also scheduled to be operational by the end of 2019.

With these additional wind purchases, Basin Electric's total wind purchases and ownership will be 1,761 MW by the end of year 2019.

Since all wind that Basin Electric has or likely will have in the future is within SPP, the SPP methodology for determining the seasonal accredited net generating capacity value attributed to wind can either be 5% of the total aggregate project nameplate capacity or entities can perform a calculation to determine the hourly net output value that can be expected from the facility 60% of the time or greater during the top 3% of load hours utilizing at least three years of data. For newer wind projects that are either not yet commercial or don't have at least three years of commercial operation, Basin Electric has assumed the 5% nameplate accreditation for the project's first three of commercial operation followed by similar monthly capacity factor curves as the closest operating wind project to calculate an estimated accredited capacity value.

Basin Electric released a Power Supply Request for Proposals (RFP) in February of 2019 and received proposal packages back in March 2019. This RFP was requesting all short term and long term proposals for capacity or capacity and energy to be delivered to the MISO and SPP areas. However as of June 1, 2019, no new purchases have been committed to. This RFP also asked for renewable proposals in both MISO and SPP. Analysis of the renewable proposals is ongoing and no decisions have been made about new renewable projects as of the date of this submittal.

SPP

Basin Electric is monitoring its load growth in the Williston Basin Area with the current commodity marketplace and pending approvals on large scale projects. This latest RFP was used to delay any decisions on major capital investments until Basin Electric can see the load materialize.

Basin Electric will continue to analyze our needs for the future and as of the date of this submittal no decisions have been committed to in SPP.

MISO

Basin Electric is forecasting growth of its members that are located within MISO. Basin Electric has load located in two MISO Local Resource Zones (LRZs), Zone 1 and Zone 3. A map of the different zones are shown in Exhibit C. At this time, Basin Electric has plans to meet all of its MISO obligations with power located in MISO.

DISTRIBUTED GENERATION

Basin Electric generally does not enter into power purchase agreements for distributed generation under 5 MW, for a number of reasons these types of purchases are better handled at the membership level. Beyond establishing the rate and basic terms of interconnection, Basin Electric has no involvement in the negotiation and ultimate purchase of distributed generation by our member cooperatives. Further, it is our understanding that our Minnesota members file information with the Commission regarding co-generation. Basin Electric as a wholesale power supplier does purchase the output from these purchases with its member cooperatives.

All of Basin Electric's owned generation, both current and planned, is physically located outside of Minnesota. Basin Electric is not planning on building any generation within the state of Minnesota's borders, which would trigger a Minnesota certificate of need proceeding. Thus, there are not any Minnesota resource options to which an evaluation of environmental values would be warranted and as such are not applicable to this submission.

OTHER FILINGS

Basin Electric filed its ten year plans with the North Dakota Public Service Commission (PSC) and the South Dakota Public Utilities Commission (PUC) in 2018. These filings are only required every two years, so the next required filing in North Dakota and South Dakota will be in 2020. The North Dakota 2018 filing is attached as Exhibit D. The South Dakota 2018 filing can be found at:
<https://puc.sd.gov/10utilityyearplan/default.aspx>.

Both the South Dakota and North Dakota reports include information on planned generation and transmission resources, project demand and environmental information on existing facilities.

Further, Basin Electric also files reports to the SPP and MISO Balancing Authorities to support in their Long-Term Reliability Assessment responsibilities with the Midwest Reliability Organization NERC Regional Entity, who in turns provides reports publically regarding regional reliability assessments. Those reports can be found at:
<http://www.nerc.com/pa/RAPA/ra/Pages/default.aspx>.

Basin Electric will remain a part of the MRO NERC MRO Regional Entity and is included in that region's Long Term Reliability Assessment (LTRA). The MRO doesn't publish individual utility reports rather they combine them in a report that covers the region. As

these assessments for each reliability region contain multiple entities, Basin Electric will not be singled out.

Also, enclosed please find Basin Electric's MISO OMS Balance Sheets for the most recent MISO-OMS survey (Exhibits E1 and E2) completed in 2019 along with the comments that Basin Electric staff submitted with the survey response (Exhibit E3).

EXHIBIT A		Jul-19	Jul-20	Jul-21	Jul-22	Jul-23	Jul-24	Jul-25	Jul-26	Jul-27	Jul-28	Jul-29	Jul-30	Jul-31	Jul-32	Jul-33	Jul-34
SPP LOAD AND CAPABILITY FORECAST		S19	S20	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30	S31	S32	S33	S34
Line 1/3	Monthly System Demand	3,063.5	3,155.6	3,232.4	3,342.7	3,439.8	3,508.3	3,561.7	3,601.7	3,654.0	3,693.8	3,747.0	3,784.0	3,825.4	3,854.6	3,897.3	3,927.1
Line 4	Annual System Demand	3,295.4	3,394.0	3,464.0	3,600.3	3,703.8	3,790.5	3,848.4	3,905.5	3,961.4	4,017.3	4,074.4	4,127.3	4,183.1	4,210.3	4,252.9	4,295.7
Line 5	Firm Purchases	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6
Line 6	Firm Sales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Line 7	Monthly Adj Net Demand (3-5+6)	3,028.8	3,121.0	3,197.8	3,308.1	3,405.2	3,473.7	3,527.1	3,567.1	3,619.4	3,659.2	3,712.4	3,749.3	3,790.7	3,820.0	3,862.7	3,892.4
Line 8	Annual Adj Net Demand (ann max of 7)	3,028.8	3,121.0	3,197.8	3,308.1	3,405.2	3,473.7	3,527.1	3,567.1	3,619.4	3,659.2	3,712.4	3,749.3	3,790.7	3,820.0	3,862.7	3,892.4
Line 9	Owned Resources	2,875.8	2,876.8	2,535.6	2,534.5	2,535.5	2,535.5	2,535.5	2,534.5	2,534.5	2,534.5	2,534.5	2,534.1	2,314.1	2,314.1	2,314.1	2,314.1
Line 10	Part/Capacity Purchase	651.0	699.4	887.5	885.4	903.7	902.8	902.0	839.3	839.3	839.3	809.7	809.7	805.2	789.4	764.4	764.4
Line 11	Part/Capacity Sales	30.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Line 12	Adj. Net Cap (9+10-11)	3,468.9	3,526.2	3,423.1	3,419.9	3,439.1	3,458.3	3,437.5	3,373.7	3,373.7	3,373.7	3,344.2	3,343.8	3,119.3	3,103.5	3,078.5	3,078.5
Line 13	Reserve Obligation Factor	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
Line 14	Total Firm Load Obl (7+13)	3,382.3	3,485.5	3,581.5	3,705.0	3,813.8	3,891.1	3,951.5	3,988.3	4,057.4	4,103.8	4,163.9	4,207.2	4,253.5	4,297.8	4,335.7	4,370.5
Line 15	Surplus (Deficit) (12-14)	104.6	30.7	(158.4)	(285.2)	(374.6)	(452.9)	(514.0)	(624.6)	(683.6)	(730.1)	(819.8)	(863.4)	(1134.2)	(1184.4)	(1257.2)	(1292.1)
Line 1/3	Monthly System Demand	3,063.5	3,155.6	3,232.4	3,342.7	3,439.8	3,508.3	3,561.7	3,601.7	3,654.0	3,693.8	3,747.0	3,784.0	3,825.4	3,854.6	3,897.3	3,927.1
	SPP WAUE/UMZ	2,635.4	2,624.7	2,682.7	2,797.1	2,885.2	2,968.0	3,002.5	3,046.9	3,090.4	3,134.6	3,179.0	3,220.5	3,253.1	3,286.9	3,321.0	3,355.3
	SPP NPPD	370.6	372.8	377.8	377.8	380.2	392.6	394.9	387.1	399.3	391.6	395.9	398.0	400.1	402.1	404.1	404.1
	SPP (UMZ) Diversity	(101.4)	(105.0)	(101.3)	(111.9)	(115.4)	(118.3)	(120.1)	(121.9)	(123.6)	(125.4)	(127.2)	(128.8)	(130.1)	(131.5)	(132.8)	(134.2)
	SPP (NPPD) Diversity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	DGC	146.5	147.4	163.1	156.8	163.1	156.8	163.1	156.8	163.1	156.8	163.1	156.8	163.1	156.8	163.1	156.8
	Losses (UMZ & NPPD)	112.3	115.9	118.8	123.0	126.7	129.3	131.3	132.8	134.8	136.3	138.3	139.7	141.2	142.3	143.9	145.1
Line 5	Firm Purchases	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6
	WAPA Peaking	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Native American Allocation	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6
Line 6	Firm Sales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Losses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Line 9	Owned Resources	2,875.8	2,876.8	2,535.6	2,534.5	2,535.5	2,535.5	2,535.5	2,534.5	2,534.5	2,534.5	2,534.5	2,534.1	2,314.1	2,314.1	2,314.1	2,314.1
	LOS 1	220.0	220.0	220.0	220.0	220.0	220.0	220.0	220.0	220.0	220.0	220.0	220.0	220.0	220.0	220.0	220.0
	LOS 2	440.0	440.0	440.0	440.0	440.0	440.0	440.0	440.0	440.0	440.0	440.0	440.0	440.0	440.0	440.0	440.0
	AVS 1	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0
	AVS 2	450.0	450.0	108.7	108.7	108.7	108.7	108.7	108.7	108.7	108.7	108.7	108.7	108.7	108.7	108.7	108.7
	LRS 1	90.0	91.0	91.0	90.0	91.0	91.0	91.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
	Groton 1	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0
	Groton 2	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0
	Culbertson	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5
	Deer Creek Station	297.0	297.0	297.0	297.0	297.0	297.0	297.0	297.0	297.0	297.0	297.0	297.0	297.0	297.0	297.0	297.0
	Wisdom 1 Coal and NG	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3
	Wisdom 2	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4
	Spirit Mound	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7
	Chamberlain	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Minot Wind Project (#1 & #2)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0
	PrairieWinds 1	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
	Crow Lake Wind Project	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6
	Pioneer Unit 1	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2
	Pioneer Unit 2	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7
	Pioneer Unit 3	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9
	Pioneer Units 11-22	103.8	103.8	103.8	103.8	103.8	103.8	103.8	103.8	103.8	103.8	103.8	103.8	103.8	103.8	103.8	103.8
	Lonesome Creek Unit 1	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3
	Lonesome Creek Unit 2	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8
	Lonesome Creek Unit 3	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6
	Lonesome Creek Unit 4	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3
	Lonesome Creek Unit 5	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3
Line 10	Part/Capacity Purchases	651.0	699.4	887.5	885.4	903.7	902.8	902.0	839.3	839.3	839.3	809.7	809.7	805.2	789.4	764.4	764.4
	Nesl 4	0.0	0.0	104.0	104.0	104.0	104.0	104.0	104.0	104.0	104.0	104.0	104.0	104.0	104.0	104.0	104.0
	Webster City	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
	Spencer	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	Estherville	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
	Madison	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	Hyde County Wind Project	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	0.0	0.0	0.0	0.0
	Wilton 2 Wind Project	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
	Day County Wind Project	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
	Baldwin Wind Project	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
	Wilton 1 Wind Project	4.5	4.5	4.5	4.5	4.1	4.1	4.1	4.1	4.1	4.1	4.5	4.5	0.0	0.0	0.0	0.0
	Edgeley Wind Project	3.2	3.2	3.2	3.2	3.											

