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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of Rocky Mountain Power's Proposed Revisions to Electric Service Schedule 32, Service from Renewable Energy Facilities	Docket No. 14-035-T02
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PREFILED DIRECT TESTIMONY OF KEVIN C. HIGGINS

The UAE Intervention Group (UAE) hereby submits the Prefiled Direct Testimony of
Kevin C. Higgins.

DATED this 9th day of September, 2014.

/s/ _____
Gary A. Dodge,
Attorney for UAE

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served by email this 9th day of September 2014 on the following:

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/s/ _____

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Direct Testimony of Kevin C. Higgins

on behalf of

UAE

Docket No. 14-035-T02

September 9, 2014

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DIRECT TESTIMONY OF KEVIN C. HIGGINS

INTRODUCTION

Q. Please state your name and business address.

A. My name is Kevin C. Higgins. My business address is 215 South State Street, Suite 200, Salt Lake City, Utah, 84111.

Q. By whom are you employed and in what capacity?

A. I am a Principal in the firm of Energy Strategies, LLC. Energy Strategies is a private consulting firm specializing in economic and policy analysis applicable to energy production, transportation, and consumption.

Q. On whose behalf are you testifying in this proceeding?

A. My testimony is being sponsored by the Utah Association of Energy Users Intervention Group ("UAE").

Q. Please describe your professional experience and qualifications.

A. My academic background is in economics, and I have completed all coursework and field examinations toward a Ph.D. in Economics at the University of Utah. In addition, I have served on the adjunct faculties of both the University of Utah and Westminster College, where I taught undergraduate and graduate courses in economics. I joined Energy Strategies in 1995, where I assist private and public sector clients in the areas of energy-related economic and policy analysis, including evaluation of electric and gas utility rate matters.

22 Prior to joining Energy Strategies, I held policy positions in state and local
23 government. From 1983 to 1990, I was economist, then assistant director, for the
24 Utah Energy Office, where I helped develop and implement state energy policy.
25 From 1991 to 1994, I was chief of staff to the chairman of the Salt Lake County
26 Commission, where I was responsible for development and implementation of a
27 broad spectrum of public policy at the local government level.

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

29 A. Yes. Since 1984, I have testified in thirty-three dockets before the Utah
30 Public Service Commission on electricity and natural gas matters.

31 **Q. Have you testified previously before any other state utility regulatory**
32 **commissions?**

33 A. Yes. I have testified in approximately 150 other proceedings on the
34 subjects of utility rates and regulatory policy before state utility regulators in
35 Alaska, Arkansas, Arizona, Colorado, Georgia, Idaho, Illinois, Indiana, Kansas,
36 Kentucky, Michigan, Minnesota, Missouri, Montana, Nevada, New Mexico, New
37 York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina,
38 Texas, Virginia, Washington, West Virginia, and Wyoming. I have also filed
39 affidavits in proceedings before the Federal Energy Regulatory Commission
40 (“FERC”) and prepared expert reports in state and federal court proceedings
41 involving utility matters.

42

43 **Q. What is the purpose of your testimony in this case?**

44 A. My testimony addresses the proposal by Rocky Mountain Power (“RMP”)
45 for a new Rate Schedule 32, which would provide service to customers utilizing
46 power generated by a renewable energy facility that is either owned by the
47 customer or is under a contractual arrangement with RMP and the customer.
48 Schedule 32 is being introduced to implement Senate Bill 12, which was passed
49 into law in 2012. [Utah Code Title 54, Chapter 17, Part 8.] This statute enables
50 qualifying retail customers to have renewable energy delivered to their premises.

51 **Q. What are the primary conclusions and recommendations in your testimony?**

52 A. I offer the following conclusions and recommendations:

- 53 • RMP has divided the proposed Schedule 32 into three interrelated services:
54 delivering the contracted-for renewable energy; “filling in” (or shaping) the power
55 required by the customer when the peak amount of contracted-for renewable
56 energy is not fully available; and providing supplemental power service beyond
57 the contracted-for amount of renewable energy. This division of the rate schedule
58 into these three services is a useful construct.
- 59 • I agree with the Company’s proposed treatment of supplementary power and
60 energy and have no recommended changes to the Company’s proposal for that
61 service.
- 62 • The Company’s proposed combination of customer charges and administrative
63 fees strikes me as too costly and would likely result in an undue barrier to
64 participation. If Schedule 31 customer charges are used to set the Schedule 32

65 customer charges, as proposed by RMP, then no additional administrative fee
66 should be imposed. Alternatively, if an administrative fee is imposed, then the fee
67 should be reduced to \$200 per month to reflect a more efficient billing process
68 than that assumed by the Company and the customer charges should be set at the
69 charge in the customer's otherwise applicable rate schedule rather than Schedule
70 31.

