BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

	)	
	)	**DOCKET NO. 13-057-05**
IN THE MATTER OF THE	)	
APPLICATION OF QUESTAR GAS	)	**DPU Exhibit 1.0 DIR**
COMPANY TO INCREASE	)	
DISTRIBUTION RATES AND	)	
CHARGES AND MAKE TARIFF	)	**Testimony**
MODIFICATIONS	)	**Douglas D. Wheelwright**
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FOR THE DIVISION OF PUBLIC UTILITIES
DEPARTMENT OF COMMERCE
STATE OF UTAH

Testimony of

Douglas D. Wheelwright

October 30, 2013

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1 **I. INTRODUCTION AND SUMMARY**

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

3 A: My name is Douglas D. Wheelwright; my business address is 160 East 300 South, Salt Lake

4 City, Utah 84114. I am a Technical Consultant with the Division of Public Utilities

5 (Division).

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

7 A: The Division.

8 **Q: Please describe your position and duties with the Division**.

9 A: As a technical consultant, I examine public utility financial data and review filings for

10 compliance with existing programs as well as applications for rate increases. I research,

11 analyze, document, and establish regulatory positions on a variety of regulatory matters. I

12 review operations reports and evaluate the compliance with the laws and regulations. I

13 provide written and sworn testimony in hearings before the Utah Public Service Commission

14 (Commission) and assist in the case preparation and analysis of testimony.

15 **Q: Please summarize your educational and professional experience.**

16 A: I hold a Bachelor's degree in Finance from Weber State University. Prior to working for the

17 Division I was a financial advisor for 10 years and held SEC Series 7, 9, 10, 63 and 66

18 licenses. I began working for the Division in 2008 and have attended the NARUC Advanced

19 Studies Program at Michigan State University and have completed a number of other utility

20 regulation training courses. I have earned the professional designation Certified Rate of

21 Return Analyst (CRRA) from the Society of Utility and Regulatory Financial Analysts. I

22 have provided testimony to the Commission and appeared as a Division witness in previous

23 Questar Gas and PacifiCorp dockets.

24 <center>**II. BACKGROUND AND OVERVIEW**</center>

25 **Q: Will you briefly review the background and factual framework surrounding this**

26 **docket?**

27 A: Yes. On July 1, 2013, the Company filed an application requesting an increase to its Utah

28 retail rates of approximately $19.2 million. The primary driver of the requested rate increase

29 is the anticipated capital investment of $195 million in 2013 and $189 million in 2014. The

30 Company has asked for a continuation of the high pressure feeder line replacement program

31 and the addition of an intermediate high pressure pipeline replacement program. The

32 application recommends changes to the current cost of service and rate design, which will

33 impact customers currently on the TS and IS rate schedules. The proposed rate increase uses

34 a base year ending December 31, 2012, and a proposed forecasted test period ending

35 December 31, 2014.   If approved, the Company has requested that changes to the rate

36 schedules become effective March 1, 2014.

37 **Q: What is the purpose of your testimony in this matter?**

38 A: My testimony introduces the Division's witnesses and provides the Division's cost of capital

39 calculations for the Company.   I will present a summary of the Division's overall revenue

40 requirement recommendation, along with a brief explanation of the adjustments

41 recommended by each of the Division's witnesses.

42

<center>- 2 -</center>

43 **Q: What is the Division's recommendation for revenue requirement?**

44 A: In the original July filing, the Company identified a revenue deficiency of $18.9 million on a

45 Utah allocated basis. During the Division's initial review process, it was determined that the

46 model provided by the Company was using different Global Insights inflation factors than

47 the factors provided in the Company testimony causing the Company to update its figures.

48 At the same time the actual interest rates for two new debt offerings were available and the

49 Company provided an updated model to reflect both changes. The two updates resulted in an

50 increase in the revenue deficiency to $19.3 million. The adjustments proposed by the

51 Division use the higher $19.3 million as the starting point for the adjustments.

52 From the $19.3 million deficiency, the Division has identified $15.3 million in adjustments

53 leaving a deficiency of $4.0 million. The major Division adjustments include a $7.6 million

54 reduction based on a lower return on equity (ROE), a $2.7 million rate base adjustment and a

55 $3.8 million reduction due to an update in the pension expense. An additional $1.2 million

56 has been identified in other specific dollar adjustments and the netting effect of all the

57 adjustments combined together. The Division has entered the individual adjustments into the

58 Questar Gas model to calculate the impact on the total revenue requirement which is

59 summarized in DPU Exhibit 1.2 DIR. The specific details of the individual adjustments are

60 discussed in the testimony provided by separate Division witnesses and the calculations are

61 included in the Divisions adjustments to the Questar model as DPU Exhibit 1.1 DIR.

62 **Q: Do your adjustments include the updated depreciation study identified in the**

63 **Company's testimony?**

64   A: No. The Company would like to include the new depreciation study as part of this rate case;

65   however, parties have not had sufficient time to review the contents or the impact of the

66   study. In the original filing, Mr. Mendenhall's testimony states,

67   "The (depreciation) study is currently not complete but we anticipate that the
68   study will be completed sometime in the 4th quarter of 2013. At that time I will
69   supplement my testimony with the new depreciation rates. "[1]

70   In a technical conference held on August 13, 2013 the Company indicated that the new

71   depreciation study could be available as early as August or September. While parties

72   expressed concern at that time, receipt of the report by early September could have allowed

73   parties additional time for discovery and comments as part of direct testimony. The

74   Company provided the Division with a spreadsheet summary of the depreciation study on

75   October 2nd and a copy of the full study on October 11th. With direct testimony due on

76   October 30, the schedule does not allow sufficient time for discovery, analysis or comments

77   to be included. The Division has asked the Commission to set a separate schedule to

78   consider the Company's proposed depreciation and amortization schedule. On October 28,

79   2013, the Commission held a duly noticed scheduling conference. At the conference

80   attending parties agreed to have the Company file its study with supporting evidence under a

81   different docket. All depreciation issues including implementation of new rates will be dealt

82   with in that docket.[2] The model provided by Questar and used to evaluate possible

83   adjustments to the proposed rate increase does not include the information from the 2013

84   depreciation study.

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[1] Kelly B. Mendenhall, page 10, line 245.
[2] Dunkel and Associates has been hired by the Division to review the 2013 depreciation study.

85   III. DIVISION'S COST OF SERVICE PRINCIPLES

86   **Q: What are the Division's Rate Design objectives?**

87   A: Based on state statutes, the Division's cost of service and rate design objectives are for rates

88   to be stable, simple, understandable and acceptable to the public, economically efficient, to

89   promote fair apportionment of costs among individual customers within each customer class

90   with no undue discrimination, and to protect against wasteful use of utility services.[3]

91   Consistent with these statutorily defined objectives, the Division has developed a set of

92   guiding principles. These principles are:

93   1. Simplicity— Rates should be as simple as possible in design and easy to
94   understand and administer. Customers are more likely to accept and
95   understood relatively simple rates. Tariff descriptions should be clear,
96   unambiguous, and understandable by the public.
97   2. Correct Price Signals—Rates based on costs can incent customers to make
98   appropriate decisions about energy use including energy conservation. While
99   some customer classes are better able to understand complicated rates than
100   others, a complicated rate that is not understood may not provide clear or
101   correct price signals.
102   3. Rate Structures—Three part rates with customer, energy, and demand
103   components will more fairly apportion the costs among individual customers
104   than one or two part rates. However, a demand component for the residential
105   class is normally not recommended since the added cost of demand meters
106   usually outweighs the benefit of better cost apportionment.
107   4. Gradualism—Gradual changes in rates help to promote rate stability and to
108   minimize impacts on individual customers.
109   5. Marginal and Embedded Costs—Regulated rates must be designed to recover
110   the embedded revenue requirement of a rate schedule. Marginal and average

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[3] See Utah Code Ann. § 54-4a-6)

111   unit embedded costs should be reviewed and taken into account when setting

112   prices.

