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Introduction

Q: Please state your name and occupation.

A: My name is Robert A. Davis. I am employed by the Division of Public Utilities (Division) at the Utah Department of Commerce as a Utility Analyst in the Energy Section.

Q: What is your business address?

A: My business address is 160 East 300 South, Heber Wells Building - 4th Floor, Salt Lake City, Utah, 84111.

Q: On whose behalf are you testifying?

A: The Division.

Q: Please summarize your educational and professional experience.

A: I received a Master’s in Business Administration with Master’s Certificates in Finance and Economics from Westminster College in May of 2005. I am a Certified Valuation Analyst (CVA) by the National Association of Certified Valuators and Analysts (NACVA). I have been employed by the Division since May of 2012 where I have worked on various telecommunications and energy related assignments such as general rate cases, tariff adjustment requests, action requests from the Commission and other assignments where auditing, financial and economic analysis is needed.

21 Prior to my present position, I was employed for seven years at the Utah State Tax
22 Commission in the Centrally Assessed Property Tax Division-Utilities Section where I
23 valued telecommunication, energy and airline companies for property tax purposes.

24 Prior to working for the Property Tax Division, I was employed as an Electronic
25 Engineering Technician at Fairchild Semiconductor.

26

27 **Q: Have you testified before the Commission on prior occasions?**

28 **A:** Yes I have.

29

30 **Purpose and Summary of Testimony**

31 **Q: What is the purpose of your testimony in this proceeding?**

32 **A:** My testimony offers a brief overview of the Sustainable Transportation Energy Program
33 (STEP) and presents the Division’s analysis and findings in response to Rocky Mountain
34 Power’s (Company) Application to Implement the Various Programs within the STEP.

35 The STEP consists of many different programs, and my testimony specifically addresses
36 the programs identified in the Public Service Commission’s Phase One Scheduling Order
37 in this docket.¹ In particular, my testimony addresses the Company’s request to
38 implement the following programs:

39 1. Establish a line item charge on customer bills for the funding of the STEP Program.

¹ Phase One Scheduling Order, Notice of Second Scheduling Conference, Notice of Phase One Technical Conferences and Notice of Phase One Hearing, September 26, 2016.

40 This category includes establishing a regulatory liability account to depreciate
41 thermal generation plant, revising tariff Schedules 193 and 195, revising the Utah
42 Solar Incentive Program (USIP) Schedule 107 and approving implementation of the
43 Company's Electric Vehicle (EV) infrastructure incentive program.² Mr. David
44 Thomson, the Division's second witness, will testify on the Company's proposed
45 changes to Schedules 193 and 195.

- 46 2. Approval of the Solar and Storage Program;
47 3. Approval of the Gadsby Emission Curtailment Program; and
48 4. Approval of the Clean Coal Technology program for NOx reduction using Neural
49 Networks and Advanced Selective Catalytic Reduction (SCR) applications.³

50

51 **Background**

52 **Q: Please provide a brief history of the STEP Program that will be addressed in this**
53 **proceeding.**

54 **A:** Senate Bill 115 (SB 115), the Sustainable Transportation and Energy Plan Act, was
55 passed during Utah's 2016 legislative session. SB 115 was codified in part at Utah Code
56 Ann. Section 54-7-12.8.⁴ That section is now entitled, "**Electric energy efficiency,**

² The EV Program will be fully implemented during Phase II or III of this docket. The tariff is to be implemented by July 1, 2017. The initial step of the EV Program during Phase I is necessary so the Company can begin collecting the necessary funding January 1, 2017 to get the pilot program started.

³ Phase One Scheduling Order, Notice of Second Scheduling Conference, Notice of Phase One Technical Conferences and Notice of Phase One Hearing, September 26, 2016.

⁴ SB 115 was codified, in part, at Utah Code Ann. Section 54-7-12.8.

57 **sustainable transportation and energy, and conservation tariff.”** Section 54-7-12.8(6)

58 outlines the funding for the STEP Program:

59 (a) During the pilot program period, of the funds a large-scale electric utility
60 collects via the line item charge described in Subsection (3)⁵, the
61 commission **shall authorize** (emphasis added) the large-scale electric utility
62 to allocate on an annual basis:

- 63 (i) \$10,000,000 to the sustainable transportation and energy plan; and
64 (ii) the funds not allocated to the sustainable transportation and
65 energy plan to demand side management.