EBITD B1
 MISO ZONE 1
 Resources (Non XEFORd)
 Jul-19 Jul-20 Jul-21 Jul-22 Jul-23 Jul-24 Jul-25 Jul-26 Jul-27 Jul-28 Jul-29 Jul-30 Jul-31 Jul-32 Jul-33 Jul-34

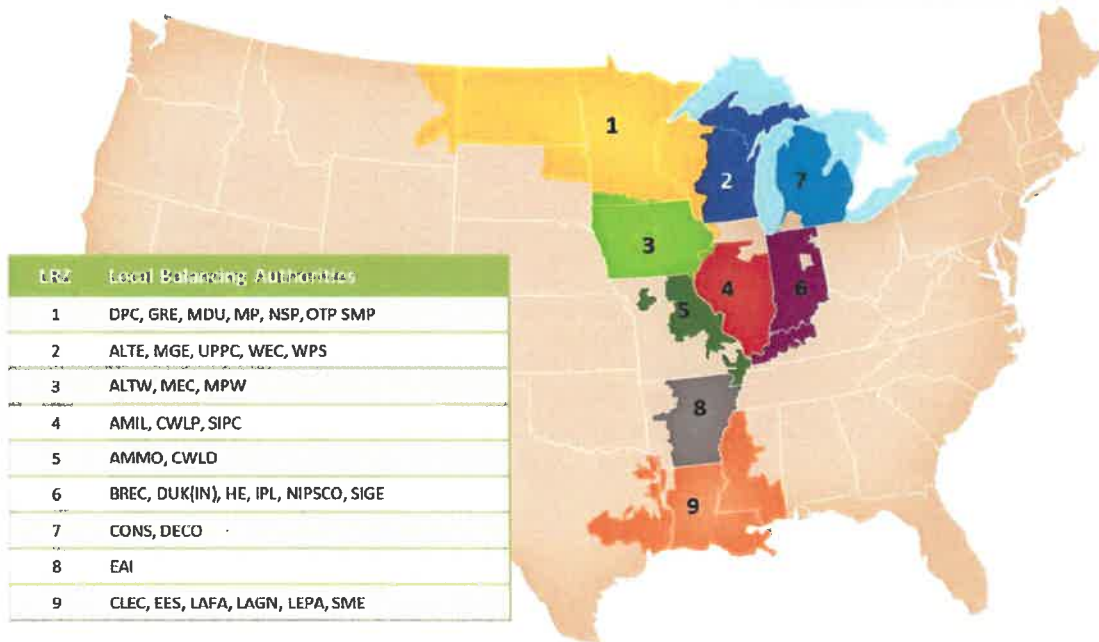
Resources (Non XEFORd)	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534
Beswell Purchase	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Manitoba Hydro Purchase	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minnesota Purchase	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairyland Purchase	75.0	75.0	175.0	175.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016 Man Hydro	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016 GRE	0.0	75.0	75.0	75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017 Minn Power	0.0	0.0	0.0	75.0	75.0	125.0	125.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017 NRG	0.0	0.0	0.0	0.0	0.0	75.0	75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018 REP Capacity (Man Hydro)	0.0	0.0	0.0	0.0	50.0	50.0	50.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
2018 REP Capacity (Mn Power)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Combined Resources (Non XEFORd)	325.0	300.0	350.0	325.0	250.0	250.0	180.0	180.0	180.0	180.0	0.0	0.0	0.0	0.0	0.0	0.0

Resources (XEFORd)

Resources (XEFORd)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Combined Resources (XEFORd)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Obligations (no diversity, no losses)	231.5	243.9	251.2	259.6	268.0	276.9	285.3	302.9	311.6	320.1	328.4	335.3	342.4	349.2	356.2	363.4
Diversity	(23.0)	(24.0)	(24.9)	(25.9)	(26.8)	(27.9)	(28.8)	(30.9)	(31.9)	(32.9)	(33.9)	(34.7)	(35.6)	(36.5)	(37.4)	(38.3)
Losses	6.6	6.9	7.1	7.3	7.5	7.7	7.9	8.3	8.5	8.7	8.9	9.1	9.3	9.4	9.6	9.8
Planning Reserve Margin Requirement	7.9%	7.3%	7.4%	7.5%	7.6%	7.6%	7.7%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%
Total Load (including diversity, losses, & PRM)	232.0	243.3	250.6	259.1	267.5	276.2	284.7	302.1	310.7	319.0	327.1	333.8	340.7	347.3	354.1	361.0
Net Surplus/Deficit	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534
	93.0	56.7	99.4	65.9	-17.5	-26.2	-104.7	-122.1	-130.7	-319.0	-327.1	-333.8	-340.7	-347.3	-354.1	-361.0

EHIRT B2		Jul-19	Jul-20	Jul-21	Jul-22	Jul-23	Jul-24	Jul-25	Jul-26	Jul-27	Jul-28	Jul-29	Jul-30	Jul-31	Jul-32	Jul-33	Jul-34
MISO ZONE 3		\$19	\$20	\$21	\$22	\$23	\$24	\$25	\$26	\$27	\$28	\$29	\$30	\$31	\$32	\$33	\$34
Resources (XEFORD)																	
Walker Scott 3		26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9
Walker Scott 3 XEFORD		5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%
Walker Scott 4		43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4
Walker Scott 4 XEFORD		4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%
Neal 4		104.30	104.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Neal 4 XEFORD		2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Duane Arnold		59.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Duane Arnold XEFORD		0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Total Combined Resources		227.4	168.6	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9
Obligations (no diversity, no losses)		53.4	53.6	54.3	55.0	55.7	56.4	57.1	66.2	66.9	67.6	68.3	69.0	69.6	70.2	70.9	71.6
Diversity		(2.7)	(2.7)	(2.8)	(2.9)	(2.9)	(3.0)	(3.1)	(3.8)	(3.9)	(3.9)	(4.0)	(4.0)	(4.1)	(4.1)	(4.2)	(4.2)
Losses		1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5
Planning Reserve Margin Requirement		7.3%	7.3%	7.4%	7.5%	7.6%	7.6%	7.7%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%
Total Load (including diversity, losses, & PRM)		55.5	55.8	56.5	57.2	58.0	58.7	59.4	68.7	69.4	70.2	70.9	71.5	72.2	72.8	73.5	74.2
Net Surplus/Deficit		\$19	\$20	\$21	\$22	\$23	\$24	\$25	\$26	\$27	\$28	\$29	\$30	\$31	\$32	\$33	\$34
		171.9	112.8	10.4	9.7	9.0	8.2	7.5	-1.8	-2.5	-3.2	-4.0	-4.6	-5.2	-5.9	-6.6	-7.2

Exhibit C





BASIN ELECTRIC POWER COOPERATIVE

A Touchstone Energy® Cooperative 

NORTH DAKOTA TEN YEAR PLAN

2018

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INTRODUCTION

Basin Electric Power Cooperative is a regional rural electric wholesale power supplier headquartered at 1717 East Interstate Avenue, Bismarck, North Dakota. The region served by Basin Electric includes all or portions of nine states encompassing Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Minnesota, Iowa and New Mexico. Basin Electric owns and operates or otherwise jointly shares energy conversion and transmission facilities throughout this region. Basin Electric is the parent company to five subsidiaries: Dakota Gasification Company, Dakota Coal Company, Montana Limestone Company, Wyoming Line Producers, and Souris Valley Pipeline LTD. A ten-year plan for Dakota Gasification Company will be submitted under separate cover by Dakota Gasification Company.