113   6. Customer Charges—Costs that generally increase with the number of

114   customers, but are not caused by each customer should be excluded from the

115   customer charge and instead be included within the commodity portion of

116   rates.[4]

117   The Division and its consultant relied on these principles in this case in formulating its cost of

118   service and rate design proposals.

119   **IV. INTRODUCTION OF WITNESSES**

120   **Q: Please identify the Division's witnesses for the revenue requirement phase as well as the**

121   **cost of service/rate design phase of this docket.**

122   A: In addition to my own testimony on the cost of capital calculation, the Division will provide

123   six additional witnesses covering adjustments to the revenue requirement as well as cost of

124   service/rate design issues. Mr. Eric Orton, Ms. Carolyn Roll and Mr. Matthew Croft will

125   address issues related to the infrastructure tracker, rate base and capital expenditures. Mr.

126   David Thomson and Mr. Clair Oman will address accounting issues and individual

127   adjustments. In addition to the testimony from Division personnel, the Division has hired

128   LaCapra and Associates to evaluate the issues related to cost of service and rate design. Ms.

129   Lee Smith from LaCapra will be providing testimony and analysis on behalf of the Division.

130   Ms. Smith provided testimony in the Company's previous general rate case and participated

131   in the previous cost of service task force on behalf of the Division.

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[4] See Commission Order in Docket No. 82-057-15

132   The Division believes that each of the adjustments to the Company's revenue requirement

133   recommended in testimony filed by Division witnesses, including consultants, is supportable

134   and represents a reasonable adjustment to the revenue requirement.

135   **Q: Please briefly summarize the work and investigations that has been performed in this**

136   **case.**

137   A: The Division has reviewed the testimony of the Company witnesses along with the

138   attachments and exhibits. The Division and its consultant have submitted over 200 data

139   requests to the Company and have participated in meetings with Company representatives to

140   obtain additional information and clarification of multiple topics.   I have reviewed and

141   analyzed the testimonies of Company witnesses with specific emphasis on the testimony of

142   Mr. David M. Curtis and the cost of capital calculations. I have also performed my own

143   independent analysis and estimate of the cost of capital, particularly with respect to the cost

144   of equity. In my analysis I used a cutoff date of September 30, 2013 for individual stock

145   prices and market conditions.

146   **V. CONCERNS WITH THE QUESTAR ANALYSIS**

147   **Q: Do you have any concerns or disagreements with the information presented by the**

148   **Company in this rate case related to the cost of capital calculation?**

149   A: Yes. The approaches used by Mr. Curtis to estimate the cost of equity in this case are

150   consistent with previous general rate cases filed by the Company and some are similar to the

151   approaches used in my analysis. While Mr. Curtis has used similar analysis methods, I have

152   identified areas of concerns and disagreement with Mr. Curtis' analysis and testimony.

153   1.   The selection of the comparable companies is important to the analysis process. I agree

154   with the original list of 21 companies and the first three criteria used to select the proxy

155   group. The first criteria require that at least half of the total operating income must come

156   from the natural gas distribution segment of the business.[5] While I agree with six of the

157   companies used in the proxy group, two of the companies included in the Company

158   analysis do not meet the minimum operating revenue requirement. Based on the 2012

159   SEC 10-K report, only 27.9% of the operating revenue of New Jersey Resources came

160   from natural gas distribution.[6] WGL Holdings, Inc should also be excluded since only

161   45.7% of the operating revenue came from the natural gas distribution portion of the

162   business.[7] Both of these companies have been included in the Company analysis but

163   should have been eliminated in the first sort. The Division's analysis has excluded both

164   companies.

165   The Company's analysis has excluded Laclede Gas from the proxy group based on its

166   pending acquisition of Missouri Gas. However, the pending acquisition does not affect

167   the historical earnings or dividend payments used in the analysis and does not appear to

168   have significantly influenced the reported beta or the forecast earning and growth rates.

169   With the limited number of comparable companies and the limited impact on the forecast,

170   I disagree with the exclusion of Laclede and have included it in the Division's analysis.

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[5] Direct Testimony of David M. Curtis, Line 110.
[6] New Jersey Resources Corporation, 2012 Form 10-K, Item 8. Financial Statement and Supplementary Data, p. 108
[7] WGL Holdings, Inc., 2012 Form 10-K, Item 6. Selected Financial Data, p. 24.

171   2. In the Company's discounted cash flow (DCF) analysis, Mr. Curtis states that "there may

172   be a bias for investment analysts to understate earnings growth potential".[8] This

173   statement is used to justify the use of a higher estimated growth rate calculation in QGC

174   Exhibit 2.3, page 2. There is no supporting study or information to support this proposed

175   bias and to justify using a higher rate. Mr. Curtis'conclusion is the exact opposite of the

176   findings from a recent research study by Thompson Reuters.

177   The findings of this analysis support the conclusions of previous research done in the
178   development of the StarMine Intrinsic Valuation Model (IV). Analysts tend to
179   overestimate their annual earnings forecast by about 17% when looking two years
180   ahead. A year later, this bias falls below 8%. The estimation bias in earnings
181   estimates is a persistent phenomenon that appears to be mostly related to the general
182   human trait to be overoptimistic about the future.[9]
183
184   This would suggest that the proxy group earnings estimates used in Exhibit 2.3 page 2 are

185   inflated and that while the analysis estimates in Exhibit 2.3 page 1 may already be

186   optimistic, the estimates are likely more accurate. According to the QGC Exhibit 2.3

187   page 1, the Company's DCF model has been calculated by the Company at 8.73%.[10] It

188   should be noted that the analyst forecast for future growth rates are not significantly

189   different than the historical growth rates for the companies under review. It is interesting

190   that the narrative portion of Mr. Curtis' testimony referring to Exhibit 2.3, rounds up the

191   calculated results by 27 basis points to an even 9.0%.[11]

192   Another area of concern relating to the DCF analysis is the use of Company estimated

193   growth rates from only five of the eight select comparable companies and its use of a

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[8] Direct Testimony of David M. Curtis, p. 7, line 171.
[9] Estimates Too High, Low? Check the Calendar, Thompson Reuters, Fundamental Research, February 11, 2013.
[10] QGC Exhibit 2.3, page 1, line 11, column N.
[11] Direct Testimony of David M. Curtis, p. 8, line 202.

194   midpoint value of 6.42% compared to the average of 5.67%. The calculation also

195   includes a sixth company, Questar Gas, to calculate the estimated industry growth rate.[12]

196   No explanation is provided for why estimates for the other comparable companies were

197   not included or why Questar Gas has been included in the calculation to determine the

198   appropriate growth rate for Questar Gas.

