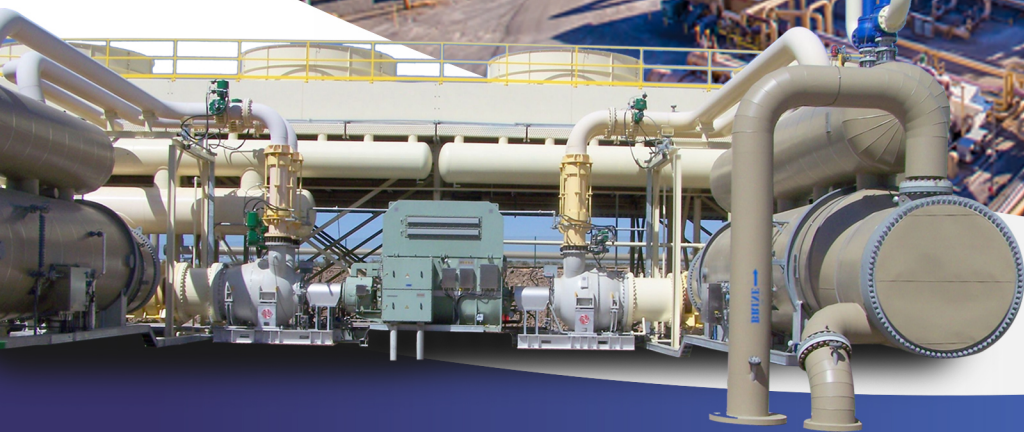


# STEAMBOAT HILLS REPOWER ECONOMIC AND FISCAL IMPACT ASSESSMENT



January 14, 2019

Mr. Paul Thomsen  
Executive Director, Government and Regulatory Affairs  
Ormat Technologies, Inc.  
6140 Plumas Street  
Reno, NV 89519

**RE: Economic and Fiscal Impact Analysis | Steamboat Hills Repower**

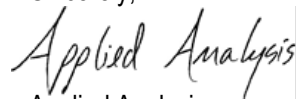
Dear Mr. Thomsen:

In accordance with your request, Applied Analysis (“AA”) is pleased to submit this *Economic and Fiscal Impact Analysis: Steamboat Hills Repower*. AA was retained by Ormat Technologies, Inc. (“Ormat” or the “Company”) to review and analyze the economic and fiscal impacts associated with its proposed Steamboat Hills Repower project in Reno, Nevada. This summary report outlines the salient findings and conclusions of our review and analysis.

This report was designed by AA in response to your request. However, we make no representations as to the adequacy of these procedures for all your purposes. Generally speaking, our findings and estimates are as of our last date of fieldwork (December 19, 2018) and utilize the most recent data available. The information provided in this summary, and the conclusions reached herein, are based on the findings of our research and our knowledge of the market as of the date of this report. Our report contains economic, financial and other predominant market data. This information was collected from publicly available reports, our internal databases and various third parties, including the Company. The data were assembled by AA. While we have no reason to doubt its accuracy, the information collected was not subjected to any auditing or review procedures by AA; therefore, we can offer no representations or assurances as to its completeness.

This report is an executive summary. It is intended to provide an overview of the analyses conducted and a summary of our salient findings. AA will retain additional working papers relevant to this study. If you reproduce this report, it must be done so in its entirety. We welcome the opportunity to discuss this report with you at any time. Should you have any questions, please contact Jeremy Aguero or Brian Gordon at (702) 967-3333.