- 71 • I am not persuaded that the generation backup facilities charge proposed by RMP
72 is appropriate for Schedule 32 service. There is no requirement or mention of a
73 generation backup facilities charge in Senate Bill 12. Instead of adopting this
74 charge, the backup power (or shaping) charge should be designed to recover the
75 customer's pro-rata share of the generation demand costs in proportion to the
76 customer's use of the shaping service, as I explain in detail in my testimony.
- 77 • The delivery facilities charges proposed by the Company are too high in relation
78 to the tariff rates currently in effect. Adoption of RMP's proposed rates would
79 cause Schedule 32 customers to be charged more for delivery service than their
80 counterparts on Schedule 9 and Schedule 8 would pay for delivery of RMP
81 power. Instead, these charges should be recalculated as described in my
82 testimony to produce rates that more accurately reflect the delivery-related
83 demand charges actually embedded in Schedule 9 and Schedule 8 rates.
- 84 • Although the daily demand charge proposed by RMP for backup power charges is
85 a useful construct, it is, unfortunately, inadequate for reasonably implementing
86 Senate Bill 12 because it is not granular enough. Under the rate design proposed

87 by RMP for backup (or shaping) power, many Schedule 32 customers would be
88 doomed to receive very little credit, if any, for avoiding RMP's generation
89 demand charges, even when the renewable resource the customer is importing
90 provides reliable capacity during much of the on-peak period. This result is
91 largely an artifact of the definition of the on-peak period and the definition of
92 daily billing demand. A more reasonable approach is to make the daily demand
93 charge more granular by converting it into an hourly demand charge (which I call
94 the "hourly on-peak shaping charge.") By doing so, the Schedule 32 customer
95 would receive a pro rata credit for the renewable energy capacity the customer
96 imports during the on-peak period.

97

98 **SCHEDULE 32**

99 **Q. What objectives should the Commission strive to attain in approving a rate**
100 **schedule to implement Senate Bill 12?**

101 A. Senate Bill 12 gives Utah customers the ability to do something they
102 cannot do today: acquire off-site renewable energy for delivery to their premises.
103 In implementing this new statute, the Commission should strive to adopt changes
104 to the RMP tariff that will enable customers to successfully make these
105 acquisitions within the constraints prescribed by the legislation. These constraints
106 include a minimum 2.0 MW size threshold for participation and an overall cap of
107 300 MW on the total program size. The statute also requires that participating
108 customers pay the incremental administrative, metering, and communication costs

109 of participation as well as the cost of delivering the acquired renewable energy
110 across the utility's transmission and distribution system.

111 At the same time that the Commission assigns participating customers
112 their appropriate share of costs, the Commission should also be careful to ensure
113 that the rate structure it adopts does not result in undue barriers to acquiring and
114 delivering renewable energy to participating customers as intended by the
115 legislature.

116 To ensure that participating customers are properly credited against their
117 utility bills for the acquired renewable energy, the statute provides that the
118 following items are to be excluded from the customers' utility charges:

- 119 (a) any kilowatt hours of electricity delivered from the renewable energy facility,
120 based on the time of delivery, adjusted for transmission losses;
121 (b) any kilowatts of electricity delivered from the renewable energy facility that
122 coincide with the contract customer's monthly metered kilowatt demand
123 measurement, adjusted for transmission losses;
124 (c) any transmission and distribution service that the contract customer pays for
125 under Subsection (1) or (2); and
126 (d) any transmission service that the contract customer provides under Subsection
127 (2) to deliver generation from the renewable energy facility.

128 In determining whether the proposed tariff changes to implement Senate
129 Bill 12 are reasonable, the Commission should take into account how well the
130 proposal adheres to these required cost exclusions.