199   3.   The CAPM model calculation includes an add-on for a small company premium to the

200   individual companies based on company size. While the Questar calculation adds the

201   small company premium, it ignores the industry premium estimate provided by Ibbotson

202   for natural gas distribution companies (SIC Code 4924). The industry premium for

203   natural gas distribution companies is -2.44%[13] but has been excluded from the Company

204   analysis. Including the industry premium in the Questar Gas calculation would reduce

205   the average from 9.82%[14] to 7.38%.

206   4.   Mr. Curtis states that the "The requested allowed return on equity of 10.35% is consistent

207   with the returns authorized in other jurisdictions in recent rate cases."[15] QGC Exhibit

208   2.10 is a chart of the authorized returns from 2009 through 2012 but does not include the

209   most recent commission decisions for 2013. The 10.06% average return used in the

210   Company analysis is the four year average from 2009 through 2012. Using only the four

211   year average ignores the downward trend in the approved returns in more recent periods

212   which will be described in more detail later in this testimony. There have been 18

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[12] QGC Exhibit 2.3, page 2.
[13] 2013 Ibbotson SBBI Valuation Yearbook, Table 3-5, page 37.
[14] QGC Exhibit 2.5, line 11, column I.
[15] David M. Curtis, page 17, line 433.

213   commission decisions on the authorized return for natural gas companies through

214   September 2013. Information available from SNL Financial indicates that the average

215   approved ROE for the first nine months of 2013 was 9.51% with the highest allow return

216   of 9.80%.[16] The requested 10.35% is not consistent with the returns authorized in other

217   jurisdictions as claimed by Mr. Curtis.

218 5. Mr. Curtis' testimony has a lengthy discussion of how the Company would be hurt if the

219   bond rating were to be reduced to below investment grade.[17] While this is an interesting

220   discussion, the information presented in QGC Exhibit 2.8 indicates that even with a 100

221   basis point reduction in the ROE, the bond rating would not be affected and would not

222   cause Questar Gas bonds to drop below investment grade. A reduced ROE has no impact

223   on four of the other ratios calculated by the Company and remain in the A rating range

224   identical to the 2012 year end calculation. The debt/EBITA ratio referred to in Mr.

225   Curtis' testimony remains BBB as it was as of year-end 2012. None of the calculations

226   provided in Exhibit 2.8 indicate that a reduction in the ROE of the size that might be

227   contemplated in this rate case would drop the bond rating to below investment grade.

228 6. The DCF model calculation in QGC Exhibit 2.3 does not use the 75% earnings growth

229   and 25% dividend growth calculation as ordered in the 2002 Questar General Rate Case.

230 7. The comparable earnings analysis provided in QGC Exhibit 2.9 uses a 10 year average of

231   the comparable companies in order to calculate the 11.50% average ROE[18]. Mr. Curtis

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[16] DPU Exhibit 1.4a DIR, SNL Financial, Rate Case History.
[17] David M. Curtis, page 15, line 395.
[18] QGC Exhibit 2.9, column K, line 35.

232   states "the proxy companies are earning returns consistent with or higher than the

233   requested allowed return on equity of 10.35%".[19] The exhibit does not provide a

234   calculation of the 10 year average ROE for Questar Gas for comparison and includes two

235   companies that should be eliminated based on the Company's selection criteria.   New

236   Jersey Resources, one of the companies that should have been eliminated, has as 10 year

237   average return of 15.3%.[20] As will be described later in my testimony, the exclusion of

238   New Jersey Resources and WGL Holdings reduces the historical average for the

239   comparable companies and shows that the ROE for Questar Gas has been comparable

240   with the peer group. Furthermore, regulation and a commission allowed ROE provide a

241   utility with the right to earn a fair return but does not guarantee a specific return.

242   **VI. COST OF DEBT**

243   **Q: Do you have a comment about the cost of debt included in the application?**

244   A: Yes. The original application provided the specific interest rates for the existing debt

245   obligations and an estimated interest rate for $150 million in new debt that was about to be

246   issued. Shortly after filing, the Company provided an update with the actual rate of 4.78%

247   for $90 million and 4.83% for $60 million. The rate on the new debt compares favorably

248   with the 1.11% premium above long term treasuries for regulated utilities.[21]

249   **Q: What did you conclude regarding the cost of long-term debt?**

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[19] David M. Curtis, page 16, line 420.
[20] QGC Exhibit 2.9, column E, line 35.
[21] 2013 Ibbotson SBBI Valuation Yearbook, table 9-6, page 121.

250   A: The cost of long-term debt appears to be reasonable. The Company does not appear to have

251   any difficulties in the current credit markets and has the ability to issue debt at favorable

252   interest rates.

253   **VII. COST OF COMMON EQUITY**

254   **Q: Will you summarize the Return on Equity amount the Division is recommending for**

255   **this case?**

256   A: Yes. I have completed and included the calculations for the various models and believe that

257   the appropriate cost of equity for Questar Gas is 9.45%. The Division's recommendation is

258   near the mid-point of the calculated range of 7.59% to 11.04% and is based on an average of

259   the Ibbotson Risk Premium model, Discounted Cash Flow model and the Comparable

260   Earnings model.[22]   The recommended rate is fair to the ratepayers and to the Company and

261   is comparable with the 9.51% average authorized return for natural gas companies in 2013.[23]

262   The results of the Division's calculations are summarized in DPU Exhibit 1.3 DIR, which

263   includes a comparison of the calculations and recommendation provided in Mr. Curtis'

264   testimony. The details of the calculations from the various models will be explained later in

265   my testimony.

266   **Q: How does the Division recommendation compare to the information filed by the**

267   **Company?**

268   A: A similar averaging of the Company calculations for the Risk Premium Model, Discounted

269   Cash Flow, and Comparable Earning model produces an average of 9.72%. It is unclear to

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[22] DPU Exhibit 1.3 DIR.
[23] DPU Exhibit 1.4a DIR.

270   the Division how the Company came to the final recommendation of 10.35% identified in

271   Mr. Curtis' testimony. The Company has not provided information or a reason for weighting

272   one method over the others and has not provided a reason to select the high end of the

273   calculated range. I will discuss some of my concerns with Mr. Curtis' analysis and

274   recommendation later in my testimony.

275   **VIII.   CAPITAL STRUCTURE**

276   **Q: Do you agree with the Company's proposed capital structure?**

277   A: The Division has no disagreement with the Company's requested capital structure of 52.1%

278   common equity and 47.9% long-term debt. The proposed levels are similar to the 2012

279   levels of 52.3% equity and 47.7% debt and matched the Company's ten year historical

280   average levels of 52.1% and 47.9%. DPU Exhibit 1.4 DIR shows the historical equity and

281   debt structure for Questar and the comparable companies from 2010 through 2012 along with

282   the five and ten year averages. The average equity position for the comparable companies

283   has increased 1.2% over the past ten years compared to the 0.2% increase for Questar. The

284   proposed capital structure results in the weighted average cost of capital of 7.44% for the

285   proposed test year.