SECTION A: EXISTING ENERGY CONVERSION FACILITIES

Basin Electric owns all or portions of sixteen existing energy conversion facilities. Six of these facilities are in North Dakota; the Antelope Valley Station near Beulah; the Leland Olds Station near Stanton; Prairie Winds ND1 near Minot; the Minot Wind Project near Minot; the Pioneer Generation Station near Williston; and the Lonesome Creek Generation Station near Watford City. Other existing energy conversion facilities outside of North Dakota are the Laramie River Station at Wheatland, Wyoming; the Wyoming Distributed Generation in Wyoming; the Dry Fork Station near Gillette, Wyoming; the Spirit Mound Station at Vermillion, South Dakota; the Chamberlain Wind Project at Chamberlain, South Dakota; the Groton Generation Station near Groton, South Dakota; Crow Lake Wind Project near White Lake, South Dakota; Deer Creek Station near Brookings, South Dakota; Wisdom Unit 2 at Spencer, Iowa; and the Culbertson Generation Station near Culbertson, Montana.

Basin Electric purchases all of the output from Waste Heat Recovery Units located near St. Anthony, North Dakota; Zeeland, North Dakota; Killdeer, North Dakota and three other Heat Recovery Units located in South Dakota; one in Montana; and one in Minnesota. Basin Electric also purchases all the output from the North Dakota 1 Wind Energy Center near Edgeley and Kulm, North Dakota; the Wilton Wind Energy Center near Wilton, North Dakota; the Baldwin Wind Project near Baldwin, North Dakota; the South Dakota Wind Energy Center near Highmore, South Dakota; the Day County Wind Project near Groton, South Dakota; the Campbell County Wind Project near Pollock, South Dakota; and the Pipestone, Minnesota School District Wind Turbine. Basin Electric purchases a portion of Unit #4 of the George Neal Station near Salix, Iowa; the City of Madison, South Dakota Diesel Generators; Walter Scott Energy Center Units 3&4 near Council Bluffs, IA; Duane Arnold Energy Center near Palo, Iowa; Wisdom Station Units 1&2 near Spencer, Iowa; Spencer Combustion Turbine, Spencer, Iowa; Estherville, Iowa Diesel Generation; Webster City, Iowa Combustion Turbine; and various wind facilities near Ayrshire, Iowa; Duncan/Klemme County, Iowa; Lakota, Iowa; and Superior, Iowa.

The most recent Energy Information Administration (EIA) Form No. 923 for the Antelope Valley Station and the Leland Olds Station are included as Exhibit 1.

SECTION B: ENERGY CONVERSION FACILITIES UNDER CONSTRUCTION

Basin Electric does not have any energy conversion facilities under construction.

SECTION C: PROPOSED ENERGY CONVERSION FACILITIES ON WHICH CONSTRUCTION IS INTENDED WITHIN THE ENSUING FIVE YEARS

Basin Electric is evaluating the development of new generating resources (coal, gas, and wind) to meet Basin Electric's forecasted load growth as it materializes and continue to meet the needs of our membership.

SECTION D: PROPOSED ENERGY CONVERSION FACILITIES DURING THE NEXT TEN-YEAR TIME PERIOD

Basin Electric is evaluating the development of new generating resources (coal, nuclear, gas, and wind) in the Dakotas to meet Basin Electric's forecasted load growth.

SECTION E: EXISTING TRANSMISSION FACILITIES (ELECTRIC)

Basin Electric's transmission and related substation facilities in North Dakota and their associated commercial dates are listed in the following table:

a. TRANSMISSION LINES

<u>LINES - BY VOLTAGE</u>	<u>COMMERCIAL IN-SERVICE DATE</u>
<u>69 kV Lines</u>	
Leland Olds - Basin Electric Sub	01/09/66
<u>115 kV Lines</u>	
Basin Electric Sub - Stanton Tap	01/09/66
Logan-Kenmare Line	04/01/79
Logan-Mallard Line	04/01/79
Charlie Creek-Squaw Gap	12/31/82
Squaw Gap-Richland	12/31/82
Blaisdell-Berthold	12/21/13
Blaisdell-Plaza	02/01/18
<u>230 kV Lines</u>	
Leland Olds #1-Washburn Double Circuit	01/09/66
Leland Olds-Logan Line	03/31/80

Leland Olds #2 - Basin Electric Sub	12/15/75
Logan-Tioga	05/01/82
Tioga-Canadian Border (Estevan)	05/01/82
Befield-Rhame	04/07/10
Williston-Tioga	01/10/11
Judson-Williston	12/22/15
Tande-Neset	10/31/17

345 kV Lines

Leland Olds-Groton-Watertown	12/15/75
Leland Olds-Ft. Thompson (SD) Line	12/15/75
Leland Olds-AVS North Line	11/30/83
Leland Olds-AVS South Line	07/01/84
Antelope Valley Station-Charlie Creek #1	11/30/83
Antelope Valley Station-Charlie Creek #2	09/18/15
Charlie Creek-Judson	12/22/15
Judson-Kummer Ridge	09/27/16
Judson-Tande	10/31/17

500 kV Lines

Antelope Valley Station-Huron, SD (345 kV operation)	07/01/84
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b. SUBSTATIONS

115 kV Wm. J. Neal Station Switchyard	04/01/52
230 kV Leland Olds Switchyard	01/09/66
230 kV Washburn, ND Switchyard	01/09/66
115 kV Stanton Tap Structure	01/09/66
230/115/69 kV BEPC Substation	01/09/66
345/230 kV Leland Olds Switchyard Addition	12/15/75
230/115 kV Dickinson, ND Substation	12/15/75
230/115 kV Logan Substation	04/01/79
345/115 kV Charlie Creek Substation	11/30/83
345 kV Antelope Valley Station Switchyard	11/30/83
230/115 kV Neset Substation	10/07/09
230 kV Rhame Substation	04/07/10
230/115 kV Blaisdell Substation	05/24/12
230/115 kV Wheelock Substation	10/16/12
345/230 kV Judson Substation	12/22/15
345/115 kV Roundup Substation	09/18/15
345/115 kV Patent Gate Substation	12/22/15
345/115 kV Kummer Ridge Substation	09/27/16
345/230 kV Tande Substation	10/31/17

- c. Basin Electric does not anticipate retiring any of its existing transmission facilities within the next ten (10) years.

SECTION F: EXISTING TRANSMISSION FACILITIES (PIPELINES)

Pipeline transmission facilities utilized by Basin Electric are water supply lines to the Leland Olds Station, Antelope Valley Station, a 12 mile long natural gas fuel supply pipeline associated with the Groton Generation Station, and a 13 mile long natural gas fuel supply pipeline associated with the Deer Creek Generation Station. The Leland Olds water line is approximately one-quarter mile in length and is located on plant site property owned by Basin Electric.

The water supply line for the Antelope Valley Station is a forty-two inch diameter steel-lined concrete pipe of approximately nine miles in length. The line runs directly north from the plant site to an intake structure and pumping station located on Lake Sakakawea. This line was designed and constructed as a joint use facility for Basin Electric and the adjacent Great Plains Synfuels Plant. The State of North Dakota's southwest water pipeline uses the same intake structure and pumping station as the Antelope Valley Station pipeline. The Basin Electric line was designed to have a maximum operating pressure of 160 PSI gauge and a flow rate of 30,000 GPM. The pipeline was constructed, with a minimum earth cover of 84 inches. The pipeline was placed in-service in 1984. A new parallel pipeline was installed in 2006, because of recurring failures of the existing line. The new line is steel pipe with the same design parameters. The old line will be maintained as a back-up facility. None of Basin Electric's pipeline facilities are projected for retirement within the next ten-year period.

DGC constructed a 3.5 mile, 10' diameter natural gas pipeline, in late 2013, with the sole purpose to provide AVS with access to natural gas for use only during startup activities.

SECTION G: PROPOSED TRANSMISSION FACILITIES ON WHICH CONSTRUCTION IS INTENDED WITHIN THE ENSUING FIVE YEARS (ELECTRIC)

Transmission studies are underway to analyze any other required transmission improvements to accommodate network load growth. Results of these studies may indicate the need for additional load serving transmission facilities.

SECTION H: PROPOSED TRANSMISSION FACILITIES ON WHICH CONSTRUCTION IS INTENDED WITHIN THE ENSUING FIVE YEARS (PIPELINE)

Results of the resource development of new generating resources (refer to section D) will identify pipeline improvements necessary to support the supply required by the new resources. Generation studies are underway to analyze the required improvements to accommodate member load growth. Results of these studies may indicate the need for additional load serving generation facilities.