131 **Q. What has RMP recommended for implementation of Senate Bill 12?**

132 A. RMP has proposed a new Rate Schedule 32 to implement Senate Bill 12,
133 which is described in the direct testimony of RMP witness David L. Taylor.
134 Schedule 32 is a fairly complex rate schedule that provides for three interrelated

135 services: delivering the contracted-for renewable energy; “filling in” (or shaping)
136 the power required by the customer when the peak amount of contracted-for
137 renewable energy is not fully available; and providing supplemental power
138 service beyond the contracted-for amount of renewable energy.

139 **Q. Under what terms does RMP propose to provide delivery of the renewable**
140 **energy?**

141 A. This portion of the service has a delivery facilities (or wheeling) charge
142 that is differentiated by voltage. The delivery facilities charge is a monthly
143 demand charge applied to the contracted amount (i.e., maximum hourly delivery)
144 of renewable energy. The delivery facilities charge, along with each of the
145 charges in Schedule 32, has a Step 1 and a Step 2 rate corresponding to the Step 1
146 and Step 2 rate increases approved in RMP’s recent general rate case. As shown
147 in Table 1 on page 13 of Mr. Taylor’s direct testimony, RMP’s proposed Step 1
148 delivery facilities charge is \$4.29 per kW-month for transmission voltage, \$6.83
149 per kW-month for primary voltage, and \$7.97 per kW-month for secondary
150 voltage.

151 As proposed by RMP, the delivery of renewable energy service also
152 includes a mandatory generation backup facilities charge, which is a demand
153 charge applied to the contracted amount of renewable energy. The Company’s
154 proposed Step 1 rate for this charge is \$1.38 per kW-month for transmission
155 voltage and \$1.25 per kW-month for primary and secondary voltage.

156 In addition to these charges, RMP proposes that participating customers
157 pay a customer charge equal to the Schedule 31 customer charge for the
158 corresponding voltage plus an administrative fee of \$450 per month.

159 **Q. Why did you classify the generation backup facilities charge as part of the**
160 **renewable energy delivery service and not as part of the shaping service?**

161 A. As proposed by RMP, the generation backup facilities charge is an
162 unavoidable charge to the customer that is tied to the renewable energy contract
163 demand. Under the Company's proposal, the customer would pay this charge
164 irrespective of whether the customer utilized the shaping service. Consequently, I
165 believe it is most appropriately considered to be part of the Company's proposal
166 for renewable energy delivery service.

167 **Q. Under what terms does RMP propose to provide "shaping" power required**
168 **by the customer when the peak amount of contracted-for renewable energy is**
169 **not fully available?**

170 A. There are two cost components to this service: a backup energy charge and
171 a backup power charge. The backup energy charge is for the kilowatt-hours used
172 by the customer when the peak amount of contracted-for renewable energy is not
173 fully available. This charge is the same as the energy charge in the customer's
174 otherwise applicable rate schedule.

175 The backup power charge is a daily demand charge that is intended to
176 recover generation demand costs associated with the power used by the customer
177 when the peak amount of contracted-for renewable energy is not fully available.

178 The amount of daily demand billed to the customer is based on the customer's
179 maximum hourly demand in excess of its renewable energy import during any on-
180 peak hour (up to the amount of its renewable energy contract demand). So for
181 example, if a customer has a renewable energy contract demand of 5 MW, and the
182 customer consumes 5 MW each hour of the on-peak period, and its renewable
183 energy output falls to a minimum level of 2 MW during one of the on-peak hours,
184 then the customer's backup power demand for the day would be 3 MW (5 MW
185 minus 2 MW).

186 **Q. Why do you characterize this service as “shaping” service rather than as**
187 **“backup” service?**

188 A. In general, backup service is needed on those occasions when a resource
189 experiences an outage. In contrast, the shaping product will be needed on a daily
190 basis for most renewable energy resources, even when they are operating entirely
191 as planned. Simply put, in Utah, the wind doesn't blow at a consistent speed
192 every hour of every day and the sun certainly does not shine at 9:00 in the evening
193 very often. So while the shaping service would serve the customer during an
194 outage of its resource, its more fundamental purpose is to provide shaping power
195 every single day.