286

	Rate	Capital Structure	Weighted Rate
Common Stock	9.45%	52.07%	4.92%
Long-term Debt	5.25%	47.93%	2.52%
Weighted Average Cost of Capital (WACC)		100.00%	7.44%

287

288   **IX. DIVISION ANALYSIS**

289   **A. AN OVERVIEW OF COST OF COMMON EQUITY MODELS**

290   **Q: What methods did you look at in order to estimate the current market cost of equity for**

291   **Questar Gas?**

292   A: I used similar models to those used in previous rate cases before the Commission and similar

293   to those used in Mr. Curtis' analysis. I have included both a simple or single stage DCF

294   model and a two-stage DCF model. Within the models I have considered the projected

295   growth rates from multiple sources. I have included multiple Risk premium models,

296   including the capital asset pricing model (CAPM) and the Ibbotson model with and without

297   industry or size adjustments. I have also included a comparable earnings model for

298   comparison to the proxy group of companies.

299   **Q: Please briefly describe the single-stage DCF model.**

300   A: The single-stage DCF model assumes that the value of ownership in a common stock is

301   based upon the returns the stockholder expects to receive into perpetuity. It incorporates the

302   current dividend and the prospects for growth in that dividend over time. Among other

303   things, the model assumes that the expected price-to-earnings ratio for the company's stock

304   will remain constant at the current level. In the single-stage model it is assumed that there

305   exists a growth rate "g" that is constant. That is, this "g" will adequately serve as a surrogate

306   for the growth in dividends for all periods of time in the future. The formula used is

307                                   $k_e = D_0*(1+g)/P_0 + g$

308   Where: k_e is the cost of common equity
309   D_0 is the current dividend
310   P_0 is the current stock price
311   g is the (constant) growth rate
312

313   **Q: Please describe Two-Stage DCF models.**

314   A: Two-stage DCF models are based upon the same principles and assumptions that the single-

315   stage models are premised upon, except that for an initial period of years, usually five to ten

316   years, the dividends are explicitly forecast. Following this initial period, a "terminal value"

317   or lump-sum price is calculated, which represents the estimated present value of the future

318   dividends following the initial period. A discount rate is found for the explicitly forecast

319   initial period dividends and the terminal value such that the present value of the forecast

320   dividends and terminal value equals the current stock price. This discount rate is the cost of

321   equity in the two-stage DCF model.

322   **Q: What are the strengths and weaknesses of the DCF models?**

323   A: Briefly, the strengths of the models are their simplicity and ease of application, particularly in

324   the single-stage version of the model. DCF models are derived directly from the financial

325   theory that the price of a common stock is equal to the present value of the future cash flow

326   available to stockholders. Two of the three principal components of the model are directly

327   observable in the market: the dividend and the stock price. The future growth rate is

328   necessarily an estimate, and thus can be controversial. The single-stage model can be faulted

329   because of its assumption that there is a single growth rate that will apply to the company

330   into the indefinite future (theoretically, forever). Non-constant and multi-stage DCF models

331   can handle changing growth rates in the future and even changing discount rates, but they are

332   increasingly complex.

333   **Q: As you mentioned earlier, in the 2002 Questar Gas general rate case the Commission**

334   **adopted a 75 percent weighting on earnings growth estimates and a 25 percent**

335   **weighting on dividend growth estimates. Do you have any comments on this weighting**

336   **scheme?**

337   A: For a single-stage model this weighting appears reasonable to me. It gives consideration to

338   the fact that the model is theoretically about dividends and not earnings, but also reflects that

339   dividend growth is related to earnings growth. Also implicit is the concept that differences

340   between dividend growth and earnings growth rates in the near-term have a greater effect on

341   the cost of equity than any such differentials in the long-term. I believe the current weighting

342   scheme is reasonable and should continue to be used.

343   **Q: Do you have any comments comparing single-stage DCF models with two-stage models?**

344   A: Yes I do. The main advantage of two-stage (and even three-stage, or more) models is simply

345   the ability to separate out the estimate into two or more components. If the analyst has a

346   good basis for the specific separation of future cash flows into two or more components and

347   has a good basis for the length of time of the initial stage(s) as well as the growth

348   differentials for different components, then these models can be very useful. They would

349   also be useful if the goal was to develop "what if" scenarios. However, in the case of cost of

350   equity estimates for a company in a mature industry, the time periods used and the growth

351   rate differentials tend to be subjective and even arbitrary. The analyst has to make more

352   judgments and assumptions, including: (1) the length of the periods of different growth rates;

353   (2) the growth rates for different periods; (3) the calculation of the terminal value (if any);

354   and (4) whether to assume the discount rate should remain constant and, if not, how it should

355   be estimated. Given these complexities with two-stage or higher multi-stage DCF models, it

356   is difficult to imagine that they will generally be better estimators of cost of capital.

357   The results of a two- or more stage DCF model have a single-stage equivalent with a growth

358   rate that is unlikely to be much different from the growth rates used in a multi-stage model

359   especially in a mature and price-regulated industry such as the gas utility industry. For these

360   reasons, I do not believe two-stage DCF models currently add a lot of new information to the

361   estimate of cost of equity for gas utilities. However, further theoretical developments or

362   better data, or both, for multi-stage models may increase the usefulness of these types of

363   models.

364   **Q: Please briefly describe the capital asset pricing model (CAPM).**

365   A: The CAPM is a type of risk premium model. CAPM grew out of theoretical work in modern

366   portfolio theory in the 1960s. Modern portfolio theory has shown that diversified portfolios

367   could reduce the variability in the value of those portfolios and that a risk factor called "beta"

368   could be used to estimate the relative variability of a portfolio to the market portfolio. The

369   theory of CAPM is that the cost of equity is equal to the risk free rate plus a market risk

370   premium adjusted by the risk factor beta. The market risk premium is the additional return

371   over the risk free rate that a portfolio of all risky investments, i.e. the "market," would expect

372   to earn. One of the theoretical underpinnings of CAPM is that investors through a diversified

373   portfolio could virtually eliminate risk specific to a particular investment such that if the

374   investor were sufficiently diversified, he would only face the risk of the market, which is also

375   called systematic risk. Beta is a measure of the volatility of an investment's value compared

376   to the market as a whole and will indicate to an investor how a given investment will affect

377   the systematic risk of his portfolio. Under CAPM theory investors are not rewarded for the

378   specific risks of a particular investment because these risks can be diversified away. The

379   only reward the investor receives is the systematic risk, represented by the beta that an

380   investment brings with it to the portfolio.

381   The calculation of the CAPM cost of equity for a company is straight forward and is based

382   upon readily available information. This model is widely taught in the academic literature

383   and is widely used in industry.[24]

384   The formula for the CAPM is as follows:

385    $$k_e = RFR_0 + \beta * (MR\text{-}RFR)$$

386   Where: k_e is the cost of common equity
387   RFR_0 is the current risk free rate
388   β is beta, the risk adjustment factor
389   (MR-RFR) is the market risk premium which can be decomposed
390   into two factors: The overall market return, MR, and the
391   RFR that is compatible with the way the MR was
392   estimated.
393

394   **Q: Please briefly discuss the strengths and weaknesses of the CAPM.**

---

[24] Modern portfolio theory and the capital asset pricing model are discussed in detail in texts on corporate finance and investment valuation. See, for example:
    Brealey, Richard A., Stewart C Myers and Franklin Allen. (2006). *Principles of Corporate Finance 8th ed*. New York: McGraw-Hill Irwin.
    Brigham, Eugene F. and Joel F. Houston. (2007). *Fundamentals of Financial Management 5th ed*. Mason, Ohio: Thomson South-Western.
    Damodaran, Aswarh. (2002). *Investment Valuation*. New York: John Wiley & Sons, Inc.
    Parcell, David C. (1997). *The Cost of Capital – A Practitioners Guide*.

