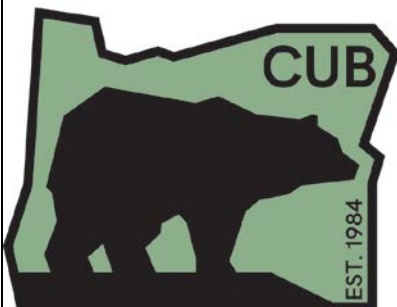


**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON
LC 68**

In the Matter of)
)
IDAHO POWER COMPANY,)
)
2017 Integrated Resource Plan.)
_____)

**OPENING COMMENTS OF THE
OREGON CITIZENS' UTILITY BOARD**

October 31, 2017



**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

LC 68

In the Matter of)	
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IDAHO POWER COMPANY,)	OREGON CITIZENS' UTILITY
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2017 Integrated Resource Plan.)	
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I. INTRODUCTION

The Oregon Citizens' Utility Board (CUB) files these initial comments on Idaho Power Company's (Idaho Power or the Company) 2017 Integrated Resource Plan (IRP or Plan), filed on June 30, 2017. CUB will continue to conduct discovery and review the Company's plan prior to submission of Final Comments. CUB has decided to address one issue in its initial comments: the Company's Portfolio Analysis Results.

II. INCONCLUSIVE PORTFOLIO ANALYSIS

Idaho Power has reviewed twelve different resource portfolios for the IRP.¹ Each resource portfolio was produced based on planning case conditions. The planning case conditions assumed the same natural gas price, hydroelectric production, and system load conditions. The Company modeled 100 iterations of each portfolio to account for varying levels of endogenous and exogenous risk.

¹ LC 68 – Idaho Power 2017 Resource Plan, p. 97.

Based on its risk and cost portfolio analysis, Idaho Power has selected Portfolio 7 (P7) as its preferred portfolio. Portfolio 7 calls for the construction of the Boardman to Hemmingway Transmission Line (B2H) in 2026; installation of reciprocating engines in 2031, 2032, 2035 and 2036; and a Combined-Cycle Combustion Turbine in 2033.² Additionally, this portfolio enables Jim Bridger units 1 and 2 to operate until 2032 and 2028, respectively.

Idaho Power has stated that “the B2H-based P7 *consistently* outperformed the other portfolios in the cost analysis.”³ CUB is unable to find evidence that *consistently* supports that statement. When ranking the variable costs of each portfolio, Portfolio 7 is ranked ninth for cost. When ranking the new resource fixed costs of each portfolio, Portfolio 7 is ranked third for cost. Portfolio 7 is ranked first in lowest total cost compared to all other portfolios.

The company has previously stated that a 1.6 percent difference in total cost is a relatively small difference.⁴ During the portfolio analysis of this IRP, there is only a 0.04 percent difference in the total cost of Portfolio 4 and Portfolio 7.⁵ There is a small difference in total portfolio cost between Portfolio 4 and Portfolio 7.

Idaho Power used a factorial experimental design to compare the portfolio options. The Company claims that the factorial design supports Portfolio 7 as the preferred portfolio.⁶ Idaho Power is correct in stating that the averages for the B2H level and 2032 (Unit 1) and 2028 (Unit 2) level are lowest average cost. However, while this statement is true, the averages are not

² LC 68 – Idaho Power 2017 Resource Plan, p.103.

³ LC 68 – Idaho Power 2017 Resource Plan, p.133.

⁴ LC 63- Idaho Power Company’s Reply Comments, p.8, lines 21-22.

⁵ Both Portfolio 4 and Portfolio 7 include the construction of B2H. The difference between the two resources portfolios is the retirement date of Jim Bridger Unit 1 and 2. Portfolio 4 is the second lowest portfolio based on total cost. When ranking the variable costs of each portfolio, Portfolio 4 is ranked eleventh for cost. When ranking the new resource fixed costs of each portfolio, Portfolio 4 is ranked second for cost. Additionally, Portfolio 4 and 7 had identical qualitative risk scores.

⁶ See LC 68 – IPC’s Attachment to CUB’s DR 3.

statistically different.⁷ Based on the company's ANOVA, CUB is unable to distinguish between the cost options of the various Jim Bridger Unit options.

The use of a factorial experimental design is unusual in the integrated resource planning process. Idaho Power uses the term "factorial experimental design" to describe their methodology for resource planning. The Company is unaware of any utility using this design for resource planning.⁸

Jim Bridger Unit 1 and 2 is jointly owned between PacifiCorp and Idaho Power. In PacifiCorp's 2017 IRP's preferred portfolio a retirement date of Jim Bridger Unit 1 is assumed to be at the end of 2028 and Jim Bridger Unit 2 at the end of 2032.⁹ Since PacifiCorp is the principal owner of Jim Bridger, Idaho Power likely has reason to retire the coal unit at the same time as PacifiCorp. Portfolio 7 could be preferred compared to Portfolio 4 due to the retirement dates of Jim Bridger matching PacifiCorp's expected retirement dates. In this case, Idaho power should explain the risk of having a different retirement date for Jim Bridger than the principal owner.

III. CONCLUSION

CUB is not convinced by the portfolio analysis. Based on the factorial experimental design results, CUB is unable to conclude which resource portfolio is least cost. CUB seeks additional explanation from the Company regarding resource portfolio selection.

⁷ See LC 68 – IPC's Attachment to CUB's DR 3, worksheet "ANOVA Table", Cell F4. Based on the p value, one should fail to reject the null hypothesis that the means of the Treatment of Jim Bridger 1 and 2 are equal. If one was to accept a p value of this size, there is a risk of a large type I error.

⁸ See LC 68 – Idaho Power's Response to Staff's Data Request No. 31.

⁹ LC 67 – PacifiCorp 2017 Integrated Resource Plan, p.7.
See <http://edocs.puc.state.or.us/efdocs/HAA/lc67haa102643.pdf>

Signed this 31st of October, 2017.

A handwritten signature in black ink, appearing to read "William Gehrke". The signature is fluid and cursive, with the first name being more prominent.

William Gehrke, Economist
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