

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION BY PREVAILING WIND PARK, LLC FOR A PERMIT FOR A WIND ENERGY FACILITY IN BON HOMME, CHARLES MIX, AND HUTCHINSON COUNTIES, SOUTH DAKOTA, FOR PREVAILING WIND PARK ENERGY FACILITY

SD PUC DOCKET EL 18-026

PRE-FILED DIRECT TESTIMONY OF JAMES DAMON ON BEHALF OF PREVAILING WIND PARK, LLC

May 30, 2018

1	I.	INTRODUCTION AND QUALIFICATIONS
2		
3	Q.	Please state your name, employer, and business address.
4	Α.	My name is James Damon. I am a Senior Project Manager at sPower Development
5		Company, LLC ("sPower"). My business address is 2180 South 1300 East, Suite
6		600, Salt Lake City, Utah.
7		
8	Q.	Briefly describe your educational and professional background.
9	Α.	I have a Bachelor of Arts in Urban Studies and Political Science, and a Master's
10		Degree in City and Regional Planning.
11		
12		I am a Senior Project Manager and manage a 500-megawatt ("MW") development
13		portfolio at sPower. I am responsible for structuring and negotiating land
14		agreements, negotiating and managing engineering and procurement contracts,
15		performing technical due diligence for project acquisitions, managing project
16		budgets, and managing third-party consultants. I have over 10 years of experience
17		in renewable energy development.
18		
19		A copy of my resume is attached as <u>Exhibit 1</u> .
20		
21	Q.	Could you explain the relationship between Prevailing Wind Park, LLC
22		("Prevailing Wind Park" or the "Applicant") and sPower with respect to the
23		proposed Prevailing Wind Park Energy Facility ("Project")?
24	Α.	Prevailing Wind Park, a South Dakota limited liability company, is a wholly owned
25		subsidiary of sPower. Prevailing Wind Park will own and develop the Project.
26		
27	Q.	Could you please describe sPower's experience in the renewable energy
28		industry?
29	Α.	sPower is the largest private owner of operating solar assets in the United
30		States. sPower owns and operates a portfolio of solar and wind assets greater than
31		1.3 gigawatts ("GW") and has a development pipeline of more than 10 GW. sPower

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32		is owned by a joint venture partnership between The AES Corporation (NYSE: AES),
33		a worldwide energy company headquartered in Arlington, Virginia, and the Alberta
34		Investment Management Corporation, one of Canada's largest and most diversified
35		institutional investment fund managers.
36		
37	Q.	What is your role with respect to the Project?
38	Α.	I am the Project manager, and in that role, I oversee development of the Project.
39		
40	II.	PURPOSE OF TESTIMONY
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42	Q.	What is the purpose of your Direct Testimony?
43	Α.	The purpose of my testimony is to provide an overview of the Project's development
44		history, including: Project site selection, site analysis, and layout and facility design.
45		I also provide testimony regarding Project operational considerations.
46		
47	Q.	What exhibits are attached to your Direct Testimony?
48	Α.	The following exhibits are attached to my Direct Testimony:
49		Exhibit 1: Resume
50		
51	Q.	Please identify the sections of the Application to the South Dakota Public
52		Utilities Commission for a Facility Permit ("Application") that you are
53		sponsoring for the record.
54	Α.	I am sponsoring the following portions of the Application:
55		Section 1.0: Introduction
56		Section 2.0: Project Development Summary
57		Section 3.0: Facility Permit Application
58		Section 4.0: Names of Participants
59		Section 5.0: Name of Owner and Manager
60		Section 6.0: Purpose of, and Demand for, the Wind Energy Facility
61		Section 7.0: Estimated Cost of the Wind Energy Facility
62		Section 9.0 Alternate Sites and Siting Criteria