66 (b) The commission **shall authorize** (emphasis added) a large-scale electric
67 utility to **spend up to** (emphasis added):

- 68 (i) \$2,000,000 annually for the electric vehicle incentive program
69 described in Section 54-20-103; and
70 (ii) An annual average of:
71 (A) \$1,000,000 for the clean coal technology program described in
72 Section 54-20-104; and
73 (B) \$3,400,000 for the innovative utility programs described in Section
74 54-20-105.

75 (c) The commission **shall authorize** (emphasis added) a large-scale electric
76 utility to recoup the large-scale electric utility’s unrecovered costs paid
77 through the Utah solar incentive program from the funds allocated under
78 Subsection (6)(a)(i).

79 (d) The Commission **may authorize** (emphasis added) a large-scale electric
80 utility to allocate funds the large-scale electric utility collects via the line
81 item charge described in Subsection (3) not spent under Subsection (6) to a
82 conservation, efficiency, or new technology program if the conservation,
83 efficiency, or new technology program is cost-effective and in the public
84 interest.

85 **Q: Does the STEP program appear to be a comprehensive research and development**

⁵ http://www.le.utah.gov/xcode/Title54/Chapter7/54-7-S12.8.html?v=C54-7-S12.8_2016051020160510 last accessed 10/19/2016. Specifically, see §54-7-12.8(3).

86 **(R&D) program?**

87 **A:** Yes. With the exception of the Gadsby Curtailment Program and the Electric Vehicle
88 Incentive Program which are required by SB 115, the Clean Coal Technology and
89 Innovative Utility Programs are largely by definition R&D.⁶

90

91 **Q: To your knowledge, has the Commission approved recovery of R&D expenses through**
92 **rates in the past?**

93 **A:** Other than a Commission authorized \$625,000 storage project⁷ in 2011 which the
94 Division and other stakeholders supported, I am unaware of any other Commission
95 approved R&D program. The STEP Program, as mandated by SB 115, would be a change
96 to the Commission's prior practices.

97

98 **Q: Are you aware of additional Operating, Maintenance, Administrative and General**
99 **(OMAG) expenses that will be recovered outside of the STEP Program through**
100 **customer rates?**

101 **A:** Yes. The Company's application and accompanying exhibits outline the Clean Coal
102 Technology and Innovative programs. However, those expenses have not been fully
103 quantified by the Company as they are not fully known at this time. It is assumed that

⁶ Studies and tests that are done in order to design new or improved products. <http://www.merriam-webster.com/dictionary/research%20and%20development>.

⁷ See Report and Order, In the Matter of the Application of Rocky Mountain Power for a Deferred Accounting Order to Defer the Costs of an Energy Storage Demonstration Project and Recovery of those Costs Through the Demand-Side Management Surcharge (Schedule 193), 11-035-140, November 22, 2011. The Commission approved an initial expenditure of approximately \$50,000 on monitoring activities and interfacing with project developers; the balance, \$575,000, would only be spent if the project was determined to be cost effective.

104 the Company will seek recovery for these additional OMAG expenses in the next general
105 rate case.

106 **Q: Would you recommend that the Commission require the Company to identify the**
107 **OMAG expenses by the various programs in its records as part of the reporting**
108 **requirement of the STEP Program?**

109 **A:** Yes. Utah Code Ann. Sections 54-20-104 and 54-20-105 implementing the STEP statute
110 authorize the Commission to review the expenditures made by the Company for the
111 proposed programs.⁸ Those expenditures that are not funded by the STEP Program
112 through the line item charge on customer bills need to be reviewed annually or in the
113 next general rate case.

114

115 **Line Item Charge on Customer Bill and USIP Sch 107 Revision**

116 **Q: Will your testimony offer the Division’s comments regarding the accounting treatment**
117 **as proposed by the Company to fund the STEP Program?**

118 **A:** No. As I previously mentioned, Division witness Mr. David Thomson will present the
119 Division’s recommendations on the accounting treatment and reporting as proposed by
120 the Company and promulgated by Utah Code Ann. Section §54-7-12.8.

121

122 **Q: What changes are required to the Utah Solar Incentive Program (USIP) to comply with**
123 **SB 115?**

124 **A:** As implemented by Utah Code Ann. Section §54-7-12.8(4), SB 115 ends the USIP

⁸ See http://www.le.utah.gov/xcode/Title54/Chapter20/54-20.html?v=C54-20_2016051020160510.