395   A: The strengths include a firm theoretical basis for the model, its relative simplicity and

396   intuitive appeal. The model is widely taught and widely used in corporate America. The

397   downside of the model is that there is little consensus on how each of the factors are

398   developed and how the model is implemented.

399   Different analysts will choose different risk free rates, which will affect the outcome as I

400   demonstrate in my application. Academics sometimes favor using a Treasury Bill rate as the

401   most nearly true risk free security, while practitioners favor longer-term bond rates to match

402   the apparent holding period of the asset. Beta is calculated in various ways using different

403   base periods, market proxies and other measurement differences such as the frequency of the

404   observations and even the day of the week the observations are made. Some services offer

405   "adjusted" betas that "correct" the calculated or "raw" beta to account for the apparent

406   tendency of betas to revert to a mean over time. The available services assume that the mean

407   that the betas revert to is the market beta, 1.0.

408   Perhaps the most hotly debated factor is the market risk premium; that is, the premium return

409   investors demand from stocks over the risk free rate. Some practitioners support the use of

410   the arithmetic average of the difference between historical stock market returns (with the

411   Standard & Poor's 500 Index as a proxy) and long-term (approximately 20 years) treasury

412   bond returns since 1926 as popularized by Ibbotson Associates over the last 30 years or so.[25]

413   This approach has been criticized by academics and others on a number of grounds. Some

414   say the historical time period is too long, reaching back to a much different economy than we

415   have today. Others have cited technical problems with the data Ibbotson compiled. One

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[25] Stocks, Bonds, Bills, and Inflation (SBBI), any edition, published annually by Ibbotson Associates.

416   technical problem is referred to as "survivor bias." Survivor bias refers to the fact that the

417   underlying Ibbotson data is composed of companies that were successful; losers are not

418   included. Studies indicate that this bias inflates the Ibbotson-based market risk premiums by

419   about 1 to 2 percentage points.[26] Another issue is the use of arithmetic averages versus

420   geometric averages. Ibbotson Associates, Brealey, Myers, and Allen among others, argue

421   that arithmetic averages produce the appropriate unbiased estimates of returns. The use of

422   arithmetic averages significantly overstates the actual returns an investor would have actually

423   received over a long historical period of time, a time period in which the geometric average

424   accurately reflects the actual experiences of investors. For this reason and others, some

425   experts advocate geometric returns.[27] In short there is great dispute about how the market

426   risk premium should be estimated. I have used the Ibbotson Associates data because it is

427   readily available and widely used.

428   Empirical studies of stock returns have turned up anomalies that have suggested flaws in the

429   CAPM. In order to correct for these anomalies (and save the basic theoretical construction)

430   additional factors have been specified for the model such as the Fama-French three-factor

431   model or add-ons to the model such as adjustments for size or industry. None of these

432   adjustments have avoided controversy.   The practical implementation of the CAPM has

433   resulted in controversy and disagreement. Despite these problems the CAPM is widely used

---

[26] Brigham, Eugene F. and Joel F. Houston. (2007). Fundamentals of Financial Management 5th ed. Mason, Ohio: Thomson South-Western. p. 272.
[27] For a discussion of geometric versus arithmetic averages, see Damodaran Aswarh. (2002). Investment Valuation. New York: John Wiley & Sons, Inc. pp. 161-162 and PPC's Guide to Business Valuations, Volume 1, paragraph 502.8, Practitioners Publishing Company, Fort Worth Texas, February 2006.

434   and has an established theoretical basis. The fact of its widespread use necessitates that an

435   analyst at least consider the CAPM in evaluating a cost of equity problem.

B. COMPARABLE (PROXY) COMPANIES

437   **Q: What are the "comparable companies" you referred to and how were they chosen?**

438   A: One of the first steps in the estimate of cost of equity was the selection of publicly traded

439   "comparable," or "proxy" companies whose market returns and characteristics would be

440   studied in order to infer from them what the appropriate cost of equity should be for Questar

441   Gas. The selection and use of comparable companies is obviously critical since Questar Gas

442   itself is not an independent, publicly traded company. Even if Questar Gas were publicly

443   traded it would be advisable to compare it with closely related companies in its industry.

444   The Company's witness, Mr. Curtis, chose eight companies as cited in his testimony. These

445   companies were selected from the Yahoo! Finance list of "Gas Utilities" and then selected

446   based upon the following criteria: (1) at least half of the total operating income must come

447   from natural gas distribution operations; (2) the company must have an investment grade

448   bond rating; (3) the company must be followed by at least two investment analysts; and (4)

449   the company must not be in the process of being acquired or acquiring other companies. As

450   stated previously, based on the first criteria for total operating income, New Jersey Resources

451   and WGL Holdings should have been excluded from the comparable selection. The last

452   selection criteria for no pending mergers or acquisitions has not been used in previous rate

453   cases and appears to be an arbitrary criteria to exclude Laclede Group from the list of

454   comparable companies.

455 **Q: Does your selection criteria and comparable company list differ from the list presented**

456 **by Mr. Curtis?**

457 A: Yes, although my selection criteria differ, many of the companies selected are the same. The

458 comparable companies I selected were based upon the following criteria; (1) at least 60% of

459 the total revenue is generated from gas utility operations; (2) the company must have an

460 investment grade bond rating; and (3) the company must be followed by at least two

461 investment analysts.   Five of the companies selected are identical to the comparables used by

462 Mr. Curtis, however, my list excludes New Jersey Resources and WGL Holdings and

463 includes Laclede Group. DPU Exhibit 1.6 DIR lists my selection of comparable companies

464 along with summary data supporting the selection. Of the seven comparable companies used

465 in the analysis, Northwest Natural Gas and Piedmont Natural Gas have the closest operating

466 similarity to Questar Gas since nearly all of the revenue of these two companies is derived

467 from natural gas distribution.

468 **C. APPLICATION OF COST OF EQUITY MODELS**

469 **1. Single-Stage DCF Models**

470 **Q: Please describe how you developed the Single-Stage DCF models.**

471 A: First, I calculated the current dividend yield for each of the comparable companies. The

472 dividend was based upon annualizing the latest quarterly dividend. I considered both a spot

473 price as of the September 30, 2013, and a 30-trading day average closing price. The 30-

474 trading day average closing price was used to smooth out random fluctuations that might

475 exist in the stock price data. The historical price information was obtained from Yahoo!

476   Finance. Next, I took earnings and dividend growth rates from the latest Value Line reports

477   for each comparable company as well as the latest updates on Value Line's web site accessed

478   October 2, 2013. This information was combined with the consensus earnings growth

479   estimates reported on the Yahoo! Finance, Zack's and Reuters web sites for each comparable

480   company. The Yahoo! Finance, Zack's and Reuters web sites were accessed after the

481   markets closed on October 2, 2013. DPU Exhibit 1.7 DIR is a summary of the growth

482   estimates from the various sources used in my analysis.