63		Section 15.6: Electromagnetic Interference
64		Section 19.0: Time Schedule
65		• Section 20.0: Community Impact (with the exception of those subsections
66		concerning cultural resources)
67		Section 21.0: Employment Estimates
68		Section 23.0: Future Additions and Modifications
69		Section 25.0: Reliability and Safety
70		Section 26.0: Information Concerning Wind Energy Facilities
71		Section 27.4: Applicants Burden of Proof
72		Section 28.0: Testimony and Exhibits
73		Section 29.0: References
74		Appendix A: Figures
75		Appendix O: RF Impact Report
76		Appendix P: 2009 Berkeley Property Values Study
77		Appendix Q: 2013 Berkeley Property Values Study
78		
79	III.	PROJECT OVERVIEW
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81	Q.	Who will own and operate the Project?
82	Α.	Prevailing Wind Park will own, manage, and operate the Project.
83		
84	Q.	Please provide a basic description of the Project, including where it is located.
85	Α.	The proposed Project is an up to 219.7-MW nameplate capacity wind energy facility
86		to be located within a 50,364-acre project area ("Project Area") in Bon Homme,
87		Charles Mix, and Hutchinson counties, South Dakota. The Project will consist of the
88		following components:
89		Up to 61 wind turbines;
90		 Access roads to wind turbines and associated facilities;
91		 An underground electrical power collector and communication system;
92		A collector substation;
93		 Up to four permanent meteorological ("MET") towers;

- An operations and maintenance ("O&M") facility; and
- Additional temporary construction areas, including crane paths, public road improvements, a laydown yard, and one or more concrete batch plants (as needed).
- 98

Q. Has Prevailing Wind Park secured all of the necessary private property rights for the Project?

- A. Yes. Prevailing Wind Park has secured all of the private land rights necessary to
 construct the Project. Prevailing Wind Park will work with local units of government
 to obtain the necessary road crossing and utility permits for the Project.
- 104

105 Q. How and where will the Project interconnect to the electric grid?

- A. The Project will interconnect with Western Area Power Administration's ("WAPA")
 existing Utica Junction Substation, located approximately 27 miles east of the
 Project. The Applicant is proposing to construct a new 115-kilovolt ("kV") gen-tie line
 in Bon Homme and Yankton counties from the collector substation to the Utica
 Junction Substation. The gen-tie line and step-up interconnection substation are not
 under the jurisdiction of the South Dakota Public Utilities Commission
 ("Commission") and will be permitted in Bon Homme and Yankton counties.
- 113

114 Q. Has the Project identified an off-taker for the energy it will produce?

- A. Yes. In January 2018, Prevailing Wind Park entered into a 30-year 200-MW power
 purchase agreement ("PPA") with a South Dakota load-serving entity.
- 117

118 Q. What is the proposed development schedule for the Project?

- A. Prevailing Wind Park expects to commence construction activities in the Fourth
 Quarter of 2018 and have the Project operational in the Fourth Quarter of 2019.
 However, commencement of construction is dependent on the timing of
 interconnection studies, required transmission upgrades, and securing Project
 financing.
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IV. OVERVIEW OF SITE SELECTION

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127 Q. Please provide an overview of the Project's development history.

A. A group of local investors formed Prevailing Winds, LLC in 2014, following the
 successful development of the 80 MW B&H Wind Project (now Beethoven Wind
 Project), to create additional sources of income for area landowners and economic
 growth for the local communities through wind energy.

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Prevailing Winds, LLC filed an application with the Commission in June 2016 for a 200-MW wind farm with up to 100 2.3-MW wind turbines. At that time, Prevailing Winds, LLC did not have all private land rights secured for the Project and did not have an off-taker for the energy that would be produced. Prevailing Winds, LLC subsequently withdrew the application in August 2016.

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In October 2017, sPower acquired the Prevailing Wind Park, LLC assets and
development rights to the Project from Prevailing Winds, LLC. sPower formed
Prevailing Wind Park, LLC which has undertaken extensive development activities,
acquired all necessary private land rights, and secured an off-taker for the Project's
output.

144

145 Q. How was the location of the Project initially identified?

146 A. In 2015, Prevailing Winds, LLC conducted feasibility studies to identify a potential 147 wind project location along WAPA's Fort Randal to Utica Junction to Sioux City 148 double-circuit 230-kV transmission line. Three separate site alternatives along the 149 line were studied, and a site in Bon Homme and Charles Mix counties was initially 150 selected. This site was selected due to the superior wind resource, lower population 151 density, and lower environmental risks, as compared to the alternative sites. 152 Following selection of the initial site and Prevailing Wind Park's acquisition of the 153 Project, the Project boundary has been further refined over time based on the results 154 of community outreach, land acquisition, agency coordination, and completion of 155 additional studies. These refinements have included a shift of the Project boundary to the north away from the Missouri River. In addition to acreage in Bon Homme
and Charles Mix counties, the Project Area now includes acreage in Hutchinson
County.

