

Rocky Mountain Power
Docket No. 17-035-40
Witness: Chad A. Teply

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF UTAH

ROCKY MOUNTAIN POWER

Second Supplemental Direct Testimony of Chad A. Teply

February 2018

1 **Q. Are you the same Chad A. Teply who previously submitted testimony in this**
2 **proceeding on behalf of Rocky Mountain Power (“the Company”), a division of**
3 **PacifiCorp?**

4 A. Yes.

5 **PURPOSE AND SUMMARY OF TESTIMONY**

6 **Q. What is the purpose of your second supplemental direct testimony in this**
7 **proceeding?**

8 A. I address the limited change to the final shortlist of the Company’s 2017R Request for
9 Proposals (“2017R RFP”) by updating my previous testimony to describe the new wind
10 resources (“Wind Projects”) selected as final shortlist resources in the 2017R RFP and
11 explain how the Wind Projects compare to the original proxy-benchmark resources
12 incorporated into my direct testimony. I also provide the information required by Public
13 Service Commission of Utah (“Commission”) Rule R746-430-2(1)(b), (e) and (f) for
14 the Wind Projects and the associated facilities necessary to interconnect the Wind
15 Projects. The other requirements under Utah Admin. Code Rule R746-430-2(1) are
16 addressed in the testimony of other Company witnesses.

17 **Q. Please summarize your testimony.**

18 A. The Company has updated the final shortlist for the 2017R RFP and replaced the
19 McFadden Ridge II project with the Ekola Flats project, a benchmark included in the
20 Company's initial filing. The Ekola Flats project has remained substantively identical
21 to the project described in my direct testimony. The Company is on track to
22 successfully deliver the Combined Projects by year-end 2020 through timely

23 development, procurement, and implementation. All of the steps taken by the Company
24 ensure that the Wind Projects will qualify for production tax credits (“PTCs”).

25 **SECOND SUPPLEMENTAL DIRECT TESTIMONY**

26 **Q. Please describe any changes to the Wind Projects selected to the 2017R RFP final**
27 **shortlist since the Company’s January 16, 2018, supplemental filing.**

28 A. There is one change to the final shortlist--the 109 MW McFadden Ridge II Company
29 benchmark project has been replaced by the 250 MW Ekola Flats Company benchmark
30 project. Thus, the Wind Projects selected to the 2017R RFP final shortlist are still four
31 facilities in Wyoming, which now total approximately 1,311 MW:

- 32 1. Ekola Flats - 250 MW Company benchmark;
- 33 2. TB Flats I and II (combined into single project) - 500 MW Company
34 benchmark;
- 35 3. Cedar Springs - 400 MW third-party build-transfer and power purchase
36 agreement; and
- 37 4. Uinta - 161 MW third-party build-transfer.

38 **Q. How do these projects relate to the benchmark projects included in the initial**
39 **application?**

40 A. The Ekola Flats and TB Flats I and II projects were benchmark projects included in the
41 Company's initial application. The Cedar Springs and Uinta projects were not included
42 in the Company's initial application, but were included in the Company's January 16,
43 2018, supplemental filing.

44 **Q. Has the Ekola Flats project substantively changed since the Company provided**
45 **detailed information in its initial application?**

46 A. No. The Ekola Flats project selected to the updated final shortlist is substantively
47 identical to the project described in the Company's direct testimony (Teply Direct, lines
48 352-377; Confidential Exhibit RMP__(CAT-1)). Ekola Flats is still a nominal 250 MW
49 wind facility located in Carbon County, Wyoming. It is currently being developed by a
50 third-party under a Development Transfer Agreement and will be delivered by the
51 Company under an engineer, procure, and construct ("EPC") contractual structure, with
52 a turbine supply agreement ("TSA") being the other major commercial agreement for
53 the project. Ekola Flats is expected to have approximately 64 2.3-MW-to-4.2-MW wind
54 turbine generators. The facility will consist of an electrical collection system, one (two,
55 if more economic) 34.5-kilovolt ("kV") to 230-kV collector substation, 230-kV
56 breakers, and 230-kV infrastructure between the wind project and the point-of-
57 interconnection substation, meteorological towers, access roads, required
58 communication and control facilities (e.g., metering, hardware, software, and
59 associated communication circuits and other equipment), and an operations and
60 maintenance ("O&M") building.