483   I considered several different growth rate estimates for the single-stage models. First I

484   calculated growth rates based upon a weighted-average by applying a 75 percent weight to

485   the average earnings growth rate from Value Line, Zack's, Reuters, and Yahoo!, and 25

486   percent weight to the dividend growth rate (from Value Line) in compliance with the

487   Commission's decision in Questar Gas., Docket No. 02-057-02. DPU Exhibit 1.8a DIR

488   provides the calculation of the DCF model using the average of Reuters, Zacks and Yahoo

489   reported earnings growth rates and the 30-day average stock price. This calculation results in

490   an estimated cost of capital range of 7.23% to 10.04% with an average of 8.52%.

491   Exhibit 1.8b DIR provides the same calculation of the DCF model using the Value Line

492   earnings and dividend growth rates. The results of the single stage DCF model using the 30

493   day average stock price and the Value Line earnings and dividend growth rates calculates an

494   estimated cost of capital range of 7.98% to 12.20% with an average of 9.71%. The results

495   from the DCF models along with the other models are summarized on DPU Exhibit 1.3 DIR.

496

497 **2. Two-Stage DCF Models**

498 **Q: Please describe the Two-Stage DCF models you developed for this case.**

499 A: In developing two-stage DCF models I forecast the current dividends of each comparable

500 company out five years a couple of different ways. First, I assumed that the dividends grew at

501 the dividend growth rate forecast by Value Line. Second, I assumed that the dividends grew

502 at the simple average of the average earnings and dividend growth rates. In each case for

503 discounting purposes the dividends were assumed to occur in the middle of the year. A

504 "sixth" dividend was forecast to occur at the end of the fifth year. This sixth dividend was

505 used as a factor to estimate the terminal value. The terminal value was calculated by

506 dividing the sixth dividend by the cost of equity less the terminal growth rate. The terminal

507 growth rate was assumed in the first instance to equal the 75-25 percent weighted average of

508 the earnings and dividend forecast growth rates. In the second instance the terminal growth

509 rate was assumed to be the earnings forecast growth rates. DPU Exhibit 1.9a DIR provides

510 the calculation of the two-stage DCF model using the average of Reuters, Zacks and Yahoo

511 reported earnings growth rates and the 30-day average stock price. This calculation results in

512 an estimated cost of capital range of 6.73% to 9.64% with an average of 8.48%.

513 Exhibit 1.9b DIR provides the same calculation of the two-stage DCF model using the Value

514 Line earnings and dividend growth rates. The results of this model using the 30 day average

515 stock price and the Value Line earnings and dividend growth rates calculates an estimated

516 cost of capital range of 8.14% to 12.46% with an average of 9.81%. The results from the

517 two-stage DCF models along with the other models are summarized on DPU Exhibit 1.3

518 DIR.

519   **3. CAPM Results**

520   **Q: How did you develop your CAPM models?**

521   A: I looked at the CAPM model using different risk free rates, time periods, betas, and market

522   risk premiums. I did this to look at how the variable factors affect the outcome of the CAPM

523   estimate. As stated earlier, there is no consensus on precisely how the components of the

524   CAPM should be estimated.

525   **Q: What risk-free rates did you choose?**

526   A: To calculate the CAPM, I chose the 30-year Treasury bond, which was reported as 3.69% as

527   of September 30, 2013. I have used the longer-term rates in order to match the holding

528   period of the asset under consideration. As mentioned above, the selection of the risk free

529   rate represents just one of the difficulties in calculating the CAPM. The 30 year treasury is

530   the same index used in the Company analysis with a slight difference in the rate due to a

531   different selection date.

532   **Q: What beta estimates did you use?**

533   A: I have calculated the CAPM using the beta from Value Line and the average beta as reported

534   by Reuters, Zacks and Yahoo! Finance. The Value Line beta is adjusted to converge toward

535   1.0 whereas the other betas are not adjusted. The VL formula is (adj beta) = .67*(raw beta) +

536   .33. The individual beta estimates for each company can be seen in DPU Exhibit 1.7 DIR.

537   **Q: Please describe the market risk premiums you used?**

538   A: All of my market risk premiums are derived from historical data published by Ibbotson

539   Associates. These historical averages have been the subject of criticism for a number of

540   reasons, some of which were cited above. I consider the 87-year "Ibbotson period" to be

541   problematic since it includes market situations much different than today. The most obvious

542   examples are the rise of mutual funds for small investors and more recently the internet

543   making publicly available information almost instantaneously available anywhere in the

544   world. There are also institutional changes since 1926, such as the creation of the Securities

545   and Exchange Commission, changes in accounting rules, and Sarbanes-Oxley. Furthermore,

546   there have been suggestions and studies to indicate that investors' expectations may change

547   over time. Thus a long historical period may not accurately reflect today's market and

548   expectations.

549   **Q: What historical period would you recommend?**

550   A: I feel most comfortable with a 30- to 50-year time period. A 30- to 50-year period is long

551   enough to smooth out the sometimes wide fluctuations in the data, but short enough to focus

552   on the more recent data of the modern financial markets. At the bottom of the CAPM

553   calculations included as DPU 1.10 DIR Exhibits, I have provided the risk premiums for 15,

554   20, 30, 40 and 50 year averages. Since there can be discussions on which of the time periods

555   to use, I have included them for reference. It is interesting to note the 50 year risk premium

556   of 4.50% is substantially different than the 87 year average of 6.70%.

557   **Q: Why does your exhibit use the 87 year risk premium in the CAPM calculation?**

558   A: This time period has been widely promoted by Ibbotson and others as the "correct" time

559   period, I did not want to exclude it completely from my analysis. I also wanted to use the

560   higher risk premium to partially compensate for the historically low interest rates in the

561   current economy.

562 **Q: What were your results for your CAPM calculation?**

563 A: DPU 1.10a DIR provides the calculations for the CAPM using the average beta as reported

564   by Reuters, Zacks and Yahoo, the 30 year treasury rate and the 87 year average risk

565   premium. Using only these variables, the average expected market return is 6.71%. To this

566   amount the Ibbotson Industry Premium estimate of -2.44% and the average size premium of

567   1.52% have been added for a calculated investor expectation of 5.79%. This result appears to

568   be inconsistent with the other models and has not been included in the recommended ROE

569   for Questar Gas. As mentioned above, the 30 to 50 year averages are probably a better

570   indication of the current conditions. The calculations for the 15 to 50 year averages have

571   been included at the bottom of the exhibit and result in even lower estimates for the cost of

572   capital calculation.

573   DPU 1.10b DIR provides the calculations for the CAPM using the using the Value Line beta,

574   the 30 year treasury rate and the 87 year average risk premium. Using only these variables,

575   the average expected market return is 8.24%. To this amount the Ibbotson Industry Premium

576   estimate of -2.44% and the average size premium of 1.52% have been added for a calculated

577   investor expectation of 7.32%. As with the previous model, after making the industry and

578   size adjustment, the results appear to be inconsistent with the other models and have not been

579   included in the recommended ROE for Questar Gas. The calculations for the 15 to 50 year

580   averages have been included at the bottom of the exhibit for reference but have not been

581   considered.

582   The CAPM and other valuation models should not be used in isolation. I believe that

583   including the industry and size adjustments is questionable and results in calculations that are

584   outside the range of reasonableness.