- 159
- 160 **V**.
 - V. TURBINE MODEL SELECTION
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162 Q. Has Prevailing Wind Park made a final turbine model selection for the Project?

A. No, not at this time. Prevailing Wind Park is considering turbines with an energy production range between 3.6 MW and 3.8 MW, and the Application contains information regarding two representative turbines, the General Electric ("GE") 3.8-137 and the Vestas V136-3.6 turbine models. The final decision regarding turbine model will be made prior to construction.

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Q. Why is it important for the Project to have flexibility with respect to the turbine model selected?

171 A. Identifying one turbine option at this time would make it difficult for Prevailing Wind 172 Park to negotiate the best turbine price with suppliers. Turbine supply agreements 173 are not typically executed until after receipt of most major permits. This timing is 174 due, in part, to the large capital investment required in connection with wind turbine Additionally, flexibility in turbine model selection will provide for 175 acquisition. 176 optimization of Project design, as it will allow Prevailing Wind Park to consider 177 known conditions of the Project Area and all wind turbines commercially available at 178 the time of construction – turbine technology is continually evolving, so such 179 flexibility will allow the Project to take advantage of the latest technological 180 developments in wind turbines. For any wind project to remain competitive, it must 181 have the flexibility to use the latest turbine technology at the lowest costs.

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183 VI. PROJECT CONFIGURATION

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185Q. Is the Project's proposed configuration depicted in Figure 2 of the186Application?

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Exhibit A6-3

A. Yes, Figure 2 to the Application shows the 63 turbine locations proposed for the
configuration of the Project. Please note that the turbine numbers go from 1-58 and
60-64; as the turbine location 59 was eliminated.

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191 Q. Is this same configuration proposed for any turbine model selected?

192 A. Yes. The configuration shown in Figure 2 to the Application will be used for the 193 turbine model finally selected for the Project, whether the GE model, the Vestas 194 model, or another comparable turbine model is used. Depending on the turbine 195 model selected, a subset of the 63 proposed turbine locations will be used in order 196 to reach a total output of up to 200 MW. Although not all of the 63 proposed 197 locations will be used, acoustic and shadow flicker modeling was conducted at all 63 198 proposed turbine locations for both of the representative turbine models. lf a 199 different turbine model is ultimately selected, Prevailing Wind Park will update its 200 acoustic and shadow flicker modeling.

201

202 Q. Is the configuration sited so as to minimize potential environmental impacts?

A. Yes. The Project's proposed configuration was sited to minimize potential
environmental impacts, as discussed in Sections 10.0 through 15.0 and 17.0 and
18.0 of the Application and in the Direct Testimony of Bridget Canty.

206

Q. Is the Project configuration designed to comply with all applicable County and State turbine setback requirements?

- 209 A. Yes.
- 210

Q. Please identify the applicable specific setbacks for the Project and other requirements and commitments that affect turbine setbacks.

- A. The applicable setbacks, requirements and commitments are listed in the Table 9-2in the Application and provided below.
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- 216
- 217