61 **Q. What are the total updated costs for the Wind Projects?**

62 A. The Wind Projects are estimated to cost \$1.46 billion, based on their total nominal
63 capacity of 1,311 MW and recognizing the split procurement attributes of the Cedar
64 Springs facility. This compares to the Company's initial estimated costs of \$1.37 billion
65 for 860 MW of nominal capacity described in my direct testimony (Teply Direct, line
66 93).

67 On a cost per kilowatt of installed capacity, the Wind Projects are estimated to
68 cost approximately \$1,310 per kilowatt, again recognizing the split procurement
69 attributes of the Cedar Springs project. This amount is lower than the cost per kilowatt
70 estimate for the initial benchmark projects, as well as the original shortlist projects
71 included in the January 16, 2018, supplemental direct testimony. Thus, the Wind
72 Projects selected to the 2017R RFP final shortlist provide additional capacity while
73 continuing to deliver significant customer benefits. The overall costs of the Combined
74 Projects reflected in this filing are generally consistent with the costs included in the
75 initial filing.

76 **Q. Does the Ekola Flats project rely on the Transmission Projects for**
77 **interconnection?**

78 A. Yes. The Ekola Flats project relies on the construction of the Transmission Projects,
79 which will relieve existing congestion and allow interconnection of the Wind Projects.
80 In total, the benefits generated by the Wind Projects' zero-fuel-cost generation, which
81 lowers net power costs and provides 10 years of federal PTCs, continue to support cost-
82 effective development of the Transmission Projects.

83 **Q. Does the Ekola Flats project meet the Internal Revenue Service's ("IRS") start-**
84 **of-construction criteria to qualify for PTCs?**

85 A. Yes. The Ekola Flats project has sufficient wind turbine generator equipment procured
86 before December 31, 2016, to meet the start-of-construction definition for tax purposes.
87 The procurement transaction for Ekola Flats satisfies the safe-harbor requirements
88 under the PTC guidance issued by the IRS.

89 **Q. How does the Company plan to continue to procure the Ekola Flats project?**

90 A. The Company will continue to engage the Ekola Flats shortlisted EPC and TSA
91 counterparties in negotiations to finalize terms and conditions, with a target for
92 executable definitive agreements by April 16, 2018, to align with the ongoing
93 regulatory review proceedings.

94 **CONTINUED DEVELOPMENT, NEGOTIATIONS, AND IMPLEMENTATION**

95 **Q. Does re-introduction of the Ekola Flats project require additional landowner
96 notifications?**

97 A. Yes. Under the Wyoming Certificate of Public Convenience and Necessity statute
98 applicable to wind and transmission facilities, additional landowner notifications are
99 required for the 230 kV interconnection infrastructure for the Ekola Flats project.
100 Notifications will be sent to landowners within 2,000 feet of any 230 kV transmission
101 infrastructure related to the project. This approach is consistent with notifications
102 provided to landowners when the Company filed supplemental direct testimony.

103 **Q. Is an application with the Wyoming Industrial Siting Council (“ISC”) for the
104 Ekola Flats project being prepared?**

105 A. Yes. The ISC Permit Application for the Ekola Flats project is being developed and will
106 be filed timely to support year-end 2020 in-service date now that the project has been
107 selected to the 2017R RFP final shortlist. Based upon a review of the shortlisted project
108 schedules, the Company expects the ISC review processes and hearings for the Ekola
109 Flats project will be completed in 2018, subject to updates identified during agency
110 coordination and development of a detailed project implementation plan. The ISC is
111 required to hold a hearing within ninety days of each application under W.S. § 35-12-

112 109.

113 **Q. Has the Company performed preliminary evaluations of the wind potential at the**
114 **Ekola Flats project site?**

115 A. Yes. The Company submitted a third-party wind potential assessment for Ekola Flats
116 as part of its 2017R RFP benchmark proposal. The Company's 2017 RFP evaluation
117 team also validated wind potential with a third-party wind resource evaluation firm as
118 part of the 2017R RFP process, as described in the Company's supplemental direct
119 testimony. Wind assessments for the Ekola Flats project indicate that the site has a
120 favorable wind regime suitable for a high performance wind resource. Due to its
121 proximity to the Company's existing Seven Mile Hill wind project, the Company is
122 confident in the anticipated performance of the Ekola Flats project on a net capacity
123 factor basis.

124 **Q. Has the Company determined who will be responsible for construction of the**
125 **Ekola Flats project?**

126 A. Not yet. The Company is negotiating with shortlisted EPC contractors that submitted
127 formal proposals for the Ekola Flats project in 2017.