SECTION I: PROPOSED TRANSMISSION FACILITIES DURING THE NEXT TEN-YEAR TIME PERIOD (ELECTRIC AND PIPELINE)

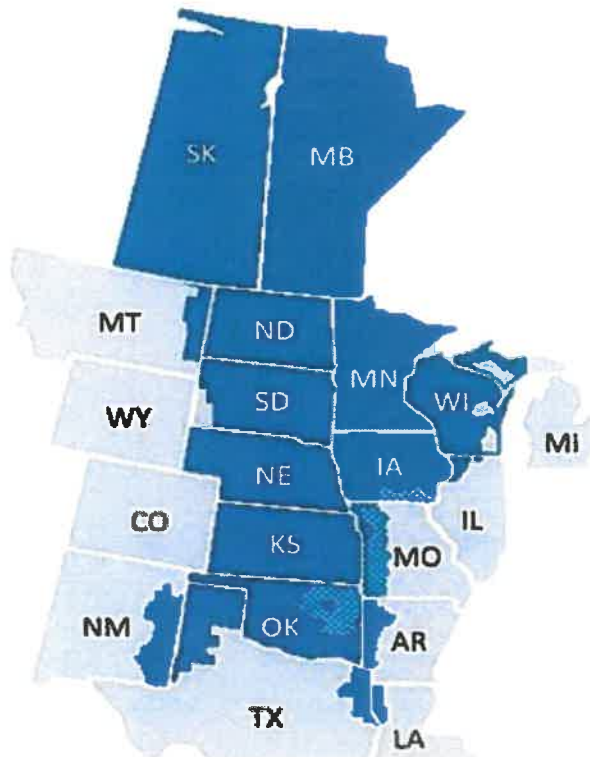
Results of the development of new generating resources (refer to section D) will identify transmission improvements necessary required by the new resources. Transmission studies are underway to analyze the required transmission improvements to accommodate network load growth. Results of these studies may indicate the need for additional load serving transmission facilities.

SECTION J: REGIONAL COORDINATION

Midwest Reliability Organization

Midwest Reliability Organization (MRO) is a non-profit organization dedicated to ensuring the reliability and security of the bulk power system in the north central region of North America, including parts of both the United States and Canada. MRO is one of seven regional entities in North America operating under authority from regulators in the United States through a delegation agreement with the North American Electric Reliability Corporation (NERC) and in Canada through arrangements with provincial regulators. The region includes more than 100 organizations that are involved in the production and delivery of power to more than 20 million people.

The primary purpose of MRO is to ensure compliance with reliability standards and perform regional assessments of the grid's ability to meet the demands for electricity.



Mid-West Electric Consumers Association

Basin Electric Power Cooperative is a member of the Mid-West Electric Consumers Association (Mid-West). Mid-West, which was founded in 1958, is a regional coalition of consumer-owned electric utilities that purchase power from the federal multi-purpose projects in the Missouri River Basin. Mid-West's Water & Power Marketing Committee meets throughout the year to discuss and review planned additions of Mid-West member utilities.

Southwest Power Pool

Basin Electric joined the Southwest Power Pool (SPP) in 2015. SPP oversees the bulk electric grid and wholesale power market in the central United States on behalf of a diverse group of utilities and transmission companies in 14 states including North Dakota. SPP establishes practices for system design, planning, adequacy, regional transmission service tariff, interconnections, operation, reliability, market designs and efficiency, and market power mitigation that will help to assure efficient and reliable power supply among the systems in SPP and SPP transmission customers. Basin Electric participates on various committees and work groups as a function of SPP.

Midcontinent Independent System Operator

MISO is a not-for-profit member-based organization that ensures reliable, least-cost delivery of electricity across all or parts of 15 U.S. states and one Canadian province. In cooperation with stakeholders, MISO manages approximately 65,000 miles of high-voltage transmission and 200,000 megawatts of power-generating resources across its footprint.

Coordination with Area Utilities

Western Area Power Administration

Basin Electric coordinates regional power supplies with the Western Area Power Administration. An example is the Miles City, Montana DC converter station. The station was built by the Western Area Power Administration (WAPA) to transfer electric power across the east/west transmission separation. Basin Electric has financed 40% of the cost of the station and contracted with WAPA for 40% of the capacity of the 200 MW station. This station enables Basin Electric to serve Central Montana Electric Power Cooperative and Members 1st Power Cooperative, Class A members with electrical loads primarily located west of the east-west separation.

Montana-Dakota Utilities Co.

Member cooperatives of Basin Electric have a common service area in the western half of North Dakota with Montana-Dakota Utilities Co. (MDU).

The Tioga-Saskatchewan 230 kV line constructed by Basin Electric and Saskatchewan Power Corporation allows the purchase and sale of power among regional utilities. This line was reviewed with MDU and routed so that it could be tapped for future use by MDU and the member systems of Basin Electric. A result of this review was the Toga 230/115 kV substation constructed by MDU and shared by Basin Electric.

The Miles City-Hettinger-New Underwood, SD, 230 kV line is another example of joint planning. This line was jointly planned and constructed with WAPA, MDU and Basin Electric. Basin Electric and MDU each have 25% capacity rights and WAPA owns and has capacity rights to 50% of the line.

SECTION K: ENVIRONMENTAL INFORMATION

The primary obligation of Basin Electric is to provide an adequate wholesale supply of dependable, low-cost electric power to its member systems, consistent with the public interest. In conjunction with this, Basin Electric endeavors to maximize the socio-economic benefits associated with electrical generation and transmission projects and to minimize negative impacts associated with these projects. This is particularly true with respect to protecting the agricultural lifestyle and productivity of this region.

The Cooperative remains committed to preserving and enhancing the ecological balance of this region for the benefit of future generations. It is the policy of Basin Electric that environmental impacts be monitored and steps taken to mitigate and alleviate adverse effects. Basin Electric has instituted a variety of programs designed to maximize the most efficient use of energy and to benefit the human, agricultural, and biological environments.

Projects proposed by Basin Electric that have a federal nexus adhere to the requirements of the associated Federal Agency Environmental Policies and Procedures which describe the procedures for compliance with the provisions of the National Environmental Policy Act (NEPA). Through the NEPA process, Basin Electric encourages state, federal and public participation in proposed projects so that once potential impact issues are identified appropriate mitigation measures can be formulated with the assistance of the participants to minimize potential impacts. An Environmental Assessment is developed which includes a comprehensive discussion and evaluation of environmental issues and serves as a baseline document for subsequent environmental regulatory permits and a federal Environmental Impact Statement when required. The goal of this process is to select a facility location that best minimizes environmental, cultural and socio-economic impacts and engineering and construction costs.

Basin Electric adheres to the appropriate North Dakota statutes regulating industrial development projects such as electrical generating facilities and high voltage transmission lines and substations. In addition, it is Basin Electric's practice to inform affected state and federal agencies when prospective projects are identified to solicit their input early in the planning process.

Basin Electric utilizes a socio-economic impact management program to assist communities in addressing population growth associated with the construction of energy conversion facilities. Basin Electric follows an open-planning process to determine the specific negative and positive impacts that may develop in an area, and works closely with the local citizens and public officials on key issues. Once issues are defined, strategies are recommended to alleviate the adverse conditions. Basin Electric further provides public officials with the technical assistance to secure financing for public services and facilities needed to alleviate negative impacts.

SECTION L: PROJECTED DEMAND FOR SERVICES

Exhibit 2 represents Basin Electric's sales to its Class A and D members. This exhibit represents Basin Electric's supplemental power supply responsibilities to its members. As a supplemental power supplier, Basin Electric is responsible for providing the members requirements in excess of the fixed amount of power they receive from WAPA and other sources.

An econometric based load forecast was completed in early 2018. The econometric forecasting system in the load forecast is a bottom up process that begins by developing econometric equations and forecasts for each distribution cooperative. The total system consists of approximately 350 forecasting equations and over 700 explanatory variables. Annual and monthly forecasts of energy and demand are conducted for a 20-year period. The distribution cooperative forecasts are combined to obtain the generation and transmission cooperative forecasts (G&T's). The G&T's power requirements are then separated into various power supply responsibilities. The Basin Electric components are combined to obtain the Basin Electric total power supply responsibility.

The modeling and forecasting is performed at Basin Electric. Throughout the modeling and forecasting process there is constant communication and review by our member systems. Historical energy data is combined with external data obtained from government and private sector sources as well as membership consultation to form econometric forecasting equations. External projections of explanatory economic and demographic variables used in the forecasting process are obtained from the Food and Agricultural Policy Research Institute at the University of Missouri-Columbia, MO.; Woods & Poole Economics, Inc.; IHS Markit, the US Department of Energy, Washington, D.C.; along with various other sources.

Basin Electric's service area is electrically divided into four assessment areas across two electrical interconnections. The majority of Basin Electric's system resides in the eastern interconnection consisting of the Southwest Power Pool (SPP) and Midcontinent Independent System Operator (MISO) assessment areas. In the western interconnection Basin Electric's system resides in the Northwest Power Pool (NWPP) and the Rocky Mountain Reserve Group assessment areas. These interconnections are separated by the east-west ties, which are boundaries that separate two major electrical regions of the United States. This boundary essentially runs south from Fort Peck, MT, approximately following the South Dakota-Wyoming, Nebraska- Wyoming, and Colorado-Kansas borders. As a result of this, Basin Electric must supply generating capacity and energy on both sides of the ties to serve its member-load requirements across all 4 assessment areas.

The resources available to Basin Electric to serve its members' east-side requirements in SPP and MISO are as follows:

Leland Olds Station: Leland Olds Unit 1 was placed in-service on January 9, 1966 and is a base-load coal fueled unit located near Stanton, ND with a net capacity of 222 MW. Leland Olds Unit 2 is a coal fueled unit that was placed in-service on December 15, 1975 and its net capacity is rated at 445 MW. Basin Electric installed emission control equipment at the Leland Olds Station which required an increase to the station service. This equipment was put in service after the 2012 fall outage on Unit 2 reducing the net capacity from 448 MW

to 445 MW due to additional station service required. The Unit 1 emissions control equipment was placed into service after the spring 2013 maintenance outage.