585   **Q: Your calculation of the CAPM is significantly different from the calculation used by the**

586   **Company. Can you explain the differences?**

587   A: The Division and the Company have both used the same risk premium as provided by

588   Ibbotson and both have used the 30 year US Treasury as the risk free rate to calculate an

589   expected market return. There is a small difference in the Treasury rate used in the

590   calculations due to the different dates used in the analysis. To this amount, the Company and

591   the Division have added a size premium as provided by Ibbotson. The primary difference

592   between the Division model and the Company model is the specific industry adjustment.

593   This information is provided by Ibbotson but was not included in the Company calculation.

594   The industry adjustment for natural gas distribution companies is -2.44%.[28]

595   **Q: You have included an additional calculation for the CAPM. Can you explain the source**

596   **of the information and your reasons for including it with your analysis?**

597   A: Exhibits 1.10c DIR and 1.10d DIR are calculations using a historical risk premium as

598   calculated by Dr. Aswath Damodaran.   Dr. Damodaran is a Professor of Finance at the Stern

599   School of Business at New York University.   His research interests are in valuation,

600   portfolio management and applied corporate finance. His papers have been published in the

601   Journal of Financial and Quantitative Analysis, the Journal of Finance, the Journal of

602   Financial Economics and the Review of Financial Studies. He has written four books on

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[28] 2013 Ibbotson SBBI Valuation Yearbook, table 3-5, page 37, SIC Code 4924.

603   equity valuation (*Damodaran on Valuation*, *Investment Valuation*, *The Dark Side of*

604   *Valuation*, *The Little Book of Valuation*) and two on corporate finance (*Corporate Finance:*

605   *Theory and Practice*, *Applied Corporate Finance: A User's Manual*).

606   Dr. Damodoran has calculated the average historical equity risk premium for stocks minus

607   the U. S. Treasury Bonds at 5.88% from 1928 to 2012 and 3.91% from 1963 to 2012.[29]

608   Using the Damodoran historical risk premium and the Value Line beta produces a range of

609   6.69% to 9.55% with the average of 7.93%. This result is slightly higher than the adjusted

610   Ibbotson calculation of 7.32% in DPU Exhibit 1.10b DIR.   The results of the CAPM using

611   Dr. Damodoran's averages have been included for reference but have not been included in

612   the calculation for Questar Gas.

613   **4. Risk Premium Results**

614   **Q: What do the risk premium results suggest to you?**

615   A: The risk premium results are low compared to the other models used and compared to recent

616   commission orders. I believe the CAPM model is returning low values due to the current

617   low interest rate environment caused by the current monetary policy.

618   **Q: You have included an Ibbotson risk premium without any adjustments in your average**

619   **to calculate your recommended ROE for Questar Gas. Can you explain why you**

620   **included the calculation in your analysis?**

621   A: Yes. I wanted to provide a simple calculation of the current 30 year US Treasury bond plus

622   the long term risk premium for comparison. The simple calculation provides a range from

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[29] Equity Risk Premiums (ERP): Determinants, Estimation and Implications – The 2013 Edition, Updated March 2013, Aswath Damodaran, Stern School of Business, page 29.

623   7.71% to 8.72% with an average of 8.24%. This calculation is slightly higher than the values

624   calculated in the CAPM and has been included as a reasonableness test. This calculation is

625   low compared to the other valuation models and once again is influenced by the current low

626   interest rate environment. The existence of the small cap effect is disputed by some

627   researchers, such as Dr. John Kania.[30] Others, like Brigham and Houston, suggest that the

628   effect might be less than one finds in Ibbotson Associates' publications.[31] Since the

629   additional adjustments are suspect, I have included the CAPM expected market return of

630   8.24% without adjustments for industry or size as one of the factors to calculate a return for

631   Questar Gas. As stated above, the summary and comparison of each valuation model has

632   been included in DPU Exhibit 1.3 DIR

633   **5. Comparable Earnings Analysis**

634   **Q: Can you comment on the comparable earnings model?**

635   A: Yes. I have calculated return on equity for each of the comparable companies from 2004

636   through 2012 along with the 3 and 5 year averages. The return on common equity is

637   calculated as the net profit of each of the comparable companies divided by the value of the

638   common equity. DPU Exhibit 1.11 DIR provides a multi-year comparison of the historical

639   return on equity calculation for the comparable companies and for Questar Gas. Since

640   Questar Gas, Northwest Natural Gas and Piedmont Natural Gas generate nearly all of their

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[30] Kania, John J. "The small firm risk premium remains largely a myth," Shannon Pratt's Business Valuation Update, Vol. 9, No. 11, November 2003. The essence of Dr. Kania's argument is that "smallness" is incorrectly specified as market capitalization, i.e. the market value of a company's stock. When other measures of size such as revenues or total assets are used, the size effect vanishes.

[31] Brigham, Eugene F. and Joel F. Houston, Fundamentals of Financial Management Concise 3rd Ed., Harcourt College Publishers, Orlando FL, 2002.   Brigham and Houston conclude (p. 491) "In general, the cost of equity appears to be one or two percentage points higher for small firms (those with market values less than $20 million) than for large NYSE firms with similar risk characteristics."

641   revenue from natural gas distribution, I have shaded the respective lines for comparison.

642   A comparison of each year indicates that Questar Gas had a lower ROE than the peer group

643   from 2006 through 2010 but had a higher ROE than the peer group in 2011 and 2012. In

644   addition to looking at each year individually, I have provided a three and five year average to

645   help reduce the volatility of a single year. When comparing the longer term ROE, the three

646   year average for Questar Gas is 20 basis points higher than the peer group and is nearly

647   identical for the five year average.

648   The charts included at the bottom of the exhibit provide a visual comparison of the ROE for

649   Questar Gas compared to the peer group average. The annual return for Questar Gas follows

650   a similar pattern to the returns for the comparable companies. This is somewhat comforting

651   in that it suggests that the selected companies are good comparables to use with Questar Gas

652   and that Questar Gas is near the industry average for comparable returns. The second chart

653   on the right is a comparison of the three primary natural gas distribution companies, Questar

654   Gas, Northwest Natural Gas and Piedmont Natural Gas. This has been included to show the

655   more stable earnings pattern for Questar compared to the other natural gas distribution

656   companies. More stable and consistent earnings would generally indicate lower risk for

657   investors.

658   **Q: How does your analysis compare to the comparable earnings model provided by Mr.**

659   **Curtis?**

660   A: The comparable ROE calculations provided by the Company in QGC Exhibit 2.9 includes a

661   slightly different set of comparable companies. As mentioned above, the comparables used

662   in the Company analysis include New Jersey Resources and WGL Holdings and exclude

663   Laclede Group. This different combination of companies calculates an average ROE of

664   10.58% for 2012 compared to the Division's comparable selection and comparable average

665   of 9.99%. The narrative portion of the testimony references a rounded up 10.6% industry

666   average compared to the Questar 10.2 (rounded down from 10.24%) for 2012 and does not

667   comment on any of the other time periods or use a 3 or 5 year average. Based on the

668   information for 2012 only, Mr. Curtis draws the conclusion that the lower return for Questar

669   Gas indicates a higher risk. [32]

670 **Q: Do you agree with the conclusion of the comparable earnings model used by the**

671   **Company?**

672 A: No. Including companies that have a greater percentage of non-utility income and looking at

673   a 10 year average does not provide a comparable earnings analysis for comparison to Questar

674   Gas. I also do not agree that a lower return indicates a higher risk and therefore justifies a

675   higher authorized return. As mentioned above, the Commission authorized rate of return

676   provides the opportunity to earn a fair return but does not guarantee that the Company will

677   earn the specified rate of return.