196 **Q. Under what terms does RMP propose to provide supplementary power and**
197 **energy in excess of the customer's renewable energy contract demand?**

198 A. RMP proposes to provide this service under the same terms as the
199 customer's applicable rate schedule.

200 **Q. What is your assessment of RMP's Schedule 32 proposal?**

201 A. The Company's division of the rate schedule into the three services I
202 described above is a useful construct. In addition, I agree with the Company's
203 proposed treatment of supplementary power and energy and have no
204 recommended changes to the Company's proposal for that service.

205 However, I believe a number of changes should be made to other parts of
206 the Company's proposal. I will address each in turn.

207 *Customer Charge and Administrative Fee*

208 **Q. What is your concern regarding the proposed customer charge and**
209 **administrative fee?**

210 A. RMP's proposed monthly customer charges are based on RMP's Schedule
211 31 rates and are significantly greater than the Schedule 8 and Schedule 9 customer
212 charges for comparable voltages. In *addition* to these substantially higher
213 customer charges, RMP is proposing an administrative fee of \$450 per month.

214 The Company's proposed combination of customer charges and
215 administrative fees strikes me as too costly and would likely result in an undue
216 barrier to participation, particularly for smaller customers that are aggregating
217 load to reach the 2.0 MW minimum size for participation. While the Company
218 justifies the \$450 administrative expense based on an estimate of the time
219 required to hand bill each customer – 6 hours per month – I believe it is more
220 likely that some spreadsheet automation would be introduced into the process to

221 bring costs down. Frankly, 6 hours per month, *every* month, simply to bill each
222 participating customer appears unreasonable and inefficient on its face.

223 Moreover, the Schedule 31 customer charges that RMP is proposing to
224 adopt are already much higher than standard customer charges. For secondary
225 service, the Schedule 31 customer charge of \$131 per month is about double the
226 Schedule 8 customer charge and for primary service the Schedule 31 customer
227 charge of \$596 per month it is over eight times greater. For transmission voltage
228 service, the Schedule 31 customer charge of \$668 per month is more than two and
229 a half times greater than the Schedule 9 customer charge. Given the dramatically
230 greater starting level for the customer charges, I question why *any* additional
231 administrative fee is warranted.

232 **Q. What is your recommendation regarding the customer charge and**
233 **administrative fee?**

234 A. If Schedule 31 customer charges are used to set the Schedule 32 customer
235 charges, then no additional administrative fee should be imposed. Alternatively,
236 if an administrative fee is imposed, then the fee should be reduced to \$200 per
237 month to reflect a more efficient billing process than that assumed by the
238 Company and the customer charges should be set at the charge in the customer's
239 otherwise applicable rate schedule rather than Schedule 31. Of these two options,
240 I believe the second is preferable because it is more directly comparable to
241 customers' otherwise applicable rate schedules.

242 ***Generation Backup Facilities Charge***

243 **Q. What is your concern regarding the proposed generation backup facilities**
244 **charge?**

245 A. I am not persuaded that this charge is appropriate for Schedule 32 service.
246 First, Schedule 32 customers will be compensating RMP for “shaping” generation
247 through their monthly payments of backup energy and backup power charges.
248 These charges can be designed to be compensatory to the Company for the
249 service being provided. Second, there is no requirement or mention of a
250 generation backup facilities charge in Senate Bill 12. It is my understanding that
251 RMP was very involved in the discussions that led up to this legislation and
252 would have had ample opportunity to make the case for such a charge as part of
253 that process. As it is, the legislature did not see fit to prescribe this charge, but
254 did provide a 300 MW cap on overall participation, which limits the generation
255 reserves that might be needed to support the customer load in this program. In
256 light of the structure of the legislation, it is reasonable *not* to adopt this charge.
257 Instead, the backup power charge should be designed to recover the customer’s
258 pro-rata share of the generation demand costs in proportion to the customer’s use
259 of the shaping service, as I will discuss further below.

260 ***Delivery Facilities Charges***

261 **Q. What is your concern regarding the proposed delivery facilities charges?**

262 A. The charges proposed by the Company are too high in relation to the tariff
263 rates currently in effect.

264 **Q. How did RMP calculate the proposed delivery facilities charges?**

265 A. The Company derived the proposed charges from its cost-of-service study
266 in the last general rate case. To calculate the delivery facilities charge at
267 transmission voltage, RMP identified the transmission costs classified to demand
268 for Schedule 9 and related rate schedules. RMP then reduced this cost by 2.1
269 percent to adjust for the reduction to the Company's requested revenue
270 requirement that was ultimately approved in the general rate case. This figure
271 was then divided by the Schedule 9 Facilities kW billing determinant to produce a
272 Step 1 rate of \$4.29 per kW-month.