Antelope Valley Station: Basin Electric operates two 450 MW (net) thermal-generating base-load coal fired units near Beulah, ND. Unit 1 began commercial operation on July 1, 1984 and Unit 2 began partial commercial operation on June 1, 1986.

Designed to be environmentally sound, over \$394 million have been invested in capital pollution control asset investments for AVS to date. Dry Scrubbers use lime to capture and remove up to 90 percent of sulfur dioxide emissions from stack gases. Fabric filter bag houses capture and remove up to 99 percent of particulate matter. Each bag house contains more than 8,000, 35-foot tall bags. AVS is a "zero-discharge" facility; even water is used efficiently only leaving the plant site through evaporation.

Laramie River Station: Basin Electric, together with five other consumer-owned power supply entities, began construction of the Laramie River Station near Wheatland in southeast Wyoming in July, 1976. The station's three units became fully operational on November 1, 1982, with Unit 1 at a net capacity of 570 MW; Unit 2 at a net capacity of 570 MW; and Unit 3 at a net capacity of 570 MW. Basin Electric, as Project Manager and Operating Agent for the Missouri Basin Power Project, was assigned overall responsibility for the design, construction and operation of the power plant and related transmission. Units 2 and 3 of the Laramie River Station are electrically connected to the western system; Unit 1 is electrically connected to the eastern system. The amount of power Basin Electric receives from the eastern unit is 48 MW (net) until the SCR and SNCRs installations are complete, expected by June 2019, after which Basin Electric's share of the unit will be reduced to around 39-40 MW (net).

Spirit Mound Station: Basin Electric placed in service two 60 MW (net) nameplate fuel oil-fired combustion turbines on June 30, 1978. The combined winter rating of the two units is 120 MW (net) and the summer rating is 100 MW (net). The capacity is intended to be used primarily as reserves or replacement during initial outages of base-load units or during peak load periods when existing base-load units cannot meet the demand. The Spirit Mound Station is located near Vermillion, SD.

Earl F. Wisdom Unit 1: Basin Electric and Corn Belt Power Cooperative (Corn Belt), one of Basin Electric's member cooperatives, negotiated a power supply contract which provides that Corn Belt will sell to Basin Electric Corn Belt's 38 MW of uncommitted capacity and associated energy from the Earl F. Wisdom Unit 1. In return, Corn Belt entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to Corn Belt all of Corn Belt's capacity and energy requirements in excess of the power and energy available to Corn Belt from the Western Area Power Administration. In accordance with the Utility Mercury and Air Toxics Standards (MATs), Unit 1 stopped burning coal in January of 2014. Corn Belt and Basin Electric completed a retrofit of Unit 1 to switch from coal to natural gas for fuel. This retrofit was completed in June of 2014.

Earl F. Wisdom Unit 2: Basin Electric partnered with Corn Belt Power Cooperative to build the 80 MW natural gas peaking unit near Spencer, Iowa. Basin Electric owns one half of the unit, which was placed in service in April 2004. Basin Electric purchases 87.5 % of Corn Belt's owned half in response to Corn Belt entering into a Wholesale Power Contract;

therefore, Basin Electric has 93.75% or 75 MW from the 80 MW combustion turbine.

Groton Generation Station: The Groton Station is located near Groton, SD. Basin Electric commissioned Groton Unit 1 in 2006 and Unit 2 in 2008. These LMS 100 natural gas units provide peaking power. Unit 1 has a winter rating of 98 MW and Unit 2 has a winter rating of 97 MW.

Culbertson Generation Station: The Culbertson Station is located near Culbertson, MT. Basin Electric commissioned Culbertson Unit 1 in 2010. The LMS 100 natural gas unit provides peaking power. The unit has a winter rating of 91 MW.

Deer Creek Station: The Deer Creek Station is located near Brookings, SD. Basin Electric commissioned the Deer Creek Station in August of 2012. The unit is a combined cycle natural gas facility that provides intermediate power. The unit has a winter rating of 300 MW.

Pioneer Generation Station: The Pioneer Station northwest of Williston, ND was built to serve the increasing demand for electricity by member cooperatives in northwest North Dakota.

Unit 1 started commercial operation in 2013, Unit 2 and Unit 3 started commercial operation in 2014. Each of the three units has 45 MW of generation capacity giving the station a total rating of 135 MW.

Unit 1 of Pioneer Generation Station features a clutch that allows the turbine to uncouple from the generator, allowing the generator to provide transmission system voltage support. This feature, if needed, is used to provide fast-acting reactive power which will stabilize the transmission system in the area.

Phase III of the station, which started commercial operation in 2017, features first-of-its-kind engines for Basin Electric: 12 natural gas-based reciprocating engines, each with a generating capacity of 9.3 MW.

Lonesome Creek Generation Station: The Lonesome Creek Station is located near Watford City, ND. Commercial operation for Lonesome Creek Unit 1 began in December 2013, Units 2 and 3 in January 2015, and Units 4 and 5 in March 2017. Each unit consists of a LM 6000 natural gas unit and provides peaking power. Each unit has a winter rating of 45 MW for a total station generation capacity is 225 MW. Unit 1 has a synchronous clutch located between the combustion turbine and generator allowing the generator rotor to spin independent of the turbine providing voltage stability to the electric grid.

Chamberlain Wind Project: Basin Electric, in partnership with East River Power Cooperative, has constructed a wind energy project near Chamberlain, South Dakota. The 2.6 megawatt capacity project was placed into commercial service in January 2002. The energy is delivered to members as part of Basin Electric's overall power supply.

Minot Wind Project: Basin Electric, in partnership with Central Power Electric Cooperative, has constructed a wind energy project 14 miles south of Minot, North Dakota. The 2.6 megawatt capacity wind project was placed into commercial service in February 2002.

Three additional turbines were added in December 2009 for a total output of 7.1 megawatts. The energy is delivered to members as part of Basin Electric's overall power supply.

PrairieWinds 1: Basin Electric has constructed a wind energy project of 77 turbines near Minot, North Dakota. The 115.5 MW capacity wind project was placed into commercial service in December, 2009.

Crow Lake Wind Project: Basin Electric has constructed a wind energy project of 108 turbines near White Lake, South Dakota. The 162 MW capacity wind project was placed into commercial service in 2011. Basin Electric owns 107 turbines or 160.5 MW. Basin Electric has a purchase power contract with Mitchell Technical Institute for the power out of the last turbine.

WAPA Peaking Capacity: In 1968 Basin Electric executed a long-term contract with the federal government for USBR (now WAPA) hydro peaking from the dams in the Missouri River Basin. This contract currently provides Basin Electric with 268.2 MW of winter peaking capacity at bad and for Basin Electric to return a like amount of energy to Western during off-peak period.

George Neal IV: Basin Electric and Northwest Iowa Power Cooperative (NIPCO), one of Basin Electric's member cooperative, negotiated a power supply contract which provides that NIPCO will sell to Basin Electric NIPCO's 31 MW of uncommitted capacity and associated energy from Unit No. 4 of the George Neal Generating Station (Neal IV). In return NIPCO entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to NIPCO all of NIPCO's capacity and energy requirements in excess of the power and energy available to NIPCO from the Western Area Power Administration.

Basin Electric and Corn Belt Power Cooperative (Corn Belt), one of Basin Electric's member cooperatives, negotiated a power supply contract which provides that Corn Belt will sell to Basin Electric Corn Belt's 73 MW of uncommitted capacity and associated energy from Unit No. 4 of the George Neal Generating Station (Neal IV). In return, Corn Belt entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to Corn Belt all of Corn Belt's capacity and energy requirements in excess of the power and energy available to Corn Belt from the Western Area Power Administration.

Walter Scott 3 and 4: Basin Electric and Corn Belt Power Cooperative (Corn Belt), one of Basin Electric's member cooperatives, negotiated a power supply contract which provides that Corn Belt will sell to Basin Electric Corn Belt's 26 MW of uncommitted capacity and associated energy from Unit No. 3 and 45 MW of uncommitted capacity and associated energy from Unit No. 4 of the Walter Scott Energy Center. In return, Corn Belt entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to Corn Belt all of Corn Belt's capacity and energy requirements in excess of the power and energy available to Corn Belt from the Western Area Power Administration.

Duane Arnold Energy Center: Basin Electric and Corn Belt Power Cooperative (Corn Belt), one of Basin Electric's member cooperatives, negotiated with a power supply contract which provides that Corn Belt will sell to Basin Electric Corn Belt's 62 MW of uncommitted

capacity and associated energy from the Duane Arnold Energy Center. In return, Com Belt entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to Com Belt all of Com Belt's capacity and energy requirements in excess of the power and energy available to Com Belt from the Western Area Power Administration.

Western Native American Purchase: Basin Electric receives a Native American Allocation of 39.7 MW in the winter and 40.8 MW in the summer season. This allocation is a result of congressional action that made federal power available to the Native Americans.

