

Appendix B20

Benefit Cost Analysis

1-Q24-063-Application Set

Canyon Peak Power Arapahoe County 1041/USR Application Q24-063



ENVIRONMENTAL CONSULTANTS

Sound Science. Creative Solutions.®

295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021
Tel 303.487.1183
www.swca.com

TECHNICAL MEMORANDUM

To: Canyon Peak Power LLC ("Canyon Peak")

c/o Kindle Energy
500 Alexander Park Drive, Suite 300
Princeton, New Jersey 08540

From: Clint Hinebaugh, SWCA Project Manager; Dr. Jeff Wakefield, SWCA Director of Economics;
and Oliver Pahl, SWCA Economist

Date: December 13, 2024

Re: **Canyon Peak Benefit Cost Analysis / SWCA Project No. 94828**

INTRODUCTION

On behalf of Canyon Peak (the Applicant), SWCA Environmental Consultants (SWCA) has prepared a benefit/cost analysis for a 156-megawatt natural gas peaking power plant and an associated 4-mile natural gas pipeline in Arapahoe County, Colorado (Project). The analysis consists of a qualitative narrative that identifies the distribution of the burden of the cost for the proposed improvements, including cost to adjacent state or local jurisdictions (Arapahoe County) and a description of the Project benefits in the local community.

The purpose of the document is to address the requirements in Section III.C.19 of the Regulations Governing Areas and Activities of State Interest in Arapahoe County (1041 Regulations) (the Regulations).

OVERVIEW

Arapahoe County is located directly southeast of the City of Denver. The western portions of the county are contained within the Denver metro area and are characterized by high population density and economic activity that is tied to the metro area, whereas eastern portions of the county are more rural, with lower population density and an agriculture and resources-based economy.

Population

As reported in Table 1, between 2010 and 2022 the population of Arapahoe County grew by over 100,000 people which is at a slightly higher rate (18.4%) than the State of Colorado as a whole (18.1%) over the same period. A growing population is an indication of a healthy economy, whereas a declining or stagnant population may be an indication of limited economic opportunity.

Table 1. Population in Arapahoe County and the State of Colorado

Indicator	Arapahoe County, Colorado	State of Colorado
Population (2022)	654,453	5,770,790
Population (2010)	552,860	4,887,061
Population Change (2010-2022)	101,593	883,729
Population Pct. Change (2010-2022)	18.4%	18.1%

Source: U.S. Department of Commerce (2023).

Employment and Income

Table 2 reports the unemployment rate and employment by industry for Arapahoe County and Colorado. The unemployment rate and the distribution of employment across industries in Arapahoe County closely mirrors those same measures for the State of Colorado, reflecting its similar mix of metro and rural areas. Employment across a mix of industries may make the economy more resilient, whereas an economy that is overly focused on one or two industries may be more susceptible to natural disasters, shifting climate patterns, or downturns in particular industries.

Table 2. Employment in Arapahoe County and the State of Colorado

Indicator/Industry	Arapahoe County, Colorado	State of Colorado
Unemployment Rate (October 2024)	4.3%	4.4%
Civilian employees > 16 years, 2022	354,417	3,021,742
Ag, forestry, fishing & hunting, mining	3,086 (0.9%)	60,923 (2.0%)
Construction	27,290 (7.7%)	242,997 (8.0%)
Manufacturing	21,060 (5.9%)	211,254 (7.0%)
Wholesale trade	8,525 (2.4%)	68,521 (2.3%)
Retail trade	35,483 (10.0%)	316,358 (10.5%)
Transport, warehousing, and utilities	22,980 (6.5%)	153,707 (5.1%)
Information	12,022 (3.5%)	80,778 (2.7%)
Finance and ins, and real estate	33,048 (9.3%)	218,531 (7.2%)
Prof, mgmt, admin, & waste mgmt	53,453 (15.1%)	449,496 (14.9%)
Edu, health care, & social assistance	75,783 (21.4%)	649,785 (21.5%)
Arts, entertain, rec, accomod, & food	31,657 (8.9%)	286,220 (9.5%)
Other services, except public admin	15,662 (4.4%)	146,294 (4.8%)
Public administration	14,368 (4.1%)	136,878 (4.5%)

Source: U.S. Bureau of Labor Statistics (2024); U.S. Department of Commerce (2023).