125 program effective December 31, 2016 USIP.⁹ In its application in this docket, the
126 Company indicates it will no longer take applications for the USIP program after this
127 date and requests that tariff Schedule 107 be revised to reflect the change. The
128 Company indicates that the tariff will remain in effect for existing customers until the
129 incentives have been disbursed. The current USIP rates currently added to the energy
130 portion of customer bills will be eliminated. Schedules 195 and 193 will be combined to
131 collect funds for the STEP Program including any remaining USIP account balances and
132 DSM under the Company's proposal.

133

134

Electric Vehicle Incentive Program

135 **Q: Why are you offering testimony about the EV Incentive in this phase of the proceeding**
136 **when you have already indicated it will be part of Phase II or III¹⁰?**

137 **A:** The Company requests that it be allowed to begin collecting the annual \$2,000,000
138 funding January 1, 2017. In this phase of the proceeding, the Company is asking only for
139 approval to start allocating funds from the line item charge on customer bills. The tariff
140 and implementation of the program need to be in place by July 1, 2017.¹¹ Further
141 testimony on the EV Incentive and other program details will be included in the second
142 or third phase of this proceeding.

⁹ See http://www.le.utah.gov/xcode/Title54/Chapter7/54-7-S12.8.html?v=C54-7-S12.8_2016051020160510.

¹⁰ Phase Two Scheduling Order, Notice of Phase Two Technical Conferences and Notice of Phase Two Hearing, October 21, 2016, pp. 1-2.

¹¹ See http://www.le.utah.gov/xcode/Title54/Chapter20/54-20-S103.html?v=C54-20-S103_2016051020160510.

143 **Q: Should the Company be allowed to collect funds for the EV Program if the tariff and**
144 **program do not have to be (and will not be) in place before July 2017?**

145 **A:** Yes. The Division recommends that the Company be allowed to collect the funds for the
146 EV Program beginning January 1, 2017. The statute specifically allows the Company to
147 spend up to \$2,000,000 on an EV program. Assuming Commission approval, the line
148 item surcharge, Schedule 195, will be effective January 1, 2017. Approving the EV
149 program costs at this point will alleviate the necessity of the Company filing and
150 requesting approval of an increase in the surcharge to collect the EV funds at a later
151 date. The Division also notes that even though the Company sought approval of an EV
152 program in its initial filing, the application contained only a pro forma tariff and few
153 program details. The schedule approved by the Commission in this docket, reflects the
154 Division's, as well as other parties, concerns that developing every aspect of the EV
155 Program, as well as other STEP programs, prior to January 1, 2017 would be difficult.

156

157 **Q: Has the Division participated in technical workshops and workgroups to discuss the**
158 **aspects of the EV Incentive Program?**

159 **A:** Yes. There have been several open forum workshops beginning in May of 2016 covering
160 topics such as different charging infrastructure, time of use rate design (TOU) and other
161 considerations to ensure the program is in the public interest.

162 **Q: Would you recommend that the Commission authorize the Company to start**
163 **allocating funds from the line item charge on customer bills towards the**
164 **implementation of the EV Program beginning January 1, 2017?**

165 **A:** Yes. The Company needs to start collecting funds to get the program started.

166

167

Solar and Storage Program

168 **Q:** Please provide a brief description of the proposed Solar and Storage Program.

169 **A:** During summer periods of high demand, the Company typically experiences voltage

170 drops on some of its transmission lines. The Company is proposing to correct one

171 voltage issue in central Utah with a stationary battery storage system in conjunction

172 with a solar facility both of which will be connected to the distribution system. Without

173 the Solar and Storage project, the Company projects that with current load growth the

174 transmission line will be insufficient in capacity in the near future to maintain minimum

175 voltage. The result would otherwise likely be a required upgrade to a higher capacity

176 transmission line.

177

178 The Company believes a stationary battery storage system along with a solar facility will

179 reduce the demand load on the power transformer during certain high load hours, and

180 thus improve voltage conditions and mitigate costs. The project will also provide the

181 Company with experience with new technology. The Company evaluated alternative

182 solutions to the transmission voltage drops including a battery/storage facility, a

183 standalone battery storage, rebuilding the transmission line, and building a new

184 transmission substation.