Rapid City DC Tie: Basin Electric and Black Hills Power, Inc. have jointly constructed a 200 MW asynchronous tie at Rapid City, SD. This tie enables Basin Electric to serve load located on eastern system using capacity and/or energy from west side resources and vice versa. The Basin Electric ownership percentage is 65% and the Black Hills Power, Inc. ownership percentage is 35%. Currently, Basin Electric has rights to 130 MW of the tie.

Stegall (David Hamil) DC Tie: Tri-State G&T Association constructed a 110 MW asynchronous tie at Stegall, NE. Basin Electric has acquired all rights to this tie. This enables Basin Electric to serve load located on the eastern system using capacity and/or energy from west side resources and vice versa.

Other Short-Term Resources: Basin Electric has also entered into a number of short-term purchase agreements to meet contractual power supply obligations. Due to the relatively short duration of these arrangements no specifics are provided.

Long-Term Resource:

- Wind Purchases:
 - 40 MW west of Edgeley, ND
 - two 49.5 MW projects near Wilton, ND
 - 100 MW near Baldwin, ND
 - 40 MW near Highmore SD
 - 94 MW near Pollock, SD
 - 99 MW near Groton, SD
 - 104 MW near Hebron, ND
 - 150 MW near Tioga, ND
 - Two 150 MW projects near New England, ND
 - 200 MW near Columbus, ND (expected COD 12/2019)
 - 200 MW near Avon, SD (expected COD 12/2019)
- Peaking Purchases:
 - 10 MW City of Madison, SD diesel generators
 - Eight 5.5 MW waste heat recover units from Ormat Technologies Inc. (3 sites in SD near Wetonka, Clark, and Estelline; 3 in ND; 1 in MT; 1 in MN)
 - 92 MW in purchases from CBPC
 - 24.8 MW from Webster City, IA
 - 12.1 MW from Estherville, IA
 - 10 MW from Spencer, IA
 - 45.1 MW from their share of the Superior, Lakota, Hancock, and Crosswinds wind projects in IA
 - ~70 MW from North Iowa Municipal Electric Cooperative Association's (NIMECA's) surplus capacity resources in IA

- Other Long Term PPAs:
 - Capacity and Energy
 - 100 MW from Minnesota Power (ending 4/2020)
 - 50 MW from Heartland Consumers Power District (ending 5/2021)
 - 200 MW during the summer from Minnkota Power Cooperative (ending 11/2018)
 - 100 MW during the summer from Minnkota Power Cooperative (3/2019-5/2022)
 - Capacity Only
 - 100 MW from Minnesota Power (ending 5/2018)
 - 50 MW from Minnesota Power (6/2017-5/2019)
 - 50 MW from Minnesota Power (6/2018-5/2019)
 - 75-125 MW from Minnesota Power (6/2022-5/2025)
 - 25 MW from Great River Energy (ending 5/2019)
 - 75 MW from Great River Energy (6/2020-5/2023)
 - 25 MW from Xcel Energy/Northern States Power (ending 5/2019)
 - 50 MW from Manitoba Hydro (ending 5/2021)
 - 75-175 MW from Dairyland Power Cooperative (6/2019-5/2023)
 - 150 MW from Missouri River Energy Services (ending 9/2023)
 - 75 MW from NRG Power Marketing (6/2023-5/2025)

Future Power Supply: For discussion of future power supply, please refer to Section B (Energy Conversion Facilities Under Construction) and Section D (Proposed Energy Conversion Facilities During the Next Ten-Year Time Period).

The resources available to Basin Electric to serve its members' west-side requirements are as follows:

Laramie River Station: The Laramie River Station capacity that Basin Electric will receive from Unit 2 and Unit 3 on the west is 675 MW (net) until June 2019 when the installation of the SCR and SNCRs at the station are expected to be completed and each owner's entitlement shares slightly adjusted. This will cause Basin Electric's share to increase from 675 MW (net) to about 678 MW (net).

Miles City DC Tie: Basin Electric and the Western Area Power Administration have jointly constructed a 200 MW back-to-back, AC-DC-AC tie built at Miles City, MT. This tie, which provides a 40% capacity entitlement, enables Basin Electric to serve Central Montana Electric Power Cooperative Inc., a Class A member with electrical loads located primarily west of the east-west ties, using capacity from east-side resources such as Antelope Valley Station.

Wyoming Distributed Generation: The Wyoming Distributed Generation consists of 9 peaking units located at 3 sites; Arvada, Hartzog and Barber Creek. These units are natural gas fired units with a total net output of 45 MW summer and 54 MW winter. These units were released for commercial operation in 2002. These units currently are utilized for meeting our operating reserves for Basin Electric's west side electrical requirements.

Dry Fork Station: The Dry Fork Station is a 405 MW (net) coal fired power plant located 10 miles north of Gillette, Wyoming. This station was released for commercial operation in 2011. Basin Electric owns 92.9% of the station or 376 MW.

Long Term PPAs: Basin Electric has secured the following purchases for firm energy in the NWPP region.

- 50MW from PPL Energy Plus (ending 4/2020)
- 50 MW from MacQuarie Energy (formerly "Cargill"; ending 12/2021)
- 50-75 MW from MacQuarie Energy (formerly "Cargill"; 5/2020-12/2025)
- 100-150 MW from Morgan Stanley Capital Group (1/2019-12/2027)

The load values contained in Exhibit 2 were obtained from the econometric based load forecast. Loads in North Dakota are located in SPP and MISO Local Resource Zone 1 assessment areas so Basin Electric's loads in each of these areas have been adjusted to an at-generator system coincident basis by allowing for reserves, on-peak losses and system diversity as outlined in Exhibit 3.

1. Basin Electric has no concentrated load centers due to the regional and rural nature of the total load. The fuel sources and transportation facilities for existing and future plants are as follows:

<u>Plant</u>	<u>Fuel Source</u>	<u>Transportation</u>
Leland Olds Station	ND Lignite Coal	Rail
Spirit Mound Station	Oil	Pipeline
Laramie River Station	Wyoming (PRB) Coal	Rail
Antelope Valley Station	ND Lignite Coal	Mine Mouth/Rail
Minot Wind Project	Wind	N/A
Wyoming Distributed Gen	Natural Gas	Pipeline
Wisdom Unit 2	Natural Gas/Fuel Oil	Pipeline
Chamberlain Wind Project	Wind	N/A
Groton Generation Station	Natural Gas	Pipeline
PrairieWinds 1 Wind Project	Wind	N/A
Crow Lake Wind Project	Wind	N/A
Culbertson Gen Station	Natural Gas	Pipeline
Deer Creek Station	Natural Gas	Pipeline
Dry Fork Station	Wyoming (PRB) Coal	Mine Mouth
Pioneer Gen Station	Natural Gas	Pipeline
Lonesome Creek Gen Station	Natural Gas	Pipeline

2. Pursuant to federal and state laws, Basin Electric will examine all alternatives capable of producing an adequate and reliable source of energy for its cooperative.

Specific alternatives selected will be evaluated considering environmental, engineering and economic factors. Additional facilities, transmission and generation will be designed and operated in accordance with state and federal standards.

EXHIBIT 1

**U.S. Department of Energy Form EIA-923
(distributed only to the Public Service Commission)**

EXHIBIT 2

Summer/Winter Loads

Basin Electric Member Loads by State

Note: Historical 1995-2017 and Forecasted 2018-2028
 SUMMER Peak Demand (MW)

Year	ND	SD	MN	IA	NE	MT	CO	WY	BEPC TOTAL
1995	223.9	223.9	38.9	71.6	166.2	21.2	77.9	148.9	1004.5
1996	244.1	226.6	38.4	67.0	170.2	27.8	78.2	160.7	984.7
1997	222.0	239.0	41.3	77.6	195.5	26.8	82.3	171.6	1078.1
1998	248.7	218.1	47.1	83.2	211.3	28.1	84.3	162.8	1138.4
1999	267.9	224.6	52.5	102.2	197.4	28.3	85.9	173.8	1194.5
2000	292.6	230.6	53.9	98.7	168.5	28.9	82.4	199.9	1273.0
2001	308.5	222.6	58.0	116.0	184.6	30.3	81.9	217.9	1380.4
2002	315.3	213.5	57.7	127.1	203.5	43.9	94.6	235.5	1479.6
2003	353.0	229.5	57.8	127.1	253.5	55.9	114.0	253.9	1540.6
2004	328.8	212.2	59.4	119.0	239.1	61.8	130.1	271.3	1563.6
2005	356.8	207.7	62.0	119.0	269.7	74.2	131.6	296.4	1721.6
2006	400.0	205.6	71.4	137.7	272.9	82.0	134.3	358.0	1946.9
2007	451.9	219.9	81.6	143.7	281.6	86.4	135.2	388.9	2062.3
2008	464.6	225.6	91.5	166.1	281.6	73.8	142.2	428.4	2090.1
2009	448.3	214.4	87.5	177.0	231.5	64.8	145.4	400.1	2481.5
2010	508.1	205.6	101.8	201.0	237.9	68.6	145.4	407.1	2606.9
2011	543.4	208.8	189.2	459.1	280.3	69.3	139.6	396.3	2994.2
2012	612.2	231.9	206.5	480.4	333.4	104.4	207.8	377.2	3082.6
2013	812.0	263.5	223.5	476.1	333.4	147.0	179.7	370.0	3720.0
2014	888.0	293.3	211.7	488.6	388.9	178.2	178.5	372.0	3420.7
2015	1141.3	342.6	212.4	433.1	311.2	186.1	194.6	356.1	3541.7
2016	1243.5	348.8	212.4	425.1	265.5	176.4	200.4	307.8	3578.4
2017	1413.3	342.6	212.4	470.3	265.5	186.1	199.1	308.8	3688.1
2018	1208.7	327.5	234.3	470.3	298.3	283.4	272.8	301.4	3773.7
2019	1268.3	327.5	248.2	488.8	300.8	266.4	273.5	296.6	3819.2
2020	1245.3	326.6	277.4	493.4	303.2	288.5	273.5	297.8	3878.1
2021	1284.4	326.6	277.4	502.2	305.6	347.2	274.2	295.7	4041.7
2022	1284.4	318.8	298.7	505.5	307.6	367.0	274.2	295.7	4135.9
2023	1302.9	315.5	308.1	508.8	308.1	387.0	274.2	295.7	4211.5
2024	1319.0	315.5	318.5	512.4	308.1	380.8	274.2	295.7	4260.8
2025	1334.4	313.2	332.1	517.2	308.6	383.0	274.2	295.7	4319.5
2026	1348.7	312.6	357.1	519.5	310.3	385.3	274.2	295.7	4364.3
2027	1384.6	313.3	368.1	523.0	311.2	387.1	274.2	295.7	4410.0
2028	1378.1	313.3	378.4	528.8	312.1	388.7	274.2	295.7	4410.0