As indicated in Table 3, Arapahoe County has a slightly higher per capita income and median household income than the State of Colorado as a whole, and Arapahoe County has a slightly lower percentage of people and families below poverty.

Table 3. Income in Arapahoe County and the State of Colorado

Indicator	Arapahoe County, CO	State of Colorado
Per Capita Income (2022 dollars)	\$49,530	\$47,346
Median Household Income (2022 dollars)	\$92,292	\$87,598
People Below Poverty	8.0%	9.6%
Families Below Poverty	5.4%	6.0%

Source: U.S. Department of Commerce (2023).

Regional Gross Domestic Product

Table 4 shows the total economic value added, or gross domestic product (GDP), in Arapahoe County and the State of Colorado by industry. Similar to the description of employment across industries, economic activity across a range of industries makes the economy more resilient against boom-and-bust cycles or individual economic shocks.

Table 4. Gross Domestic Product in Arapahoe County and the State of Colorado

Industry	Arapahoe County, Colorado	State of Colorado
Ag, forestry, fishing & hunting, mining ¹	\$558,739,000	\$22,003,489,000
Construction	\$3,874,039,000	\$31,503,911,000
Manufacturing	\$1,481,515,000	\$28,063,051,000
Wholesale trade	\$5,325,185,000	\$29,761,787,000
Retail trade	\$4,424,263,000	\$30,789,430,000
Transport, warehousing, and utilities ²	\$1,193,306,000	\$25,276,113,000
Information	\$6,258,573,000	\$31,116,363,000
Finance and ins, and real estate	\$14,580,337,000	\$110,533,234,000
Prof, mgmt, admin, & waste mgmt	\$12,464,358,000	\$84,157,433,000
Edu, health care, & social assistance	\$5,490,520,000	\$36,064,114,000
Arts, entertain, rec, accomod, & food	\$2,747,534,000	\$29,125,724,000
Other services, except public admin	\$1,327,547,000	\$12,173,239,000
Public administration	\$4,597,302,000	\$59,058,634,000
Total	\$64,323,218,000	\$529,626,520,000

Source: U.S. Bureau of Economic Analysis (2023).

¹ To align industry classifications reported by the U.S. Bureau of Economic Analysis with the U.S. Census Bureau data reported in Table 2, "Agriculture, forestry, fishing and hunting" and "Mining, quarrying, and oil and gas extraction" are combined into "Ag, forestry, fishing & hunting, mining" here.

² To align industry classifications reported by the U.S. Bureau of Economic Analysis with the U.S. Census Bureau data reported in Table 2, "Transportation and warehousing" and "Utilities" are combined into "Transport, warehousing, and utilities" here.

Government Revenues

Table 5 shows a summary of Arapahoe County revenues as reported in their 2023 *Annual Comprehensive Financial Report* (Arapahoe County 2023). Property taxes make up the County's largest source of revenues.

Table 5. Arapahoe County 2023 Revenues

Revenue Source	2023 Revenue
<i>Program Revenues</i>	
Charges for services	\$77,033,285
Operating grants and contributions	\$155,413,794
Capital grants and contributions	\$16,800,771
<i>General Revenues</i>	
Property taxes	\$198,447,336
Sales tax	\$40,581,448
Other taxes	\$12,238,239
Investment income	\$22,012,769
Other revenues	\$6,648,651
Total Revenues	\$529,176,293

Source: Arapahoe County (2023).