185

186 According to the Company, the analysis shows the battery storage/solar facility is the
187 least total cost solution on a system basis and will provide the Company with needed
188 R&D in energy storage systems. The Company is requesting \$5.05 million in STEP
189 funding for the battery storage system and \$1.95 million from the Blue Sky community
190 funds for the solar facility.

191

192 **Q: Are you concerned this program may have implications regarding Multi-State Protocol**
193 **(MSP) allocations?**

194 **A:** Yes. In addition to the R&D benefits the Company will acquire, this project is being
195 developed to forego the expense of re-conducting the transmission line that feeds the
196 selected distribution system or upgrade the [REDACTED] transmission substation.
197 Generally, transmission level projects would fall under the 2017 Protocol and be system
198 allocated. In this case, however, the Company is asking that the project costs be situs
199 assigned to Utah.

200

201 **Q: Does the 2017 Protocol address situs assignment of projects that potentially provide**
202 **system benefits?**

203 **A:** Yes. Section 4 of the 2017 Protocol specifies situs assignment of state mandated
204 projects. Oregon's Black Cap Solar¹² project is one example of a state mandated

¹²See Docket 14-035-31, AFR 15 (conf), subtitle Black Cap Solar Facility. [REDACTED]

205 program. These projects may contribute to the displacement or deferral of needed
206 system resources or upgrades even though the costs are situs assigned to the state
207 initiating them. Similarly, distribution projects or upgrades may alleviate or defer the
208 need for certain transmission upgrades as the Company anticipates with this solar and
209 storage project. The difference between this solar and storage project and other state
210 mandated or distribution projects is that the Company specifies that the intent of the
211 Solar and Storage project is to relieve a system transmission issue. I am not aware of any
212 such prior claim or demonstration of system benefits for other projects such as Oregon's
213 Black Cap Solar project.

214

215 **Q: If the Solar and Storage Program were to fall within MSP allocation protocols, do you**
216 **believe the requested \$7,000,000 funding for the program will offer a better Net**
217 **Present Value (NPV) compared to the other alternatives and remain in the public**
218 **interest?**

219 **A:** No. Based on the information provided by the Company in its application,¹³ any of the
220 alternative options falling under the MSP protocol would provide a lower NPV than the
221 recommended solution on an allocated basis. For example, the Solar and Storage
222 project with situs treatment is more than twice the allocated cost, assuming a 43
223 percent System Generation (SG) factor, of re-conducting the transmission line.

224

¹³ See Company's Application, Confidential Exhibit D, at pages 4-5 and 12. Note: the top and bottom alternative solutions in the table at the top of page 12 are reversed as clarified by DPU DR 5.1.

225 **Q: Is there the potential for OMAG expenses to be incurred to customers that are not**
226 **part of the STEP funding through this program?**

227 **A:** Yes. The Company has assured stakeholders during technical conferences that it will
228 design its Request for Information (RFI) and Request for Proposal (RFP) process to
229 address many of the OMAG expenses that occur during the pilot and beyond for both
230 the solar and battery storage. However, during the technical conference, the Company
231 mentioned that there may be additional expenses that will eventually be borne by
232 customers.¹⁴

233

234 **Q: Has the Company provided an explanation of the accounting treatment for the Solar**
235 **and Storage project?**

236 **A:** Other than assigning the total cost of the project to Utah, the Company does not
237 provide accounting detail for the project. Specifically, the Company does not explain
238 how the benefits of the project will be captured for Utah's retail ratepayers.

239

240 **Q: Does the Division have a recommendation in this regard?**

241 **A:** Yes. The Division recommends that Utah be credited the market value for the combined
242 total output of the Solar and Storage project through the EBA.

243

244 There are at least two categories of benefits arising from this project: (1) the combined

¹⁴Id. See OMAG in table at top of page 12.

245 generation output value of the project, and (2) the deferral of the otherwise necessary
246 transmission upgrades. The Division’s recommendation to credit Utah for the
247 production value through the EBA may not completely capture the deferral value from
248 the project. Therefore, the Division recommends that future allocations of costs to
249 upgrade the identified transmission line or substation be reviewed in light of the current
250 accounting treatment of the Solar and Storage project approved by the Commission.
251 Credit against future upgrade expenses may be warranted in cases where those
252 investments enter rates.