273 RMP followed a similar procedure in determining its proposed primary
274 and secondary voltage delivery facilities charges except that the analysis was
275 performed for transmission and distribution costs classified to demand for
276 Schedule 8.

277 **Q. Why do you believe this approach yields delivery facilities charges that are**
278 **too high?**

279 A. Although the charges were derived from the Company's cost-of-service
280 study, the actual rates in the Company's tariff do not match the Company's cost-
281 of-service study numbers in the first instance. Consequently, the delivery facility
282 charges proposed by RMP do not reasonably reflect the equivalent "delivery
283 facilities" unit charges actually found in the Schedule 9 or Schedule 8 rate
284 schedules. This mismatch means that Schedule 32 customers would be paying
285 different effective rates for delivery service than their counterparts taking fully
286 bundled service under Schedule 9 or Schedule 8.

287 To derive a more representative delivery facilities charge for Schedule 9, I
288 used the same cost-of-service study as the Company and calculated the share of
289 transmission demand costs allocated to Schedule 9 (and related rate schedules) as
290 a percentage of total transmission demand and generation demand costs allocated
291 to Schedule 9 (and related rate schedules). I then applied this percentage
292 (28.87%) to the total Step 1 demand revenue requirements approved for Schedule
293 9 in the recent general rate case and divided through by the Facilities kW billing
294 determinant to yield a Step 1 delivery facilities charge of \$3.79 per kW-month.
295 This charge more accurately reflects the transmission demand charge actually
296 embedded in Schedule 9 Step 1 rates. This calculation is presented in UAE
297 Exhibit 1.1, page 1.

298 I performed a similar calculation for Schedule 8 and derived a primary
299 voltage delivery facilities charge of \$6.70 per kW-month and a secondary delivery
300 facilities charge of \$7.82 per kW-month. These calculations are presented in
301 UAE Exhibit 1.1, page 2.

302 **Q. What are the consequences if the delivery facilities charges are set too high?**

303 A. The most obvious consequence is that Schedule 32 customers would be
304 charged more for delivery service than their counterparts on Schedule 9 and
305 Schedule 8 would pay for delivery of RMP power. This result would be
306 inequitable and unreasonable. An additional significant consequence is that the
307 RMP generation demand avoided by the Schedule 32 customer would be
308 undervalued. That is, taken together, the delivery (transmission and distribution)

309 and generation functions make up the entirety of a Schedule 9 or Schedule 8
310 customer's demand charges. If the Schedule 32 delivery facilities charge is set
311 higher than the effective rate embedded in Schedule 9 (or Schedule 8), then the
312 portion of the Schedule 9 (or Schedule 8) demand charge that the Schedule 32
313 customer is able to avoid – the generation portion – would be valued at *less* than
314 the generation demand charges embedded in Schedule 9 (and Schedule 8) rates.
315 Not only is such an outcome unreasonable, undervaluing avoided generation
316 demand appears to undermine the statutory requirement that “any kilowatts of
317 electricity delivered from the renewable energy facility that coincide with the
318 contract customer's monthly metered kilowatt demand measurement” must be
319 excluded from the customer's utility bill.

320 ***Backup Power Charges***

321 **Q. What is your assessment of RMP's proposed backup power charges?**

322 A. The structure of the backup power charges proposed by RMP is a useful
323 construct. As I discussed above, the product being provided by the backup power
324 charges is more accurately characterized as “shaping power” rather than “backup
325 power.” The backup power charges designed by the Company are daily demand
326 charges, rather than monthly demand charges. The daily demand charge is a
327 useful construct because it attempts to charge the Schedule 32 customer for the
328 customer's daily utilization of generation demand in excess of the generation
329 demand the customer is already paying for in the generation backup facilities

330 charge. This approach has merit when selling shaping power around an
331 intermittent resource such as renewable energy.

