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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of Rocky Mountain Power's Proposed Tariff Revisions to Electric Service Schedule No. 37, Avoided Cost Purchases from Qualifying Facilities	DOCKET NO. 17-035-T07
In the Matter of Rocky Mountain Power's 2017 Avoided Cost Input Changes Quarterly Compliance Filing	DOCKET NO. 17-035-37

DIRECT TESTIMONY OF KEN DRAGOON

ON BEHALF OF

UTAH CLEAN ENERGY

October 3, 2017

RESPECTFULLY SUBMITTED,
Utah Clean Energy



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1 **INTRODUCTION**

2 **Q: Please state your name and business address.**

3 A: My name is Ken Dragoon. My business address is 3519 NE 15th Avenue, #227,
4 Portland, Oregon 97212.

5 **Q: By whom are you employed and in what capacity?**

6 A: I am the Director and proprietor of Flink Energy Consulting LLC, a private
7 consulting business whose mission is to advise a diverse clientele on matters
8 relating to electric power planning and analysis, specializing in issues relating to
9 renewable energy sources.

10 **Q: On whose behalf are you testifying?**

11 A: I am testifying on behalf of Utah Clean Energy (UCE).

12 **Q: Please provide your professional experience and qualifications.**

13 A: I am the Director and proprietor of Flink Energy Consulting LLC. I began Flink
14 Energy in October 2014; however my career in the power industry is in its fourth
15 decade, having started at the Bonneville Power Administration (BPA) in 1982. I
16 worked at BPA in a number of capacities until 1996, ranging from power system
17 planner and hydro modeling to risk management and runoff forecasting. After
18 BPA, I worked for PacifiCorp, also in a number of capacities that included
19 contract pricing and structuring analysis, risk management, power system
20 modeling, and renewable resource acquisitions. I performed PacifiCorp's first
21 wind integration cost study for its 2003 IRP. After nine years at PacifiCorp, I
22 spent four years at Renewable Northwest Project (now Renewable Northwest) as
23 their Research Director, primarily working on wind integration and integration

24 cost issues. I spent two years each at the Northwest Power and Conservation
25 Council and at Ecofys, a sustainable energy consulting firm headquartered in The
26 Netherlands. I hold a master's degree in physics from the University of New
27 Hampshire, 1982.

28 **Q: Have you testified previously before this Commission?**

29 A: Yes, I testified on behalf of the Utah Clean Energy regarding PacifiCorp's
30 Capacity Factor Approximation Method (CFAM) in Docket 14-035-140 in 2015.

31

32 **POSITION & RECOMMENDATIONS**

33 **Q: Please summarize your position in this matter.**

34 A: PacifiCorp contends that limiting Qualifying Facility (QF) avoided cost capacity
35 payments to the deferral of Integrated Resource Plan (IRP) preferred portfolio
36 resources of the *same type* results in “the most reasonable forecast of avoided
37 costs.” To the contrary, PacifiCorp's proposed method will very likely lead to
38 avoided cost payments that violate FERC's principles to establish avoided costs
39 that are “just and reasonable to the electric consumer of the electric utility” and
40 that do “not discriminate against qualifying cogeneration and small power
41 production facilities.¹”

42 In this docket, the Commission must determine how to address rates for
43 renewable QFs that have the potential to displace renewable resources of differing
44 types, which is an issue that has not been directly addressed before by this
45 Commission. This is a complicated issue, and in this testimony I recommend that

¹ *Order on Phase II Issues*, DOCKET NO. 12-035-100 (August 16, 2013), pp 4-5.

46 the Commission not accept PacifiCorp's proposal to determine avoided costs
47 based on deferring only resources of similar technologies in the IRP preferred
48 portfolio. PacifiCorp's proposal will result in unjust and unreasonable avoided
49 cost rates and discriminate against QFs of all resource types. In this testimony I
50 also make recommendations for calculating avoided costs when the IRP calls for
51 diverse resources.