PROJECT COSTS

This analysis is conducted from the perspective of Arapahoe County and the State of Colorado. In private actions such as the Project, indirect effects have the potential to exert costs on neighboring properties and/or local governments. This analysis reviews the potential for costs associated with reduced value of nearby property, reduced productivity of land used for the Project, increased demand for public services, and increased demand for water and utilities.

Direct costs associated with the Project are borne by the Applicant and so are not part of the benefit/cost analysis.

Property Values

Some energy infrastructure developments function as disamenities (Brinkley and Leach 2019) and so reduce the value of surrounding properties. Disamenities are often related to noise (Nelson 2008; Sklarz and Miller 2018) and views (Bourassa et al. 2004; Sander and Polasky 2009).

- A. In evaluating the potential for a material viewshed-related disamenity, SWCA notes that the Project site includes an existing switchyard and the Project would not significantly alter the existing viewshed. This makes it unlikely that surrounding property values would be impacted by an altered view.
- B. In considering the potential for noise-related disamenities, SWCA notes that the Project is located in a sparsely populated area characterized by the existing switchyard surrounded primarily by farmland. Two residences have been identified within approximately 0.5 mile of the proposed noise-generating equipment. Noise impacts would dissipate over the 0.5 mile and the Applicant plans to further mitigate potential noise impacts using baffles for sound attenuation.

Given A and B above, any resulting impacts on property values of neighboring parcels are expected to be minimal and are not likely to affect assessed values or property tax revenues.

Land Use Changes

The removal of land from productive uses such as agriculture has the potential to reduce economic activity and total GDP in the county. The proposed Project would not remove any actively farmed land from production nor would it materially alter any other productive land uses.

Demand for Public Services

The proposed Project would support a peak construction workforce of up to 140 workers. An influx of construction workers has the potential to increase demand for publicly provided services such as emergency services or local schools. However, Arapahoe County has a significant construction industry (see Table 2), and the Project is located within commuting distance of the Denver metro area which would likely result in most construction jobs being filled by local workers.

During operation, up to 12 employees would be required on-site in Arapahoe County.

Noting that both the construction and operational workforces represent less than 0.1% of the total county population and that most construction-related jobs are expected to be filled by individuals who would not be relocating into the area, material increases in the demand for public services are not expected.

PROJECT BENEFITS

The proposed Project would convey a number of benefits to the local area and to Arapahoe County. Project spending would generate state and local tax revenues and support local construction and supply businesses; project hiring would support local construction workers; and the development of critical energy infrastructure would enhance the local and regional energy grid reliability and increase the local tax base value.

Total Project Spending

Total construction expenditures for the Project are estimated at approximately \$290 million. While much of the project spending would include the purchase of plant equipment from sources outside the region, purchases destined for Arapahoe County may be subject to state and county sales taxes, bringing in significant revenues. The Project falls in the unincorporated area of Arapahoe County with estimated sales taxes of 2.9% for the State of Colorado, 0.1% for the Scientific and Cultural Facilities District, and 0.25% for Arapahoe County (Arapahoe County 2024).

Local Employment and Income

During construction the Project is expected to support an average of 110 workers, most of whom are expected to be drawn from within the local area. Labor expenditures are estimated to total approximately \$33 million, much of which would be captured by local general contractors and construction workers. During operation of the Project, up to 12 workers would be required in Arapahoe County with labor expenditures of up to \$1.2 million annually. As local workers spend some portion of their incomes locally, additional benefits would flow to the county as the local businesses patronized by Project workers experience increased activity and so pay increased sales taxes.

Local Spending and Purchases

While plant equipment would be purchased outside the region, some construction materials and equipment are likely to be sourced locally to the extent practical. During operation of the Project, annual

non-labor expenses are estimated to total approximately \$2.8 million. These local purchases would further support the county's economy and businesses.

Related Government Revenues and Taxes

As discussed in the preceding text, construction-related expenditures would temporarily increase sales tax revenues at the state and county levels. Additional revenues would be generated during construction and operation of the Project at the state level through Colorado's individual income tax, which is 4.4% (Colorado Department of Revenue 2024). The sizeable total investment of approximately \$290 million in the energy infrastructure within Arapahoe County would also increase the total assessed value subject to state and county property taxes into the future.