128 **Q. Has the Company determined who will supply the wind turbine generators for the**
129 **Ekola Flats project?**

130 A. Yes. The Company is finalizing negotiations with the shortlisted turbine suppliers that
131 submitted formal proposals for the Ekola Flats project follow-on turbines in 2017 and
132 as identified in its 2017R RFP benchmark proposal. The Company has acquired or has
133 rights to acquire safe-harbor wind turbine generator equipment which it proposes to use
134 at the Ekola Flats project as required to meet the IRS's start-of-construction criteria for

135 PTC eligibility.

136 **Q. How did the Company generate the cost information for construction, operation,**
137 **and maintenance of the Ekola Flats project through its useful life?**

138 A. As discussed in my supplemental direct testimony in this docket, the Company
139 prepared its capital cost estimates for the Wind Projects using information from a
140 variety of sources. (Teply Supplemental Direct, lines 294-324.)

141 For its Ekola Flats benchmark project, the Company obtained wind turbine
142 costs from solicitations in 2016 to procure the Company's safe-harbor wind turbine
143 generator equipment, and in 2017 for follow-on wind turbine generator equipment. The
144 Company also obtained balance of plant engineering, procurement, construction, and
145 commissioning costs from a solicitation in 2017 to support final submittals in the
146 2017R RFP process. Transmission interconnection costs were estimated using
147 comparable wind facility transmission studies and prior project experience, and internal
148 project development, management and permitting costs were estimated based upon the
149 Company's experience with construction of past wind facilities and other recent
150 generation resource additions. The Company applied contingencies in various cost
151 categories to account for project uncertainties given the current stage of development
152 of the project. O&M cost estimates were developed based upon the Company's
153 experience with wind resource O&M budgets and third-party contracts for the
154 Company's existing wind facilities. Ongoing capital costs were estimated based upon
155 the Company's experience and indicative costs provided by wind turbine generator
156 suppliers for critical capital components.

157 **Q. Will the Company and third-party developers collaborate with the Wyoming**
158 **Game and Fish Department, the U.S. Fish and Wildlife Service, and other**
159 **environmental agencies to develop and implement the Ekola Flats project?**

160 A. Yes. The Company and the third-party project developer have initiated discussions with
161 the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service
162 regarding developing and implementing the Ekola Flats project. The Company and the
163 third-party project developer have also begun pre-construction usage surveys for
164 various avian, bat, and wildlife species using recommendations from applicable state
165 and federal guideline documents, including the 2012 Land Based Wind Energy
166 Guidelines. The Company and the third-party project developer will coordinate with
167 county, state, and federal agencies that have jurisdiction over development, permitting,
168 and operations to ensure appropriate environmental and safety measures are
169 implemented throughout the life of all of the Wind Projects. The Company is
170 committed to establishing development and implementation schedules and protocols
171 that recognize the potential environmental impacts of all of the Wind Projects and strive
172 to mitigate negative impacts.

173 **Q. Will the Ekola Flats wind turbine generators or associated infrastructure be built**
174 **in Wyoming's Greater Sage Grouse Core area?**

175 A. No. The Ekola Flats wind turbine generators and associated infrastructure will not be
176 located within the current boundaries of Wyoming's Greater Sage Grouse Core area.

177 **Q. How will potential visual and lighting impacts from the Ekola Flats project be**
178 **addressed?**

179 A. State and county permitting regulations contain requirements that recognize and

180 address potential visual and lighting impacts. The Company and the third-party
181 developer will incorporate those applicable measures into the siting, construction, and
182 operations of the Ekola Flats projects as part of the permitting process. Such measures
183 may include: down-shielded lighting on project infrastructure; Federal Aviation
184 Administration approved/recommended turbine lighting protocols; active aviation light
185 management; and use of approved paint colors for turbines.

186 **Q. When will construction of the Ekola Flats project begin and end?**

187 A. As described in detail in the exhibits attached to my testimony, site construction of the
188 Ekola Flats project will begin as soon as the second quarter of 2019. The Company and
189 the third-party developer will not begin construction, however, until all of the necessary
190 regulatory approvals and applicable permits and authorizations from other local, state,
191 tribal or federal governmental agencies that have jurisdiction over the construction or
192 operation of the Ekola Flats project have been received, including approval from the
193 Wyoming ISC. The Company anticipates that substantial completion for the Ekola Flats
194 project, under normal construction circumstances, weather conditions, labor
195 availability and materials delivery, will be achieved by November 15, 2020, or as
196 otherwise updated during detailed negotiation of project contracts, schedules, and
197 implementation plans.