52

53 **PROXY/PDDRR METHOD AND COMMISSION'S ORDER IN 12-035-100**

54 **Q. Please describe the Proxy/PDDRR method as it was approved in Docket No.**
55 **12-035-100.**

56 A. The Proxy/PDDRR method is a two part method for determining avoided costs.
57 As approved for qualifying facilities deferring thermal resources, during the
58 sufficiency period, avoided costs are determined by adding a resource to the
59 GRID model with zero cost energy and observing the calculated reduction in
60 revenue requirements, which are taken to be the avoided costs of the added QF.
61 During the deficiency period, in addition to avoided energy costs derived from
62 differential GRID runs, avoided capacity costs are taken as the capital (and non-
63 fuel operations and maintenance expenses) of the next deferrable (thermal)
64 resource added to the system in PacifiCorp's Integrated Resource Plan (IRP)
65 preferred portfolio. The capacity cost payment for a renewable QF is adjusted to
66 account for the renewable resource's capacity value relative to a thermal resource.

67 In Docket 12-035-100, the Commission also addressed what happens
68 when a renewable resource is able to defer an IRP resource of its same type. The

69 Commission found, “When PacifiCorp's IRP planned resources include a cost-
70 effective renewable resource of the same type as the QF, avoided cost capacity
71 payments under Schedule 38 shall be based on the capital costs of the next
72 deferrable resource of the same type in PacifiCorp's IRP planned resources.”² In
73 this case, the renewable QF’s capacity payment is not adjusted for capacity value,
74 because its resource attributes are the same as the proxy resource.³

75 To the best of my knowledge, this Commission has not addressed an
76 avoided cost pricing method to employ for a renewable QF displacing an IRP
77 renewable resource of a *different type*, or what to do when an IRP preferred
78 portfolio calls for diverse resources in the same year. Therefore, the current IRP,
79 which calls for new wind and solar resources, as well as new gas resources,
80 presents issues that are new to this Commission in terms of avoided costs.

81

82 **PACIFICORP’S PROPOSED AVOIDED COST METHODOLOY**

83 **Q: What is your understanding of PacifiCorp’s proposed changes to the**
84 **Proxy/PDDRR method for calculating Schedule 38 avoided costs?**

85 A: In the Direct Testimony of Daniel MacNeil for PacifiCorp, Mr. MacNeil states
86 that limiting the current Proxy/PDDRR methodology to deferral of “cost-effective
87 renewable resources from the IRP preferred portfolio by QFs of the same type
88 produces the most reasonable forecast of avoided cost.” That is, PacifiCorp is
89 proposing that wind QFs may only defer wind resources, solar resources may only

² Commission Order in docket 12-035-100, August 16, 2003 page 20.

³ *Ibid.*

90 defer solar resources, etc. However, the testimony appears unclear exactly how
91 the Company proposes to implement that policy. For example, PacifiCorp may be
92 proposing to eliminate the ability of one renewable resource to defer a non-like
93 renewable resource if a “like” renewable resource does not appear in the IRP. Or
94 PacifiCorp may be proposing to eliminate the ability of a renewable resource to
95 defer any non-like resource, including a thermal resource if a “like” resource is
96 called for later in the IRP. For example, if the IRP called for a gas plant in 2025,
97 wind in 2028, and solar in 2031, would a solar QF be able to defer the gas plant in
98 2025? These questions do not seem to be directly addressed in PacifiCorp’s
99 testimony.

100 **Q: Are there practical implications of one or the other of these interpretations?**

101 A: Yes, both interpretations are problematic. In the first case, where no proxy
102 resource displacement is allowed except for a like resource in the IRP portfolio,
103 then PacifiCorp’s proposal effectively provides for multiple
104 sufficiency/deficiency periods depending on resource type, which is a completely
105 novel, confusing, and unsupported re-definition of the deficiency period.