WINTER Peak Demand (MW)

Year	ND	SD	MN	IA	NE	MT	CO	WY	BEPC TOTAL
95/96	326.8	29.4%	369.0	88.9	33.3	31.6	77.4	188.9	1107.0
96/97	334.5	29.3%	392.7	98.5	35.7	30.2	79.8	210.7	1140.0
97/98	324.0	30.5%	283.3	77.5	35.6	29.3	83.5	207.9	1063.4
98/99	331.3	29.2%	291.8	109.2	37.0	30.4	84.3	201.2	1133.1
00/01	342.1	27.4%	289.3	102.3	31.0	28.0	83.9	208.0	1083.8
01/02	312.5	26.2%	262.0	124.6	42.5	33.6	82.4	238.7	1250.0
02/03	376.7	27.7%	300.4	105.4	37.4	34.9	82.4	270.3	1193.4
03/04	416.9	27.5%	342.3	127.8	35.7	35.0	103.1	287.5	1382.2
04/05	437.9	27.4%	393.8	134.2	35.6	62.4	122.5	283.2	1518.4
05/06	482.6	26.8%	414.7	138.7	43.5	72.2	120.8	314.4	1724.6
06/07	494.6	25.4%	464.4	186.6	48.4	64.0	121.8	353.4	1946.4
07/08	562.7	26.3%	524.3	211.5	50.0	70.6	123.5	402.6	2140.2
08/09	627.3	25.7%	633.9	245.5	58.5	78.3	137.8	461.0	2419.5
09/10	627.3	23.2%	616.8	276.1	58.5	73.5	137.2	481.4	2670.6
10/11	678.7	23.2%	621.8	317.7	59.4	56.5	144.9	476.7	2897.7
11/12	834.7	29.5%	599.9	442.5	49.3	100.6	179.9	449.7	3014.2
12/13	972.6	32.3%	183.8	457.0	54.2	183.1	199.9	433.9	3558.9
13/14	1134.3	31.9%	252.6	523.1	56.6	165.0	184.4	432.3	3651.3
14/15	1398.8	37.2%	232.9	495.7	53.8	160.5	184.2	369.2	3490.7
15/16	1394.3	39.9%	228.5	468.0	52.9	165.5	184.2	380.0	3884.6
16/17	1441.3	38.7%	248.8	476.5	56.7	191.3	191.3	354.0	3898.0
17/18	1545.5	39.8%	281.3	493.2	56.7	244.7	200.8	349.9	3869.5
18/19	1483.0	37.8%	285.5	525.3	47.3	278.4	200.9	344.7	3898.0
19/20	1483.0	38.1%	286.4	532.0	47.3	273.4	200.9	346.1	3856.7
20/21	1506.5	38.1%	304.1	535.5	47.7	291.1	201.1	343.9	4016.2
21/22	1528.7	38.1%	313.1	539.5	48.0	291.1	201.2	343.9	4186.3
22/23	1553.0	37.1%	323.0	543.9	48.4	339.0	201.2	340.1	4262.7
23/24	1573.4	36.7%	333.3	548.4	48.8	359.4	201.4	340.1	4364.3
24/25	1592.7	36.5%	344.6	554.6	49.2	373.8	201.5	338.3	4368.6

EXHIBIT 3

Eastern System Summer/Winter Load Resources

SPP SUMMER SEASON				
	Members' Load Projections *	Contracted Sales to Others	Losses & Diversity	Total Responsibility
2018	2,562	239	436	3,237
2019	2,636	176	448	3,261
2020	2,670	197	454	3,321
2021	2,706	163	462	3,332
2022	2,840	157	483	3,480
2023	2,913	163	496	3,572
2024	2,973	157	505	3,634
2025	3,009	164	512	3,684
2026	3,042	240	516	3,798
2027	3,076	248	523	3,847
2028	3,110	294	528	3,931

SPP WINTER SEASON				
	Members' Load Projections *	Contracted Sales to Others	Losses & Diversity	Total Responsibility
2018/19	2,699	140	455	3,294
2019/20	2,727	177	461	3,365
2020/21	2,772	207	469	3,448
2021/22	2,812	157	487	3,455
2022/23	2,950	157	502	3,609
2023/24	3,029	157	512	3,698
2024/25	3,097	157	520	3,774
2025/26	3,135	220	525	3,880
2026/27	3,174	221	531	3,927
2027/28	3,213	287	536	4,037

MISO Z1 SUMMER SEASON				
	Members' Load Projections *	Contracted Sales to Others	Losses & Diversity	Total Responsibility
2018	205	0	21	226
2019	215	0	22	237
2020	228	0	23	251
2021	236	0	24	260
2022	244	0	25	270
2023	254	0	26	280
2024	263	0	27	290
2025	273	0	29	301
2026	283	0	30	313
2027	292	0	31	323
2028	300	0	32	332

MISO Z1 WINTER SEASON				
	Members' Load Projections *	Contracted Sales to Others	Losses & Diversity	Total Responsibility
2018/19	295	0	30	325
2019/20	300	0	30	330
2020/21	308	0	31	339
2021/22	317	0	33	350
2022/23	327	0	34	361
2023/24	337	0	35	372
2024/25	347	0	36	384
2025/26	358	0	38	396
2026/27	368	0	39	407
2027/28	378	0	40	418

2018 Resources

Summer Season																					
SPP																					
LOS	LRS East	AVS ¹	Neal4 ²	WS ³	Wisdom1	Wisdom2	DAEC ⁴	SMS	GGG	CGS	DCS	PGS	LCS	Madison	Webster City	Estherville	Spencer	Wind	Waste Heat	Purchases	MISO Z1 Purchases
2018	665.0	48.0	904.0	-	36.3	69.4	-	95.6	176.0	85.5	297.0	238.0	206.2	10.0	20.7	13.0	10.0	132.0	27.0	505.0	300.0
2019	665.0	39.0	904.0	-	36.3	69.4	-	95.6	176.0	85.5	297.0	238.0	206.2	10.0	20.7	13.0	10.0	136.7	27.0	305.0	325.0
2020	665.0	40.0	904.0	-	36.3	69.4	-	95.6	176.0	85.5	297.0	238.0	206.2	10.0	20.7	13.0	10.0	184.4	27.0	304.0	300.0
2021	665.0	40.0	561.2	107.2	36.3	69.4	60.2	95.6	176.0	85.5	297.0	238.0	206.2	10.0	20.7	13.0	10.0	184.4	27.0	252.0	350.0
2022	665.0	40.0	561.2	107.2	36.3	69.4	60.2	95.6	176.0	85.5	297.0	238.0	206.2	10.0	20.7	13.0	10.0	182.8	27.0	251.0	325.0
2023	665.0	40.0	561.2	107.2	36.3	69.4	60.2	95.6	176.0	85.5	297.0	238.0	206.2	10.0	20.7	13.0	10.0	202.4	27.0	250.0	200.0
2024	665.0	40.0	561.2	107.2	36.3	69.4	60.2	95.6	176.0	85.5	297.0	238.0	206.2	10.0	20.7	13.0	10.0	202.4	27.0	99.0	200.0
2025	665.0	40.0	561.2	107.2	36.3	69.4	60.2	95.6	176.0	85.5	297.0	238.0	206.2	10.0	20.7	13.0	10.0	202.4	27.0	98.0	-
2026	665.0	39.0	561.2	107.2	36.3	69.4	-	95.6	176.0	85.5	297.0	238.0	206.2	-	20.7	13.0	10.0	202.4	27.0	97.0	-
2027	665.0	39.0	561.2	107.2	36.3	69.4	-	95.6	176.0	85.5	297.0	238.0	206.2	-	20.7	13.0	10.0	202.4	27.0	96.0	-
2028	665.0	39.0	561.2	107.2	36.3	69.4	-	95.6	176.0	85.5	297.0	238.0	206.2	-	20.7	13.0	10.0	202.4	27.0	95.0	-