Prevailing Wind Park Siting Requirements/Commitment

Category	Requirements/Commitments
State Requ	irements
Setbacks	Turbines shall be set back at least 500 feet or 1.1 times the height of the tower, whichever is greater, from any surrounding property line (SDCL 43-13-24).
Bon Homm	ne County Requirements ^a
Setbacks	(a) Distance from currently occupied off-site residences, business and public buildings shall be not less than one thousand (1,000) feet. Distance from the residence of the landowner on whose property the tower(s) are erected shall be not less than five hundred (500) feet or one point one (1.1) times the system height, whichever is greater. For the purposes of this section only, the term "business" does not include agricultural uses.
	(b) Distance from right-of-way of public roads shall be not less than five hundred (500) feet or one point one (1.1) times the system height, whichever is greater.
	(c) Distance from any property line shall be not less than five hundred (500) feet or one point one (1.1) times the system height, whichever is greater, unless appropriate easement has been obtained from adjoining property owner.
Noise	Noise level produced by the LWES shall not exceed forty-five (45) dBA, average A-weighted sound pressure at inhabited dwelling existing at the time the permit application is filed, unless a signed waiver or easement is obtained from the owner of the dwelling.
	The permittees shall submit a report of predicted noise levels at habitable residential dwellings within one mile of proposed tower locations to the Board no less than forty-five (45) days prior to commencing construction.
Voluntary	Commitments in Charles Mix and Hutchinson Counties
Setbacks	(a) Distance from currently occupied off-site residences, business and public buildings will be not less than 1,000 feet. Distance from the residence of the landowner on whose property the tower(s) are erected will be not less than 500 feet or 1.1 times the system height, whichever is greater. The term "business" does not include agricultural uses.
	(b) Distance from right-of-way of public roads will be not less than 500 feet or 1.1 times the system height, whichever is greater.
	(c) Distance from any property line will be not less than 500 feet or 1.1 times the system height, whichever is greater, unless appropriate easement has been obtained from adjoining property owner.
Noise	Noise level produced by the wind turbines will not exceed 45 dBA, average A-weighted sound pressure at currently inhabited dwellings, unless a signed waiver or easement is obtained from the owner of the dwelling.
Shadow FI	icker Commitment
Shadow Flicker	Shadow flicker produced by the wind turbines will not exceed 30 hours per year at currently inhabited dwellings of non-participants.
Bon Homme	County, South Dakota, Zoning Ordinance (amended November 3, 2015)

219 Q. Your table notes a shadow flicker commitment for non-participating 220 landowners. Please explain that commitment.

218

221 A. Yes. With respect to shadow flicker, only Bon Homme County has a specific wind 222 energy system ordinance and the ordinance does not specify a standard for shadow 223 flicker. It indicates that the county may require the installation of a shadow flicker 224 control system under certain circumstances. In lieu of a specific standard, Prevailing 225 Wind Park commits to limit shadow flicker at non-participating residences in the 226 Project Area to no more than 30 hours per year. As described in Mr. Aaron 227 Anderson's Direct Testimony, conservative shadow flicker modeling indicates a level 228 above 30 hours per year for one non-participating residence. Prevailing Wind Park 229 is undertaking updated analysis using more realistic modeling assumptions for that 230 residence and will update the predicted shadow flicker level with supplemental 231 testimony. If updated modeling results still show more than 30 hours per year of 232 shadow flicker, Prevailing Wind Park will work with the landowner to implement 233 mitigation techniques, such as screening or implement operational controls to 234 ensure experienced shadow flicker levels are below 30 hours per year.

235

236 VII. FINAL MICRO-SITING

locations?

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238Q. Could the remaining cultural resource survey, and other surveys, wetland and239waterbody delineations, and geotechnical work require changes to the turbine

241 A. Yes. As discussed further in the Direct Testimony of Bridget Canty, Prevailing Wind 242 Park must complete wetland and waterbody delineations, cultural resource surveys, 243 a rare plant habitat assessment, and geotechnical evaluations to finalize the micro-244 siting of turbines. The wetland and waterbody delineations and rare plant habitat assessment are in process. Additionally, Prevailing Wind Park is in the process of 245 246 field verifying areas of potential untilled grasslands that, based on the 2018 desktop 247 analysis, exhibit recent signs of disturbance or that were added to the Project Area 248 after the prior field verifications were completed.

249

250 Minor shifts in the proposed turbine locations could be required due to the results of 251 the remaining survey work and the geotechnical evaluations. 252

253 **Q.** What is Prevailing Wind Park's request with respect to flexibility for future 254 minor shifts in the turbine locations presented in Figure 2 of the Application?

255 A. Prevailing Wind Park requests that the permit allow turbines to be shifted within 500 256 feet of their currently proposed locations, so long as specified noise requirements, 257 setbacks and the Applicant's shadow flicker commitment are not exceeded, cultural 258 resource impacts and habitats for listed species are avoided, and wetland impacts 259 are avoided to the greatest extent practicable. If turbine shifts are greater than 500 260 feet, exceed the noted thresholds, or do not meet the other limitations specified, 261 Prevailing Wind Park would either use an alternate turbine location or obtain 262 Commission approval of the proposed turbine location change.