106 On the other hand, if PacifiCorp (rightly) allows renewable resources to
107 displace thermal generation, it seriously calls to question the contention that
108 dissimilar resources cannot be deferred. It is difficult to understand, for example,
109 why wind and solar are more different from one another than wind and coal, or
110 solar and gas turbines.

111 **Q: What underlies PacifiCorp’s argument that displacing only resources of**
112 **similar types results in the most accurate forecast of costs?**

113 A: Mr. MacNeil’s testimony provides two basic rationale for its conclusion:

- 114 1) “Limiting deferral to QFs of the same type helps ensure reasonable
115 alignment between operating characteristics of a QF and the preferred
116 portfolio resources it is assumed to defer...” (MacNeil at lines 239-242);
117 and
118 2) Its example of deferring Wyoming wind resources with a solar resource
119 of equivalent capacity contribution results in anomalous results. (MacNeil
120 at lines 286-301)

121 **Q: Do these rationale reasonably support concluding that avoided costs should**
122 **be based on similar resources?**

123 A. No. Although I am not a lawyer, these arguments appear to contradict the
124 requirements of PURPA. Although it is correct that renewable resources of
125 different technology types have different characteristics, the regulatory process
126 implementing PURPA has a history of accommodating those differences to the
127 extent practicable. The Utah Commission cited FERC’s directives to
128 accommodate such differences in its DOCKET NO. 12-035-100, *Order on Phase*
129 *II Issues*, (issued August 16, 2013), pp 5-6.

130 These FERC directives, as well as previous Utah avoided cost dockets, are
131 directed at accommodating the differences that PacifiCorp is now declaring
132 cannot be adequately accommodated. Establishing pricing and procedures for
133 fairly substituting different resource types represents a primary purpose of

134 PURPA's avoided cost requirements. Mr. MacNeil's trouble accounting for
135 differences in resource characteristics overturns considerable precedent and is
136 vastly inadequate support for such an extreme shift in avoided cost methodology.

137 **Q: What is your basis for asserting that PacifiCorp's proposed avoided cost**
138 **methodology results in avoided cost rates that are not just and reasonable to**
139 **ratepayers and that discriminate against QF resources?**

140 A: PacifiCorp appears to be claiming that a solar QF's avoided cost pricing can only
141 be based on solar resources in the preferred portfolio that don't come on line until
142 many years into the study horizon, *after* other new resources are added. If
143 PacifiCorp is seriously claiming that solar has no capacity value⁴ until new *solar*
144 resources appear in the preferred portfolio, this argument is technically false,
145 against precedent regarding capacity contributions, contrary to IRP assumptions
146 on capacity contributions, patently discriminatory against renewable resources,
147 and deprives utility ratepayers from the economic (to say nothing of the
148 environmental) benefits of cost-competitive, often local, renewable QFs. This is
149 not a just or reasonable result for ratepayers and is discriminatory against QFs.
150 Furthermore, the solar resources called for in the current IRP do not come on-line
151 until after the expiration of the investment tax credit, further denying ratepayers
152 of the potential benefits of a limited opportunity for extremely cost-effective solar
153 resources.

154

⁴ (Notwithstanding any capacity value included in displaced front office transactions.)

155 **RECOMMENDATIONS**

156 **Q: Do you have alternative recommendations?**

157 A: First of all, PacifiCorp should be clearer in its testimony about how it actually
158 proposes calculating avoided costs when a proxy renewable resource is involved.
159 The Commission would be served by a more specific explanation of how the
160 Company envisions the Proxy/PDDRR method should be applied when there are
161 multiple types of renewable (and thermal) resources in the preferred portfolio that
162 come in over the IRP study horizon, which may be similar or dissimilar to a
163 particular QF.