COMPARISON OF COSTS AND BENEFITS AND CONCLUSIONS

As described throughout this memo, the Project offers material benefits to the State of Colorado and Arapahoe County in the form of increased economic activity and tax revenue while imparting little or no cost to the state or county.

The benefits of the Project would be felt broadly across the local economy, including: 1) a large temporary stimulus to the construction industry; 2) secondary stimulus through the purchases of materials and equipment as well as the expenditure of wages by employees during both construction and operation; and 3) the generation of government revenues through sales, income, and property taxes.

REFERENCES CITED

- Arapahoe County. 2023. Annual Comprehensive Financial Report, Year Ended December 31, 2023. Arapahoe County Department of Finance. Available at: <https://www.arapahoeco.gov/Finance/2023%20Arapahoe%20County%20Annual%20Comprehensive%20Financial%20Report%20Web.pdf>. Accessed December 2024.
- Arapahoe County. 2024. ArapaMAP Version 3.10.1. Sales Tax: 2024 Combined Sales Tax Rates for Arapahoe County. Available at: <https://gis.arapahoegov.com/mapsandphotos/salestaxrates.pdf>. Accessed December 2024.
- Bourassa, S.C., M. Hoesli, and J. Sun. 2004. What's in a View? *Environment and Planning A: Economy and Space* 36(8):1427–1450. <https://doi.org/10.1068/a36103>.
- Brinkley, C., and A. Leach. 2019. Energy next door: a meta-analysis of energy infrastructure impact on housing value. *Energy Research & Social Science*, Volume 50, 2019, Pages 51–65. ISSN 2214-6296. <https://doi.org/10.1016/j.erss.2018.11.014>.
- Colorado Department of Revenue. 2024. Taxation Division. Individual Income Tax, Frequently Asked Questions. Available at: <https://tax.colorado.gov/individual-income-tax-FAQ>. Accessed December 2024.
- Nelson, J.P. 2008. Hedonic Property Value Studies of Transportation Noise: Aircraft and Road Traffic. In *Hedonic Methods in Housing Markets*, edited by A. Baranzini, J. Ramirez, C. Schaerer, and P. Thalmann. Springer, New York. https://doi.org/10.1007/978-0-387-76815-1_4.
- Sander, H.A., and S. Polasky. 2009. The value of views and open space: Estimates from a hedonic pricing model for Ramsey County, Minnesota, USA. *Land Use Policy* 26(3):837–845. ISSN 0264-8377. <https://doi.org/10.1016/j.landusepol.2008.10.009>.
- Sklarz, M., and N. Miller. 2018. The Impact of Noise on Residential Property Value. Collateral Analytics Research. September 20, 2018.
- U.S. Bureau of Economic Analysis. 2023. Regional Data: GDP and Personal Income. Interactive Data Tables: Table CAGDP2 for Arapahoe County, CO and Colorado, Year = 2023. Available at: https://apps.bea.gov/itable/?ReqID=70&step=1&_gl=1*11au4ek*_ga*MTEzNTg0MzI2Ny4xNjc4NDY2NDg4*_ga_J4698JNNFT*MTczMzc2Mzk0MS4zNC4xLjE3MzM3NjQxMjUuNTMuMC4w. Accessed December 2024.
- U.S. Bureau of Labor Statistics. 2024. Local Area Unemployment Statistics. Tables: Employment Status of the Civilian Noninstitutional Population by State; Labor Force Data by County, not seasonally adjusted, latest 14 months. Available at: <https://www.bls.gov/lau/tables.htm>. Accessed December 2024.
- U.S. Department of Commerce. 2023. Census Bureau, American Community Survey Office, Washington, D.C. As reported in Headwaters Economics' Economic Profile System at <https://headwaterseconomics.org/apps/economic-profile-system/>.