263

Q. Is the siting flexibility requested by Prevailing Wind Park consistent with the
 land use requirements of Bon Homme and Hutchinson counties?

- Yes. It is our understanding that the approvals obtained from Bon Homme and
 Hutchinson counties will authorize the use of the land for a wind energy system and
 that the turbine locations can be adjusted so long as applicable setbacks and other
 requirements are met.
- 270

Q. With respect to other facilities, what is Prevailing Wind Park's request with respect to final micro-siting?

273 A. As a result of final micrositing, shifts in the access roads and collector system, as 274 well as changes in the locations of the O&M facility, met towers, Project substation, 275 concrete batch plant, and laydown/staging areas, may be necessary. Therefore, 276 Prevailing Wind Park requests that the permit allow those facilities to be modified, as 277 needed, so long as the new locations are on land leased for the Project, cultural 278 resources and habitats for listed species are avoided, wetland impacts are avoided 279 to the greatest extent practicable, and all other applicable regulations and 280 requirements are met.

281

282 Q. Are any future modifications or expansions of the Project planned?

283	A. No, other than potential minor shifts during Project micro-siting, no future
284	modification or expansions are planned.
285	
286	VIII. PROJECT OPERATION AND MAINTENANCE
287	
288	Q. Discuss the personnel that will be involved in operation and maintenance o
289	the Project.
290	A. The Project's expected life span is approximately 30 years. During this time,
291	maintenance crew will be on-site 24-hours a day, seven days a week to monito
292	turbine operations from the O&M building and conduct maintenance activities, a
293	needed.
294	
295	Overall, it is predicted that, during operation and maintenance, the Project will create
296	approximately 8 to 10 full-time jobs paying \$35,000 - \$80,000 per year. Up to six o
297	those positions will be for wind technician jobs paying \$60,000 to \$70,000 annually.
298	
299	Q. Discuss the inspections that will be conducted and when they will occur.
300	A. All major components of the wind turbines will undergo routine maintenance
301	according to the schedules established by the component manufacturer.
302	
303	Q. How will the Project be monitored between inspections?
304	A. All proposed turbine models have supervisory control and data acquisition
305	("SCADA") communication technology to control and monitor the Project. Thi
306	system permits automatic, independent operation and remote supervision, allowing
307	simultaneous on-site and off-site control of the wind turbines.
308	
309	Q. How reliable will the wind turbines and associated infrastructure be?
310	A. Prevailing Wind Park requires availability guarantees from turbine manufacturer
311	and O&M service providers to maintain the turbine at 98 percent availability of
312	higher.
313	

314	IX. DESIGN, CONSTRUCTION, AND OPERATIONAL CONSIDERATIONS
315	
316	Q. What safety features will be incorporated into the Project?
317	A. Prevailing Wind Park has incorporated or will incorporate a number of safety and
318	security measures to protect persons and property, including, but not limited to:
319	• Wind turbine towers setback from residences and existing roadways in
320	accordance with or in excess of applicable regulations;
321	 Wind turbine locations will comply with applicable noise requirements;
322	• During construction and operation of the Project, temporary (safety) and
323	permanent fencing will be used to restrict access to the site;
324	• Warning signs will be in place and Project facilities (turbine tower doors, gates at
325	facilities, etc.) will be locked when not in use;
326	 Regular maintenance and inspections will be conducted; and
327	A professional engineer would certify that the foundation and tower design of the
328	turbines is within accepted professional standards, given local soil and climate
329	conditions.
330	
331	Q. How has Prevailing Wind Park accounted for existing infrastructure (including
332	existing communications systems) in designing the Project?
333	A. Prevailing Wind Park has conducted a microwave beam path analysis and sited in a
334	manner that avoids all identified microwave beam paths and communication
335	systems. Prevailing Wind Park also submitted a Project notification letter to the U.S.
336	Department of Commerce National Telecommunications and Information

336 Department of Commerce National Telecommunications and Information
337 Administration ("NTIA"). NTIA's determination is expected around the beginning of
338 June 2018.