332 However, even though the daily demand charge is a useful construct, it is,
333 unfortunately, inadequate for reasonably implementing Senate Bill 12 because it
334 is not granular enough. Consider what occurs for a Schedule 32 customer that is
335 purchasing solar energy for delivery to its premises. Even though the solar
336 resource will be available and providing reliable capacity for much of the on-peak
337 period, the daily demand charge approach realistically will not provide this
338 customer any credit at all for avoiding generation capacity because daily billing
339 demand will be measured based on the customer's maximum shaping demand
340 during the on-peak period, which, given RMP's definition of the on-peak period
341 (7 am – 11 pm M-F winter, 1 pm – 9 pm M-F summer) will always occur after the
342 sun has gone down. The upshot is that under the rate design proposed by RMP
343 for shaping power, many Schedule 32 customers would be doomed to receive
344 very little credit, if any, for avoiding RMP's generation demand charges, even
345 when the renewable resource the customer is importing provides reliable capacity
346 during much of the on-peak period. This result is largely an artifact of the
347 definition of the on-peak period and the definition of daily billing demand.

348 **Q. Do you believe this result is consistent with the requirements of the statute?**

349 A. Substantively no. As I discussed above, the statute requires that any
350 kilowatts of electricity delivered from the renewable energy facility that coincide
351 with the contract customer's monthly metered kilowatt demand measurement

352 must be excluded from the customer's utility bill. While RMP's approach may
353 technically comply with this requirement (because of the definition of billing
354 demand), as a practical matter, under RMP's proposal, many Schedule 32
355 customers will receive very little credit against their bills for the capacity they are
356 importing.

357 **Q. What is your proposed remedy for this problem?**

358 A. This problem can be remedied by making the daily demand charge more
359 granular, i.e., by converting it into an hourly demand charge (which I call the
360 "hourly on-peak shaping charge.") By doing so, the Schedule 32 customer would
361 receive a pro rata credit for the renewable energy capacity the customer imports
362 during the on-peak period.

363 **Q. Why is this approach reasonable?**

364 A. This approach is reasonable because it allows Schedule 32 customers to
365 receive credit for the capacity they are "bringing to the table" that is in direct
366 proportion to its availability during RMP's on-peak hours rather than having
367 recognition of this real capacity benefit negated through the artifacts of how daily
368 billing demand and the RMP on-peak period are defined.

369 To see this point, it may be useful to take a step back and look holistically
370 at what could be a prototypical Schedule 32 customer. In Figure 1 below I have
371 depicted a hypothetical Schedule 32 customer that is importing power from a
372 solar resource. The contract demand for the solar resource is assumed to be 5,000
373 kW. The shape of the generation output for the solar resource is adapted from

374 RMP's example output for a solar facility in June included in the Company's
375 workpapers in this case. The customer's overall peak demand is around 10,000
376 kW. Its assumed load factor during on-peak hours (Hours 13-21 in the diagram)
377 is 80%, which is typical for a Schedule 9 customer.