164 **Q: Do you have a proposal for how avoided costs could be calculated, consistent**
165 **with FERC regulations and Utah Commission orders, when proxy renewable**
166 **resources appear in the IRP preferred portfolio?**

167 A: Yes. First, any renewable QF resource should receive a capacity payment during
168 the deficiency period, consistent with the usual Proxy/PDDRR method of
169 determining avoided capacity value based on the capital and non-fuel fixed and
170 variable operations and maintenance costs of the next deferrable capacity
171 (typically thermal) resource from the IRP.

172 For years in which the IRP preferred portfolio calls for renewable
173 resources, the cost of those resources should establish a floor on avoided costs for
174 renewable QFs. This floor should be adjusted as necessary to account for relevant
175 differences between the IRP resource and the QF, such as capacity contribution
176 and integration cost.

177 You can think of this proposal in steps:

- 178 1. Calculate avoided costs using the typical Proxy/PDDRR method, using the
179 next deferrable thermal resource in the IRP to establish a capacity
180 payment during the resource deficiency period.
- 181 2. Use the IRP preferred portfolio renewable resource cost (levelized
182 cost/MWh) as a floor on avoided costs during the years in the planning
183 horizon in which the renewable resource appears.
- 184 3. To apply this avoided cost floor to a renewable QF, adjust the floor for
185 relevant differences between the IRP resource and the QF resource, such
186 as capacity contribution and integration cost.

187 **Q: Please explain why preferred portfolio renewable resources should establish**
188 **a floor for renewable QF avoided costs.**

189 A: QFs displace the utility's highest cost resources. The existence of renewable
190 resources in the preferred portfolio (the least cost, least risk mix of resources) is
191 prima facie evidence that they are at or below the IRP avoided cost, and so should
192 serve as a floor for any calculated avoided cost.

193 **Q: How do you propose to calculate an avoided costs floor for a renewable QF if**
194 **it is of a different type than a renewable resource called for in the IRP**
195 **preferred portfolio?**

196 A: The simplest way would be to calculate the levelized energy cost of the IRP
197 resource (the renewable proxy) and then adjust that cost for any differences, such
198 as capacity value and integration cost, between the renewable proxy and the QF.
199 For example, if the Wyoming wind projects in the current preferred portfolio have
200 a levelized energy cost of (say) \$30/MWh, then that should set the floor for

201 renewable QF avoided costs over the years in which the IRP study includes those
202 resources. If another QF wind resource of roughly the same characteristics (e.g.,
203 capacity value) were to replace the IRP resource, then it stands to reason, that
204 resource should be worth at least \$30/MWh to the Company. If the QF is a solar
205 resource, then it should also receive \$30/MWh, plus an adjustment for any
206 additional capacity value it has, and a further adjustment for any difference in
207 integration costs.

208 **Q: What effect should the Company's purported ability to defer or not to defer**
209 **Wyoming wind projects have?**

210 A: None. The model picks renewable resources because they reduce the Company's
211 revenue requirements, not because the model is seeking low cost capacity. The
212 model would choose as much resource with the cost and characteristics of
213 Wyoming wind as is available, so the deferral of the resource is really irrelevant.
214 Deferral is much more an issue with respect to the model choosing resources to
215 maintain its reserve margin, and the ability of QF resources to defer the need to
216 acquire those resources. For purposes of determining an avoided cost floor based
217 on a renewable resource proxy, deferral is irrelevant.

218

219 **CONCLUSION**

220 **Q: Please summarize your conclusions and recommendations.**

221 A: The Commission should not accept PacifiCorp's novel and discriminatory
222 proposal to limit QF avoided costs to resources of similar technologies as they
223 may (or may not) appear in the preferred portfolio. IRP preferred portfolio

224 renewable resources can still provide a proxy for the purpose of determining
225 renewable QF avoided costs, consistent with my recommendations herein,
226 without resorting to the extraordinary and unnecessary restrictions inherent in
227 PacifiCorp's proposed methodology.

228 **Q: Does that conclude your testimony?**

229 A: Yes.