253

254 **Q: Will you explain how the Division’s EBA credit would work?**

255 **A:** The Solar and Storage project is designed to alleviate or curtail the peak loading on the
256 identified transmission line and substation. The high load hour or peak market value of
257 the combined generation for the project would be credited against Utah’s allocated
258 share of the system net power costs through the EBA. The Division also recommends
259 that the Company call out this credit in any future EBA or other net power cost filing.

260

261 As long as the production benefits can be captured for Utah in this or a similar manner,
262 and as long as interested parties are able to review any future costs of re-conducting the
263 transmission line and substation, the Division recommends approval of the Solar and
264 Storage Program.

265

266

Gadsby Emission Curtailment

267 **Q: What is your understanding of the Gadsby Emission Curtailment Program?**

268 **A:** The Company is proposing to curtail Gadsby Units 1, 2 and 3 only when the Division of
269 Air Quality (DAQ) notifies the Company of a pending “RED” alert within a 48 hour period
270 during the winter months. Units 1, 2 and 3 are primarily used for peaking and reserves.
271 When the DAQ expects the air quality particular matter (PM2.5) to reach 25 µg/m³, the
272 Company will curtail these units as long as there are no system emergencies or
273 reliability issues.

274

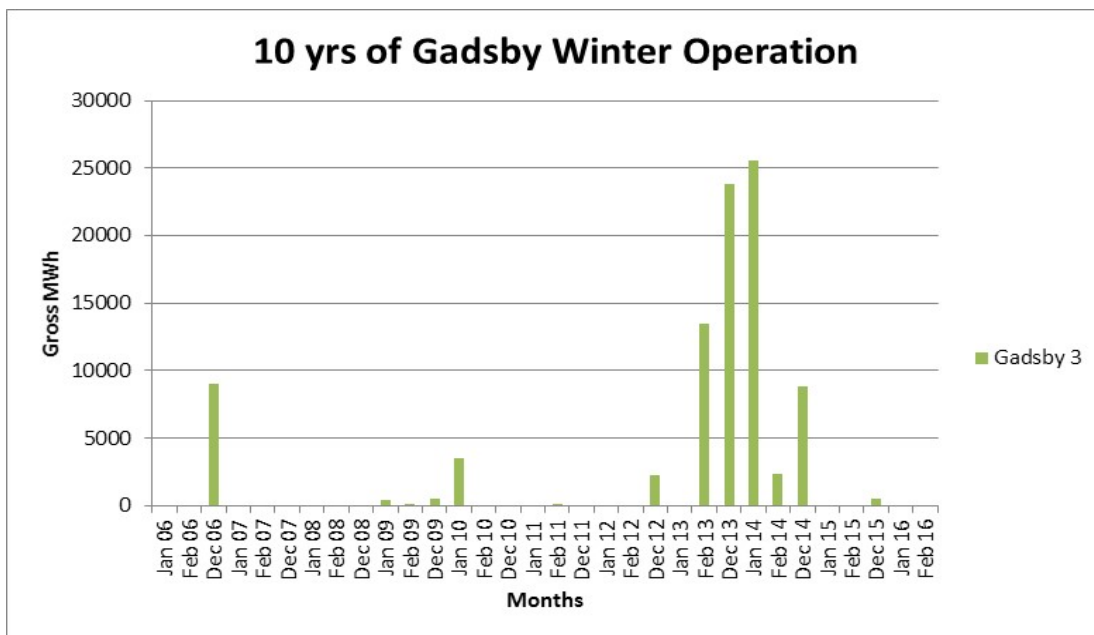
275 **Q: What if the cost to purchase replacement power for the curtailment from the market**
276 **is greater than the balance remaining in the curtailment fund during the program?**

277 **A:** The program is designed to use STEP funds to purchase power from the market in the
278 event that the Gadsby units are curtailed. The Company will properly record in its
279 accounts the difference between those remaining funds from the STEP allocation to
280 normal accounting treatments as if the STEP program was not in place. If not, this could
281 lead to allocated cost mismatch problems with the Energy Balancing Account (EBA)
282 during the pilot.

283

284 **Q: What is your understanding of what the Company will do with the balance of the**
285 **\$500,000 in the event that Gadsby is not curtailed much during the five-year pilot**
286 **program?**

287 **A:** The following graph¹⁵ shows that the Company has operated units 1, 2 and 3 only
288 minimally during the December 2013 and January 2014 periods since 2006. Although
289 the future cannot be forecasted with certainty, historically, there may be no need to
290 operate these units for reserve or reliability during the winter months. Given this
291 outlook, it is unclear if the Company will need to use all the funds allocated to the
292 Gadsby Curtailment Program. Utah Code Ann. Section §54-7-12.8(6)(a)(ii), requires the
293 part of SB 115 that unallocated STEP funds to go to demand side management.