198 **Q. What is the expected operational life of the Ekola Flats project?**

199 A. The anticipated operational life of the Ekola Flats project has been assessed at 30 years
200 in this filing, which aligns with the Company's currently approved depreciable life for
201 wind resources. The operational life may be reviewed and extended based on advances
202 in turbine technologies or improvements in maintenance processes (or both) through

203 the course of the Company's regular depreciation studies and filings.

204 **Q. Will the Ekola Flats project be decommissioned or repowered at the end of its**
205 **operational life?**

206 A. The Company may dismantle and reclaim the Ekola Flats project at the end of its
207 operational life based upon the requirements of the operating permit. Typically, county
208 and state agencies identify the decommissioning requirements during the permitting
209 process, including expected reclamation efforts and overall decommissioning costs and
210 security requirements. The Company may also consider replacing or upgrading the
211 existing infrastructure at the end of the operational life if conditions (*i.e.*, economics,
212 permitting, customer load needs, etc.) are conducive to reinvestment in the project.

213 **REQUIREMENTS OF UTAH ADMIN. CODE RULE R746-430-2(1)**

214 **Q. Please summarize how the Company's filing meets the requirements for approval**
215 **of a significant energy resource.**

216 A. Utah Admin. Code Rule 746-430-2(1) describes what must be included in a request for
217 approval of a significant energy resource. As such, I have incorporated exhibits to my
218 direct testimony, supplemental direct testimony, and second supplemental direct
219 testimony that provide information for the Wind Projects pertaining to the requirements
220 set forth in Utah Admin. Code Rule R746-430-2(1)(b), (e), and (f).

221 **Q. Please describe the filing requirements set forth in Utah Admin. Code Rule R746-**
222 **430-2(1)(b), (e), and (f).**

223 A. Utah Admin. Code Rule R746-430-2(1)(b), (e), and (f) require the Company to provide
224 the following:

225 (b) Information to demonstrate whether approval of the selected
226 Significant Energy Resource is in the public interest;

227 * * *

228 (e) Contracts proposed for execution or use in connection with
229 the acquisition of the Significant Energy Resource and
230 identification of matters for which contracts are being negotiated
231 or remain to be negotiated;

232 (f) Information on the estimated costs for the Significant Energy
233 Resource, including but not limited to engineering studies, data,
234 and models used in the analysis, and any other costs which the
235 utility considers recoverable pursuant to Section 54-17-303.

236 **Q. Has the Company provided information to demonstrate that approval of the**
237 **Significant Energy Resource is in the public interest?**

238 A. Yes. Information to demonstrate that approval of the Significant Energy Resource is in
239 the public interest is included not only in my testimony and exhibits filed in this case,
240 but also in the initial application, testimony, and exhibits of Company witnesses. (*See*
241 *e.g.*, Crane Direct, lines 226-260; Link Direct, lines 751-935; Link Supplemental
242 Direct, lines 559-770.)

243 **Q. Has the Company provided contracts proposed for execution in connection with**
244 **the acquisition of the Significant Energy Resource and identified matters for**
245 **which contracts are being negotiated or remain to be negotiated?**

246 A. Yes. Confidential Exhibit RMP__(CAT-1SS-17) and Exhibit RMP__(CAT-4SS-8)
247 provide the pro forma contract forms that were used in connection with solicitation of
248 balance of plant EPC contract proposals for the Ekola Flats and TB Flats I and II Wind
249 Projects and solicitation of build transfer agreement proposals for the Cedar Springs
250 and Uinta Wind Projects. In addition, representative contract terms for wind turbine

251 generator procurement were provided in Highly Confidential Exhibits RMP__(CAT1-
252 2), RMP__(CAT2-2), and RMP__(CAT3-2) in the Company's initial filing, as were
253 balance of plant technical work scope documentation in Confidential Exhibits
254 RMP__(CAT1-3), RMP__(CAT2-3), and RMP__(CAT3-3).

255 I also describe the status of negotiations and matters that remain to be negotiated
256 above (relative to the Ekola Flats project) and in my prior testimony (relative to the TB
257 Flats I and II, Cedar Springs, and Uinta projects) (*See* Teply Supplemental Direct and
258 Rebuttal, lines 157-168, lines 186-223, lines 272-288, lines 478-503, lines 516-534,
259 lines 545-568.) As would be expected with negotiation of definitive agreements for
260 projects such as this, it is likely that the language of individual terms and condition in
261 the pro forma agreements will change prior to execution with individual counterparties;
262 however, the Company does not anticipate material deviations from the pro forma
263 agreements' concepts and risk mitigation measures responded to by competitive market
264 participants during the Company's competitive solicitations.