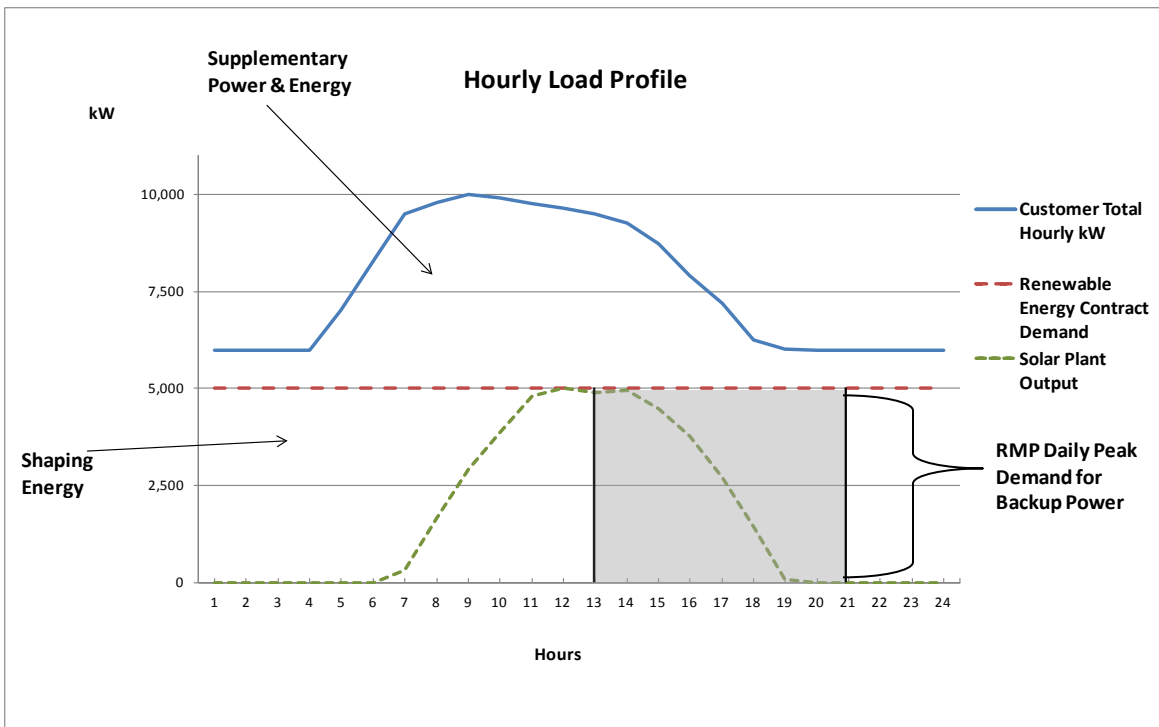
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Figure 1

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Load Profile for Hypothetical Schedule 32 Customer Importing Solar Power



381

382 The customer's supplementary energy requirement is the area between the
383 Customer Total Hourly kW curve and the Renewable Energy Contract Demand of
384 5,000 kW. The customer's shaping energy requirement is the area between the
385 Renewable Energy Contract Demand of 5,000 kW and the Solar Plant Output.

386 Under RMP's proposal, the customer's daily peak billing demand is the
387 maximum vertical distance between Renewable Energy Contract Demand of
388 5,000 kW and the Solar Plant Output. Because the solar plant's output reaches
389 zero prior to the end of the on-peak period, the daily peak billing demand is
390 always the maximum 5,000 kW, even though, as shown in Figure 1, the solar
391 plant provides a substantial amount of capacity during the on-peak period. My
392 recommended approach simply recognizes the value of this capacity on a pro-rata
393 basis.

394 Finally, there is a fundamental reasonableness test that should be applied
395 to the calculation of the hourly on-peak shaping charges, namely: do the charges
396 produce the same revenue as the customer's otherwise applicable rate schedule in
397 a month in which the renewable energy resource is unavailable for the entire
398 month? In the case of my proposal, the rates are designed to produce exactly this
399 result for the targeted load factors discussed in further detail below. Indeed, both
400 RMP's daily demand charge and my recommended hourly on-peak shaping
401 charge pass this test. The difference between the proposals is that my
402 recommended approach produces more reasonable results when the renewable
403 resource is operating as anticipated and the customer must purchase shaping
404 power on a regular basis.

405 **Q. Under your proposal would Schedule 32 customers also pay the backup**
406 **energy charges proposed by RMP for shaping power in addition to the**
407 **hourly on-peak shaping charges?**

408 A. Yes. My recommended hourly on-peak shaping charge is a substitute for
409 the backup *power* charges proposed by RMP. The backup *energy* charges
410 proposed by RMP would still apply (although they are more accurately
411 characterized as “shaping energy charges”).

412 **Q. What load parameters did you use in calculating your recommended hourly**
413 **shaping charge for transmission voltage customers?**

414 A. My recommended hourly shaping charge is equal to the monthly
415 generation demand charge that a Schedule 9 customer would pay at a 90.26% on-
416 peak load factor in the summer and an 89.69% on-peak load factor in the non-
417 summer period, divided by the number of monthly on-peak hours in the summer
418 and non-summer period, respectively. This calculation is limited to the
419 generation portion of the demand charge because the Schedule 32 customer would
420 already be fully compensating RMP for delivery services for its renewable energy
421 contract demand (transmission and generation) through the delivery facilities
422 charges. This calculation is shown in UAE Exhibit 1.2, page 1.