Winter Season																					
SPP																					
LOS	LRS East	AVS ¹	Neal4 ²	WS ³	Wisdom1	Wisdom2	DAEC ⁴	SMS	GGG	CGS	DCS	PGS	LCS	Madison	Webster City	Estherville	Spencer	Wind	Waste Heat	Purchases	MISO Z1 Purchases
2018/19	665.0	48.0	904.0	-	37.9	80.8	-	120.0	187.7	93.1	300.0	242.8	225.2	10.0	25.6	13.0	10.0	361.0	32.6	582.6	300.0
2019/20	665.0	40.0	904.0	-	37.9	80.8	-	120.0	187.7	93.1	300.0	242.8	225.2	10.0	25.6	13.0	10.0	522.4	32.6	581.6	325.0
2020/21	665.0	40.0	561.2	-	37.9	80.8	-	120.0	187.7	93.1	300.0	242.8	225.2	10.0	25.6	13.0	10.0	574.9	32.6	580.6	300.0
2021/22	665.0	40.0	561.2	107.2	37.9	80.8	62.2	120.0	187.7	93.1	300.0	242.8	225.2	10.0	25.6	13.0	10.0	574.8	32.6	528.6	350.0
2022/23	665.0	40.0	561.2	107.2	37.9	80.8	62.2	120.0	187.7	93.1	300.0	242.8	225.2	10.0	25.6	13.0	10.0	699.3	32.6	527.6	325.0
2023/24	665.0	40.0	561.2	107.2	37.9	80.8	62.2	120.0	187.7	93.1	300.0	242.8	225.2	10.0	25.6	13.0	10.0	699.3	32.6	376.6	200.0
2024/25	665.0	40.0	561.2	107.2	37.9	80.8	62.2	120.0	187.7	93.1	300.0	242.8	225.2	10.0	25.6	13.0	10.0	699.3	32.6	375.6	200.0
2025/26	665.0	39.0	561.2	107.2	37.9	80.8	-	120.0	187.7	93.1	300.0	242.8	225.2	-	25.6	13.0	10.0	699.3	32.6	374.6	-
2026/27	665.0	39.0	561.2	107.2	37.9	80.8	-	120.0	187.7	93.1	300.0	242.8	225.2	-	25.6	13.0	10.0	699.3	32.6	373.6	-
2027/28	665.0	39.0	561.2	107.2	37.9	80.8	-	120.0	187.7	93.1	300.0	242.8	225.2	-	25.6	13.0	10.0	699.3	32.6	372.6	-

Footnotes:

- 1) BEPC owns 24.166% of AVS unit 2 and leases the remaining portion from other owners. The terms of the lease end 12/31/2020 and Basin Electric currently doesn't intend to renew them.
- 2) It is likely the DAEC unit will shutdown at the end of 2025 unless NextEra can find an offtaker for their 70% of the unit; DAEC is currently in MISO Z3, and Basin Electric plans to bring it back into SPP by summer 2021
- 3) Neal 4 is currently in MISO Z3, and Basin Electric plans to bring it back into SPP by summer 2021
- 4) WS 3 & 4 are currently in MISO Z3, and Basin Electric plans to leave them there for the foreseeable future

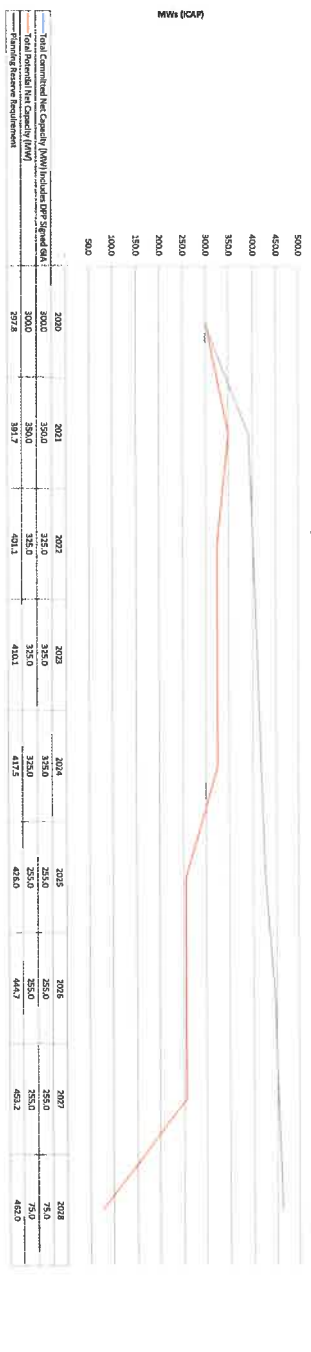
Exhibit E1 LSE Balance Sheet

ERM

Category (MW)	2024-1												Total	UCAP	MW		
	2020	2020	2021	2021	2022	2022	2023	2023	2024	2024	2025	2025					
High Capacity Resources	3000	3000	3000	3000	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150
Low Capacity Resources	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Total Capacity (MW)	3000	3000	3000	3000	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150

Resource Requirement (MW)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Peak Demand	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Reserve Margin (MW)	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Total Potential Resources	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000

Annual Projected Resource Adequacy Position (UCAP)



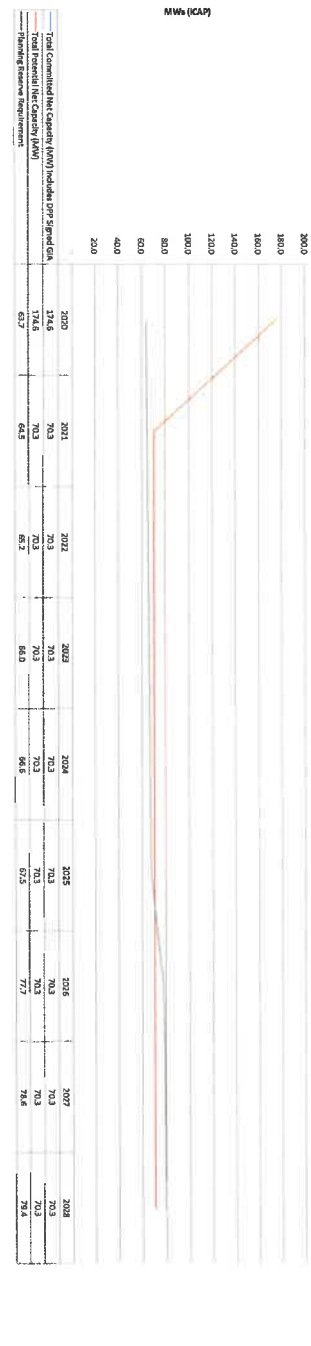
Non-identical peak is the last portion of the CDC peak duration from 2015-2020 training year Action
 TE and Smart Energy Program not eligible for capacity in MW

Exhibit E2 LSE Balance Sheet

Resource	2020		2021		2022		2023		2024		2025		2026		2027		2028		2029		2030		
	ICAP	UCAP	ICAP	UCAP	ICAP	UCAP	ICAP	UCAP	ICAP	UCAP	ICAP	UCAP	ICAP	UCAP	ICAP	UCAP	ICAP	UCAP	ICAP	UCAP	ICAP	UCAP	
Zone 3																							
High Capacity Resources (Existing Resource s/s)	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	
Low Capacity Resources (Existing Resource s/s)	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	
Other Registered Resources (Existing Resource s/s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
New Capacity DSR Phase 1 (New Resource s/s)	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	
New Capacity DSR Phase 2 (New Resource s/s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
New Capacity DSR Phase 3 (New Resource s/s)	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	
New Capacity DSR Phase 1, 2&3 Staged (New Resource s/s)	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	
New Capacity DSR Phase 2, 3 Staged (New Resource s/s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Total Committed Net Capacity (MW) Includes DSR Staged GA	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	
Total Potential Net Capacity (MW)	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	

Resource	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Reserve Margin (MW) as submitted with Signed GA	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6
Reserve Margin (MW) as submitted with Signed GA	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6
Reserve Margin (MW) as submitted with Signed GA	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6

Annual Projected Resource Adequacy Position (ICAP)



Note: 2020 peak is the LSE peak obligation from 2019-2020 planning year auction. LSE and Smart Energy Program not eligible for capacity in 2020.

Exhibit E3

Joey Schrepel

From: Joey Schrepel
Sent: Monday, April 15, 2019 4:19 PM
To: 'OMS-MISOSurvey@MISOEnergy.org'
Subject: BEPM 2019 OMS-MISO Survey
Attachments: BEPM_Z1_Z3_OMS-MISO survey 2019.xlsx

Attached please find Basin Electric Power Cooperatives completed OMS-MISO survey for Zone 1 and Zone 3 for 2018. Some things to note:

- Comments are attached on the Zone 3 existing resources tab noting pseudo tie changes that are anticipated to happen.
- The load growth in Zone 3 occurring in year 2026 and beyond is attributed to some of Basin Electric's member coops not continuing to be served by another entity and instead having Basin Electric serve the load.
- For 2021 through 2028 in Zone 1 demand that was taken from the MECT occurred in November. Following current resource adequacy procedures Basin Electric experiences a greater amount of diversity going from November to the summer planning season. Without this diversity it is showing Basin Electric deficit beginning in 2021-2022 when in actuality we will be surplus through the 2024-2025 planning year.
- For the NRG 2017 contract in the internal MISO Transfer tab, NRG has the right to supply the ZRCs from any LRZ so the Actual LRZ Source may not be Zone 1.

Let me know if there are any questions.

Joey Schrepel

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