265 **Q. Has the Company provided information on the estimated costs for the Significant**
266 **Energy Resources, including but not limited to engineering studies, data, and**
267 **models used in the analysis, and any other costs which the utility considers**
268 **recoverable pursuant to Section 54-17-303?**

269 A. Yes. Confidential Exhibit RMP__(CAT-5SS) is a summary of estimated costs for the
270 Ekola Flats, TB Flats I and II, Cedar Springs, and Uinta Wind Projects. Company
271 witness Mr. Link provides information including data and models used in the analysis
272 of the Combined Projects, and describes other cost information considered recoverable
273 pursuant to Section 54-17-303.

274 **Q. Please describe the exhibits attached to this testimony for the nominal 250 MW**
275 **Ekola Flats facility that provide information required by Commission Rule 746-**
276 **430-2(1), or information otherwise pertinent to this case.**

277 A. Confidential Exhibit RMP____(CAT-1SS) provides information required for the
278 nominal 250 MW Ekola Flats, or information otherwise pertinent to this case. Subparts
279 to Confidential Exhibit RMP____(CAT-1SS) include:

- 280 • Confidential Exhibit RMP__(CAT-1SS-1): Updated Wind Turbine Generator Site
281 Layout
- 282 • Confidential Exhibit RMP__(CAT-1SS-7): Updated Project Map
- 283 • Confidential Exhibit RMP__(CAT-1SS-14): Signed Large Generator
284 Interconnection Agreement
- 285 • Confidential Exhibit RMP__(CAT-1SS-16): Third-party Wind Assessments
- 286 • Confidential Exhibit RMP__(CAT-1SS-17): Pro forma BOP EPC Contract
287 (applicable to Ekola Flats and TB Flats I and II)

288 **Q. Please describe the exhibits attached to this testimony for the nominal 400 MW**
289 **Cedar Springs facility and the nominal 161 MW Uinta facility that provide**
290 **information required by Commission Rule 746-430-2(1), or information otherwise**
291 **pertinent to this case.**

292 A. The following exhibit provides information required for the nominal 400 MW Cedar
293 Springs facility and the nominal 161 MW Uinta facility, or information otherwise
294 pertinent to this case:

- 295 • Exhibit RMP____(CAT-4SS-8): Pro forma Build Transfer Agreement (applicable to
296 Uinta and Cedar Springs projects; publicly available, but provided for ease of

297 reference).

298 **Q. Please provide a summary of the capital expenditures required to construct the**
299 **Wind Projects.**

300 A. Confidential Exhibit RMP___(CAT-5SS) to my testimony includes the summary.

301 **Q. Please describe the exhibits included with this testimony labeled Confidential**
302 **Exhibit RMP__(CAT-1SD-4) and Confidential Exhibit RMP__(CAT-2SD-1).**

303 A. To clarify the locations of the 230 kilovolt transmission tie-in lines for the Cedar
304 Springs and the TB Flats I and II wind projects, Confidential Exhibit RMP___(CAT-
305 1SD-4) and Confidential Exhibit RMP___(CAT-2SD-1) filed with my supplemental
306 testimony on January 16, 2018, were updated. These exhibits replace the original
307 Confidential Exhibit RMP___(CAT-1SD-4) for Cedar Springs and the original
308 Confidential Exhibit RMP___(CAT-2SD-1) for TB Flats in their entirety.

309 **CONCLUSION AND RECOMMENDATION**

310 **Q. What do you conclude in your second supplemental direct testimony?**

311 A. The Combined Projects remain well positioned to provide customer benefits and are
312 being effectively developed concurrently with ongoing regulatory proceedings--
313 including the 2017R RFP, procurement activities, and upcoming permitting--to
314 mitigate project risks and deliver desired outcomes. The Company continues to manage
315 project-development activities within a reasonable timeline to assess project risks,
316 incorporate those assessments into decision-making, and allow for changes in project
317 direction (*i.e.*, off-ramps), if necessary. The Company appreciates the parties'
318 engagement, and believes the Combined Projects will benefit from this rigorous
319 stakeholder review before the Company makes major commitments to the projects.

320 **Q. Does this conclude your second supplemental direct testimony?**

321 **A. Yes.**