294
295 **Q:** Is there a tracking or reporting mechanism that the Company will provide to enable
296 stakeholders to monitor the Gadsby Curtailment Program?

297 **A:** Yes. The Company has created accounting codes so that stakeholders can verify the
298 expenses of the program and compare them to those presented in future EBA filings

¹⁵ See Company Application, Exhibit E, September 12, 2016, p. 5.

299 during the pilot program.¹⁶ Section 7 of the Company's Exhibit E further explains the
300 accounting treatment. I will not restate what the Company has already stated.

301 **Q: Would you recommend approval of the Gadsby Curtailment Program based on what**
302 **you have said in your testimony?**

303 **A:** Yes. The air quality in and around Salt Lake City is degrading every year. This program is
304 just one of many programs that can be implemented to mitigate the degradation of air
305 quality in the containment area.

306

307 **Clean Coal Technology Program**

308 **Q: What is the legislative mandate related to the Clean Coal Technology Program?**

309 **A:** The clean coal program is based upon Utah Code Ann. Section §54-20-104. This section
310 of the Utah Code states:

311 (1) Subject to Subsection (2), the commission shall authorize, before July 1, 2017,
312 and, subject to funding, approve a program that authorizes a large-scale electric
313 utility to investigate, analyze, and research clean coal technology.

314 (2) The commission may review the expenditures made by a large-scale electric
315 utility for a program described in Subsection (1) in order to determine if the
316 large-scale electric utility made the expenditures prudently in accordance with
317 the purposes of the program.¹⁷

318 Funding for this program is to be an average of \$1 million per year for five years, or a
319 total of \$5 million.¹⁸ As outlined in Exhibit B, "Clean Coal Technology Program," of

¹⁶ Supplemental Testimony of Steven R. McDougal, p. 8 and "Utah STEP Pilot Program Instructions," p. 2.

¹⁷ http://www.le.utah.gov/xcode/Title54/Chapter20/54-20-S104.html?v=C54-20-S104_2016051020160510 last accessed 10/19/2016.

¹⁸ http://www.le.utah.gov/xcode/Title54/Chapter7/54-7-S12.8.html?v=C54-7-S12.8_2016051020160510 last

320 Company witness Mr. K. Ian Andrews' direct testimony, the Company is proposing the
321 following seven types of clean coal studies or projects:¹⁹

- 322 (1) Woody Waste Co-Fire
- 323 (2) Emerging CO₂ Capture
- 324 (3) Sequestration Site Characterization – Phase I
- 325 (4) CO₂ Enhanced Coal Bed Methane Recovery
- 326 (5) Solar Thermal Assessment
- 327 (6) NO_x Neural Net Implementation
- 328 (7) Advanced NO_x Control

329 My testimony in this phase of the proceeding will only address the NO_x Neural Net and
330 Advanced NO_x Control Programs. The remaining Clean Coal Technology CO₂ Programs
331 will be addressed in Phase II of this proceeding.

332

333 **Utility Scale Demonstration of Alternative NO_x Emissions Control Technologies**²⁰

334 **Q: Please summarize the Company's proposal for the NO_x technology.**

335 **A:** The Company intends to first issue RFIs followed by RFPs to determine exactly what
336 project or projects and associated vendors the Company intends to investigate or use.
337 The Company is budgeting \$1.4 million for low NO_x technology research. The Company
338 hopes to issue the RFI in May 2017 and the RFPs by the end of July 2017. The project or
339 projects selected would begin in the first quarter of 2018. It is anticipated that the
340 research would last approximately one year with the final report issued in the first

accessed 10/19/2016. Specifically, see Utah Code Ann. Section 54-7-12.8(6)(b)(ii)(A).

¹⁹ Direct Testimony of K. Ian Andrews, September 12, 2016, lines 43-59, and Exhibit B, Table 1, pp. 3-4.

²⁰ Id. pp. 13-14.

341 quarter of 2019.²¹ Pursuant to SB 115, the Company needs to begin collecting the
342 funding by January 1, 2017 to begin the RFI and RFP process.