678   **X. COMMENTS ON COST OF EQUITY RESULTS**

679 **Q: Do you have any other comments about the testimony provided by Mr. Curtis?**

680 A: Yes. The testimony indicates that Questar Gas has slightly higher risk compared to the proxy

681   group and therefore the allowed return should be higher than the average. This statement

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[32] David M. Curtis, page 13, line 338.

682   does not match with what industry analysts have said about the Company concerning the

683   level of risk. The current Standard and Poor's research report dated January, 23, 2013 states

684   the following:

685   The rating on Questar Gas Co. (QGC) reflect the consolidated credit profile of its
686   parent, U.S. natural gas company Questar Corp. (A/Stable A-1). The ratings on
687   Questar Corp. include what Standard and Poor's Rating Services considers an
688   "excellent" business risk profile and an 'intermediate" financial risk
689   profile…..Supportive regulation, a growing service area with a mostly residential
690   customer base, low operating risks and lack of competition characterize the
691   utility's excellent business risk profile. The business risk profile also benefits
692   from strong access to gas supply and storage and from its relationship with
693   Wexpro, the company's cost-of-service exploration and production operation that
694   provides natural gas to the QGC utility at cost plus a fixed return.

695   QGC's constructive relationship with the Utah Public Service Commission, which
696   covers more than 95% of its customer base, has resulted in a supportive rate
697   design that provides stable cash flows largely insulated from fluctuations in gas
698   prices, weather, and usage. QGC also has a decoupling mechanism and an
699   infrastructure tracker to recover about $45 million per year associated with
700   replacement of high-pressure feeder lines. Its relationship with Wexpro, which
701   minimizes gas supply risk with cost-of-service natural gas reserves, provides an
702   operational advantage over other gas utilities. [33]

703   Based on the evaluation from Standard and Poor's and the comparable earnings evaluation, I

704   believe Questar Gas has similar to lower risk than other natural gas distribution companies.

705 **Q: Does your analysis imply that Questar Gas deserves a premium cost of equity compared**

706   **with the average of the comparable companies?**

707 A: No, there is no such indication.

708 **Q: Do you have any comments on the CET calculation proposed by the Company?**

709 A: Yes. The Conservation Enabling Tariff (CET) is based on the forecast DNG revenue in the

710   GS customer class. The calculation is based on the projected monthly revenue divided by the

---

[33] Standard & Poor's Research, Questar Gas Co., January 23, 2013.

711   projected number of customers in each month of the test year. A calculation of the CET has

712   been included in the testimony of Mr. Summers but is based on the revenue requirement

713   proposed by the Company. If the Commission approves a revenue requirement that is

714   different than the original application, a revised CET will need to be calculated.

715   **VIII. CONCLUSIONS AND RECOMMENDATIONS**

716   **Q: What conclusions have you reached with respect to cost of equity?**

717   A: The first conclusion is that the DCF models using the Value Line growth forecasts form a

718   reasonable basis for a cost of equity estimate. There is a significant difference in the DCF

719   calculation using the Reuter, Zacks and Yahoo average growth factor of 4.84% compared to

720   the 6.43% average comparable growth factor from Value Line. I have used the higher Value

721   Line growth rate to calculate the ROE for Questar Gas, which has increased the

722   recommended ROE. The results from the two stage DCF model were similar to the single

723   stage and were heavily influenced by the selection of the Value Line growth rates. The

724   CAPM model including the size and industry adjustments did not add to the analysis and

725   appeared to be on the low end of the reasonable range. The unadjusted risk premium model

726   provides some support for the recommendation but appears to be low in relation to the other

727   models. The comparable earnings model provides good comparison with the average return

728   for the selected companies near the historical return for Questar Gas. In averaging the results

729   of the various models, I have calculated a range from 7.93% to 11.46% with an average of

730   9.44%. This supports my recommendation that the appropriate cost of equity for Questar

731   Gas is 9.45%.

- 35 -

732 **Q: How does your recommendation compare with other commission decisions?**

733 A: DPU Exhibit 1.4a is a summary of the rate case decisions for natural gas companies from

734   2010 through 2013. DPU Exhibit 1.4b is a slight modification of QGC Exhibit 2.10. While

735   the information for 2010 – 2012 is the same, I have added the 2013 commission decisions

736   and included a trend line. The trend line indicates that the authorized ROE has been moving

737   lower. As mentioned previously, for the first nine months of 2013, the highest allowed ROE

738   was 9.80% and the average was 9.51%. This is lower than the 9.93% average for 2012 and

739   indicates a downward trend.

740   The Division recommended ROE of 9.45% for Questar Gas is lower than the 9.80% currently

741   authorized by the Utah Commission for PacifiCorp. The difference between the two

742   companies is appropriate given the different time periods and the different level of risk.

743   While the recommended ROE is lower than the amount the Company requested, it is

744   noticeably and appropriately higher than the 9.16% authorized for Questar Gas by the

745   Wyoming Commission.

746 **Q: Please discuss some of the implications of your weighted cost of capital estimate and**

747   **specifically your cost of equity estimate.**

748 A: In arriving at a decision on cost of capital the Commission needs to consider principles and

749   issues set forth in the well known U.S. Supreme Court decisions commonly referred to as the

750   Bluefield[34] and Hope[35] cases. I am not an attorney, so I will discuss these cases from

751   economic and financial points of view.

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[34] Bluefield Water Works and Improvement Company v. Public Service Commission of the State of West Virginia, 262 U.S. 679 (1923).
[35] Federal Power Commission v. Hope Natural Gas Company, 320 U.S. 591 (1942).

752   The Bluefield and Hope cases established economic and financial principles for proper

753   regulation. These principles included: (1) that the utility be allowed to earn a return on its

754   utility property generally equal to returns earned by other companies of similar risk; (2) this

755   return should assure confidence in the financial soundness of the utility; (3) this allowed

756   return should maintain and support the credit of the company and allow it to attract capital;

757   (4) recognition that a return that is "right" at one time may become high or low by changes in

758   the economy regarding alternative investments; and (5) particularly in Hope, what is

759   important is that the "end result" of the rate order be just and reasonable—it is less important

760   how that result is achieved.

761   **Q: Do you believe your conclusions and recommendations arrive at a just and reasonable**

762   **result that is in the public interest?**

763   A: Yes. The capital structure as proposed by the Company is consistent with historical levels

764   and is similar to the levels of the comparable companies.   The cost of debt has been provided

765   by the Company and has been confirmed by the recent issue of new long term debt. It is

766   assumed that any future debt will be issued at the current market rates at the time of issuance.

767   I have demonstrated that my cost of equity estimates are calculated using standard financial

768   models and using comparable company information. The Division's recommended ROE has

769   also been compared to the recent decisions for natural gas distribution companies in other

770   jurisdictions.

771   **Q: Can you summarize your final conclusion and recommendation?**

772   A: Based on my analysis, I believe that the appropriate cost of equity for Questar Gas is 9.45%

773   with an overall weighted average cost of capital of 7.44%. I believe that the cost of capital

774   estimate is just and reasonable and in the public interest.

775   **Q: Does this conclude your testimony?**

776   A: Yes.