423 **Q. Why do you use a 90.26% summer on-peak load factor for this calculation?**

424 A. Please refer back to Figure 1. The portion of the customer’s load that is
425 relevant for this calculation is the shaded area in this diagram. The shaded area
426 corresponds to the hours and customer load that are potentially subject to the
427 backup power charge. In this example, it is the 5,000 kW of Renewable Energy
428 Contract Demand during Hours 13 through 21. It is important to note that for
429 many Schedule 32 customers, this shaded area is likely to correspond to a very

430 high load factor, particularly to the extent that the customer contracts for
431 renewable energy for only a portion of its overall peak demand (as seems likely).
432 In the example, the load factor depicted in the shaded area corresponds to a load
433 factor of 100% because the customer is assumed to always be consuming at least
434 5,000 kW of power during on-peak hours.

435 For purposes of calculating the hourly shaping charge, I selected a load
436 factor that was midway between the theoretical maximum of 100% and the
437 average monthly load factor during on-peak hours, which, on average, is the
438 logical minimum load factor for the shaded area. Based on data provided in
439 RMP's most recent general rate case, I calculate that the average monthly load
440 factor during on-peak hours for a Schedule 9 customer is 80.52% during summer
441 months and 79.38% during non-summer months. These calculations are shown in
442 UAE Exhibit 1.2, page 3.

443 **Q. What load parameters did you use in calculating your recommended hourly**
444 **shaping charge for primary and secondary voltage customers?**

445 A. Using the same methodology I described above for Schedule 9, I
446 calculated the hourly shaping charge for primary and secondary voltage using a
447 Schedule 8 on-peak load factor of 86.55% in summer months and 83.50% during
448 non-summer months. This calculation is shown in UAE Exhibit 1.2, pages 2-3.

449 **Q. Earlier in your testimony you recommended that the Commission not adopt**
450 **RMP's proposed generation backup facilities charges. Does elimination of**

451 **this charge impact the calculation of RMP's daily demand charge (i.e.,**
452 **backup power charge) or your recommended hourly shaping charge?**

453 A. Yes. If the generation backup facilities charges are adopted as proposed
454 by RMP, then these charges must be a credit against either RMP's daily demand
455 charge (i.e., backup power charge) or my recommended hourly shaping charge.
456 RMP has already included this credit in the calculation of its daily demand
457 charge, so if the generation backup facilities charges are eliminated, but the daily
458 demand charge retained, then the daily demand charge rate would need to be
459 increased to reflect removal of this credit. Alternatively, if the generation backup
460 facilities charges are not eliminated, but the hourly shaping charge I am
461 recommending is adopted, then the hourly shaping charges I am proposing here
462 would need to be reduced to reflect the appropriate credit from the generation
463 backup facilities demand charge.

464

465 **SUMMARY OF RECOMMENDED SCHEDULE 32 RATES**

466 **Q. Can you please provide a summary of your recommended Schedule 32 rates?**

467 A. Yes, my recommended Schedule 32 Step 1 rates are shown in Table 1
468 below. My recommendation for Step 2 rates is to increase these rates by 1.47%
469 for transmission voltage and 1.03% for primary and secondary voltage to comport
470 with the size of the Step 2 increase approved by the Commission in the recent
471 general rate case.

472

473
 474

Table 1
UAE Recommended Schedule 32 Charges

475
 476

Step 1 Rates

477
 478

Customer Charge

See testimony

479
 480

Administrative Charge

See testimony

481
 482

Delivery Facilities Charge

Secondary Voltage

\$7.82/kW-mo.

483
 484

Primary Voltage

\$6.68/kW-mo.

Transmission Voltage

\$3.79/kW-mo.

485
 486

Hourly On-Peak Shaping Charge

487
 488

Secondary Voltage

Summer

8.3724¢/kWh

Non-Summer

2.8216¢/kWh

489
 490

Primary Voltage

491
 492

Summer

8.3724¢/kWh

Non-Summer

2.8216¢/kWh

493
 494

Transmission Voltage

Summer

7.9371¢/kWh

Non-Summer

2.5444¢/kWh

495
 496

Shaping Energy Charge

Sch. 6, 8, 9

497
 498

Supplementary Power and Energy

Sch. 6, 8, 9

498

Q. Does this conclude your direct testimony?

499

A. Yes, it does.