343

344 **Q: Does the Company already have some idea about what it expects to receive proposals**
345 **on?**

346 **A:** Yes. The Company has had discussions with some potential vendors and with its
347 advisory team. The Company's Application, Exhibit B, briefly outlines projects the
348 Company is already looking into including "Advanced Neural Network" and "Advanced
349 Combustion Controls, Selective Non-Catalytic Reduction (SNCR) systems (both with and
350 without chemical enhancers such as hydrogen peroxide), ozone injection and
351 catalytically treated fabric filter bags."²² There was further discussion of these topics at
352 the October 18, 2016 technical conference. The Company is open to other potential
353 projects based upon the results of its RFI. However, the Company insisted at the
354 technical conference that it remains to be determined (in mid-2017) how the \$1.4
355 million budgeted for this area of research will be spent.

356

357 **Q: Will you please describe the Company's proposed advanced neural network controls**
358 **program?**

359 **A:** Yes. This program is one of the two Clean Coal Technology programs that is specifically

²¹ Id., Appendixes G and H (sub).

²² Id. at p. 14.

360 targeted at reducing nitrous oxide (NOx) emissions.²³ The neural net controls project is
361 a demonstration project that involves installing and evaluating a third-party neural
362 optimization software application to install, demonstrate and research artificial
363 intelligence technologies that have the capability of optimizing plant settings, resulting
364 in heat rate improvements and NOx emission reductions with the use of sensors and
365 software. The Company has budgeted \$1,007,490 for this project,²⁴ the majority of
366 which is for the sensor and software licensing fees in the first year of the pilot (2017).
367 The Company intends to initially perform the analytics on Huntington Unit 2, but plans
368 to conduct a similar optimization at a second unit at the Huntington generating facility
369 during the five-year pilot program.

370

371 **Q: What is the Division’s view of the advanced neural network portion of the Clean Coal**
372 **proposals?**

373 **A:** If the plant efficiencies and NOx emissions reductions can be obtained at the relatively
374 low capital cost of the sensors and software, the neural network optimization
375 potentially has merit. The technology looks promising and may lead to its use on other
376 thermal generation plants. The research team appear to have experience in neural
377 networks and process optimization resulting in an increased likelihood of the project’s

²³ Clean Coal Technology Program, Clean Coal Research Team, p. 4.

²⁴ Id. at p. 15.

378 success.²⁵ There are opportunities to improve the technology by applying dynamic
379 optimization to account for fast ramping of the plant, which could lead to solutions to
380 the problem of intermittent renewable resources on the grid. The Company has
381 provided examples of studies that have been done in this area with much success.²⁶
382 However, the research poses challenges that may include sudden shifts in operating
383 conditions, extreme ramping or the loss of sensors, which means the model needs to
384 continuously be updated and makes real time optimization problematic.

385

386 **Q: Is this program consistent with STEP?**

387 **A:** Yes. The neural net software application at Huntington 2 comports with Utah Code Ann.
388 Section 54-20-104, which authorizes the Commission, subject to funding, to “approve a
389 program that authorizes a large-scale utility to investigate, analyze, and research clean
390 coal technology” as part of the broader Clean Coal Technology Program that was passed
391 as part of SB 115.

392

393 **Q: What is the Division’s view of the low NOx part of the Clean Coal proposals?**

394 **A:** While the Division lacks technical expertise to deeply evaluate the feasibilities of the
395 ideas the Company is considering, at a high level the Division believes that low NOx

²⁵ Id. at pp. 11-12.

²⁶ Application, Exhibit B, Appendix F, Advanced Neural Net Controls, University of Utah, June 17, 2016, page 4 and 13.

396 research as outlined by the Company has merit. Therefore, the Division recommends
397 that the Commission allow the Company to proceed with its RFI and RFP process for this
398 part of the Clean Coal Technology Program.

399

400 **Q: Does the Division intend to monitor the process and progress of the low NOx**
401 **initiatives?**

402 **A:** Yes. In addition to reviewing any proposals and reports that the Company receives or
403 produces with respect to this initiative, the Division intends to have periodic workshops
404 with the Company to review the progress of this initiative, review any additional OMAG
405 expenses in addition to the STEP funding and discuss any concerns with the Company
406 and, perhaps, its vendors.