339

The Department of Defense and the Department of Homeland Security Long Range Radar Joint Program Office's "pre-screening tool" used to evaluate the impact of wind turbines on air defense long-range radar was applied to the Project Area and returned a result of "no anticipated impact" (green) to Air Defense and Homeland 344 Security radars. Additionally, the Project is not likely to impact weather radar 345 operations at NEXRAD Weather Surveillance Doppler Radar Stations.

346

347 Q. Will the Project participate in the South Dakota One-Call program?

- 348 A. Yes.
- 349

Q. With respect to use of existing local roads as haul roads, will Prevailing Wind Park coordinate with local road authorities regarding the use and restoration of those roads?

A. Yes. Prevailing Wind Park will coordinate with applicable local road authorities to obtain road use agreements and/or necessary road permits prior to construction to ensure safe and efficient use and to minimize and mitigate Project impacts to haul roads. The road use agreements will also address improvements to existing roads and restoration of haul roads to their pre-construction condition following construction. Additional information concerning haul roads is contained in Sections 20.4.1.1 and 20.4.2.1 of the Application.

360

Q. What steps will the Project take to prepare for a potential emergency situation at the Project site during construction and when the Project is operational?

363 A. Prevailing Wind Park and its construction team will coordinate with local and county 364 emergency management to develop procedures for response to emergencies, 365 natural hazards, hazardous materials incidents, manmade problems, and potential 366 incidents concerning Project construction. During Project operations, the Project 367 operator would coordinate with local and county emergency management for the 368 purpose of protecting the public and the property related to the Project during 369 natural, manmade or other incidents. The Project would register each turbine 370 location and the O&M building with the rural identification/addressing (fire number) 371 system and 911 systems.

372

373Q. HasPrevailingWindParkconsideredelectromagneticinterferencein374connection with the construction and operation of the Project?

A. Yes. Prevailing Wind Park completed an RF Impact Study, consisting of three
sections: microwave point-to-point path analysis; airports, radar stations, and
military aircraft operations; and NTIA notification. See Section 15.6 of the
Application and Appendix O for additional detail.

379

Q. Will the Project be designed, constructed, and operated in compliance with all applicable federal, state, and local regulations?

- 382 A. Yes.
- 383
- 384 X. PROJECT BENEFITS
- 385

386 Q. Please describe the local and state benefits the Project will provide.

387 A. The Project is expected to create both short-term and long-term positive impacts to 388 the local economy. Impacts to social and economic resources from construction 389 activities would be short-term. Local businesses, such as restaurants, grocery 390 stores, hotels, and gas stations, would see increased business from construction-391 related workers during the construction phase of the Project. Local industrial 392 businesses, including aggregate and cement suppliers, welding and industrial 393 suppliers, hardware stores, automotive and heavy equipment repair, electrical 394 contractors, and maintenance providers, would also likely benefit from construction of the Project. In addition to the direct payments, construction of the Project would 395 396 create a \$14.9 million boost to the local economy.

397

Prevailing Wind Park estimates that \$220,000 of food, supplies, and fuel would be purchased locally by the Project and Project staff annually (or \$20.4 million over the life of the Project). The Project would generate approximately \$60 million in direct economic benefits for local landowners, local communities, and the State of South Dakota. Over the life of the Project (30 years), it would create direct payments of more than:

Approximately \$37 million to landowners, including an average of \$1,230,000
 annually from lease payments;

406	Approximately \$6 million to Bon Homme County, or \$201,000 annually from
407	taxes paid;
408	Approximately \$4.2 million to Charles Mix County, or \$140,000 annually from
409	taxes paid;
410	• Approximately \$913 thousand to Hutchinson County, or \$30,500 annually from
411	taxes paid;
412	• Approximately \$1.5 million to area school district(s), or \$371,000 annually from
413	taxes paid; and
414	Approximately \$11.1 million to the State of South Dakota, or \$336,000 annually
415	from taxes paid.
416	
417	XI. CONCLUSION
418	
419	Q. Does this conclude your Direct Testimony?
420	A. Yes.
421	
422	Dated this 30 th day of May, 2018.
	Janden
423	U
424	James Damon