407

408 **Tariff Schedule 107**

409 **Q: Did the Company provide proposed Tariff Sheet revisions as part of its application?**

410 **A:** Yes. It provided proposed Tariff sheet revisions for Sheet Nos. 107.1, 107.3, 107.4,
411 193.2, 195.1 and 195.2.

412

413 **Q: Were these revisions reviewed by the Division?**

414 **A:** The tariff sheets were reviewed by the Division. My testimony covers the revisions to
415 tariff sheets 107.1, 107.3 and 107.4. Mr. David Thomson's testimony will address the
416 revisions to tariff sheets 193.2, 195.1 and 195.2.

417 **Q: What was the result of the Division’s review of those sheets?**

418 **A:** The Division sent a data request²⁷ to the Company inquiring about a possible error on
419 sheet 107.4, Table 2 “Available Capacity” The line for 2017 apparently was not deleted
420 as in Table 1. The Company’s response to the Division’s request is that the line should
421 have been deleted. The Company indicated that it will refile tariff sheet 107.4.

422
423 It appears to the Division that the sheet revisions mentioned previously and in other
424 testimony support the Company’s application implementing the programs authorized by
425 STEP pursuant to Utah Code Annotated Sections 54-7-12.8(3)(b) and (8).

426
427 **Q: Does the Division have any other concerns with respect to STEP funds, specifically**
428 **allocation of costs and benefits, tracking and monitoring and auditing concerns?**

429 **A:** As Mr. Thomson will further address, the Division is concerned about the reporting of
430 these programs, the accounting of the STEP program and the additional OMAG
431 expenses that will be borne by both Utah and system customers.

432
433 Although this phase and testimony of the proceeding covers only certain programs as
434 previously explained, the Division has reservations with the approval of the STEP Pilot
435 Program as previously explained. Progress reporting of the STEP programs should be on
436 an annual basis. The accounting, including external OMAG expenses, should be

²⁷ DPU data request 3.4 to the Company.

437 transparent and easily trackable. In addition to all the other programs the Company
438 currently has (e.g., Energy Balancing Account, Renewable Balancing Account, Demand
439 Side Management, and Net-Metering, for example), the STEP program will require
440 another level of review by stakeholders.

441

442 **Q: Given your testimony in this phase of the proceeding, does the Division recommend**
443 **that the Commission authorize the Company to collect the full annual \$10,000,000**
444 **from Utah ratepayers to fund this program?**

445 **A:** Yes. The \$500,000 Gadsby Curtailment and the \$2,000,000 annual EV Program is
446 required by SB 115. The Division supports the Clean Coal NOx Technology and
447 Innovative Utility Solar and Battery programs. Although these programs are by
448 definition R&D projects and generally not recovered through rates, they will benefit all
449 customers on the Company's system including those in Utah. Therefore, the funding for
450 these programs should be approved.

451

452 **Conclusions and Recommendations**

453 **Q: Please summarize the Division's conclusions and recommendations.**

454 **A:** The Division has reviewed the Company's Application for implementation of the various
455 STEP programs and categories of programs as contained in the Commission's Phase One
456 Order in this docket. The Division believes the Company should be granted approval of
457 its Application, with the exceptions noted above with respect to accounting treatment

458 and reporting. As stated previously, the Division recommends that the Company be held
459 accountable to report its progress and actual expenditures on these programs, and the
460 Division will audit and track the STEP initiatives.

461
462 The Division recommends the Commission approve the Company's Application and
463 allow it to implement the programs discussed above. The Division recommends this
464 approval be conditional upon the accounting treatment and reporting requirements as
465 previously stated. Specifically, the Division recommends:

- 466 1. Establishing a line item charge on customer bills for the funding of the STEP
467 Program. This category includes establishing a regulatory liability account to
468 depreciate thermal generation plant, revising tariff Schedules 193 and 195, revising
469 the Utah Solar Incentive Program (USIP) Schedule 107 and approving
470 implementation of the Company's Electric Vehicle (EV) infrastructure incentive
471 program;
- 472 2. Approval of the Solar and Storage Program;
- 473 3. Approval of the Gadsby Emission Curtailment Program; and
- 474 4. Approval of the Clean Coal Technology program for NOx reduction using Neural
475 Networks and Advanced Selective Catalytic Reduction (SCR) applications.

476

477 **Q: Does this conclude your direct testimony?**

478 **A:** Yes it does.