Sincerely,

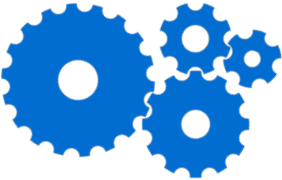


  
Applied Analysis

# SUMMARY OF FINDINGS



# Summary of Findings

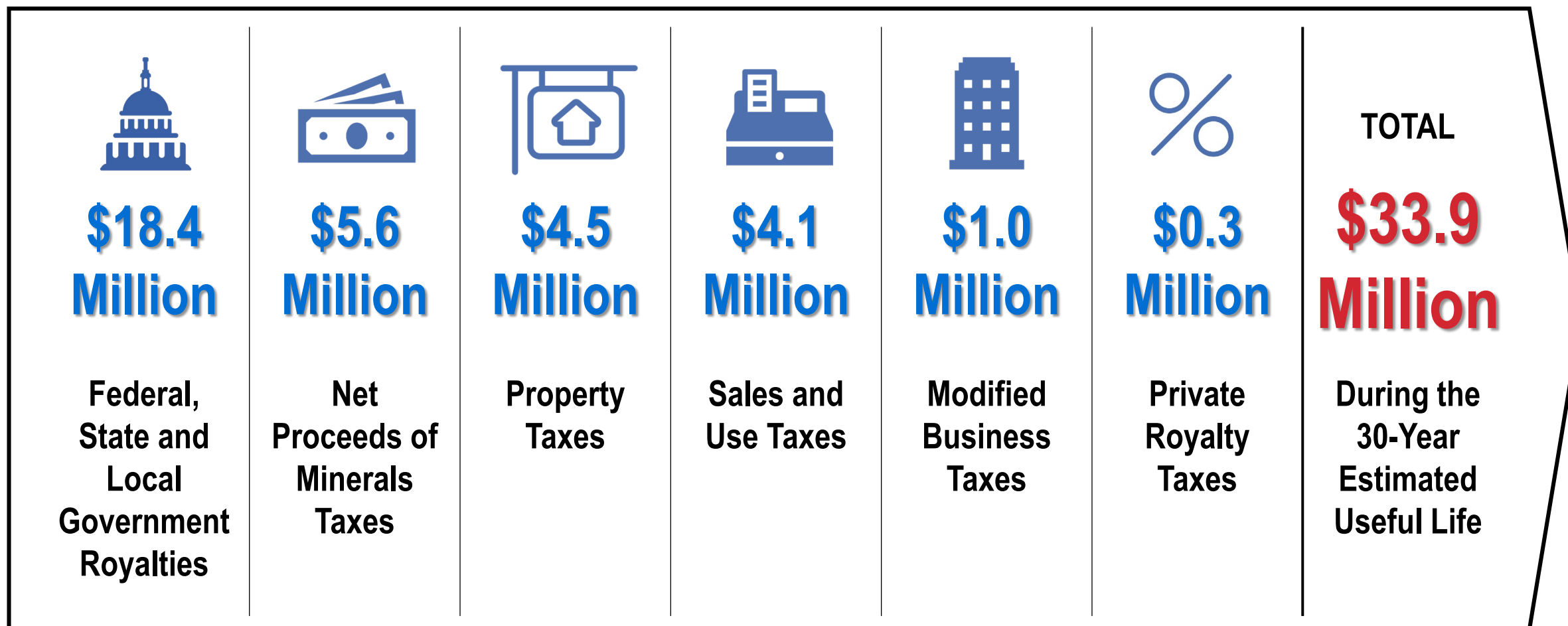
## Economic Impacts

	One-Time, Construction Impacts	Annual, Recurring Operations Impacts
 <b>Economic Output</b> Impact on Total Spending	<b>\$60.8 Million</b>	<b>\$31.9 Million</b>
 <b>Wages and Salaries</b> Impact on Personal Incomes	<b>\$23.0 Million</b>	<b>\$3.5 Million</b>
 <b>Employment</b> Impact on the Number of Jobs	<b>453</b>	<b>81</b>

Note: Employment impacts during the construction phase are stated in person-years of employment (i.e., one person employed full time for one year).

# Summary of Findings

## Fiscal (Public Revenue) Impacts



Note: Public revenue impacts reflect the one-time, construction-related impacts and annual, recurring impacts of operations over the life of the project.

# PROJECT BACKGROUND



# About Ormat

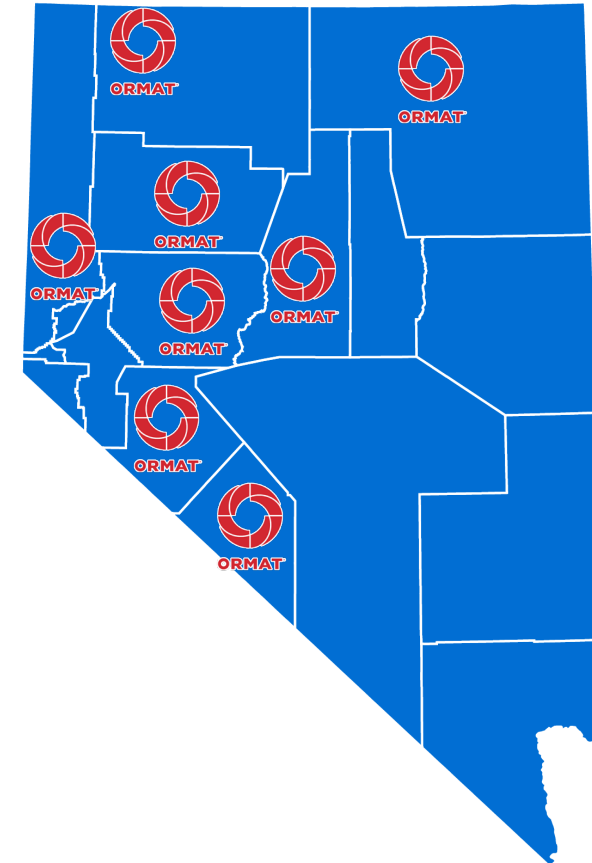
- Founded in 1965, Ormat has decades of experience in the industry developing clean, dependable and renewable geothermal resources, building power plants and delivering thousands of megawatts in over 30 countries
- Employs more than 1,300 people
- Two core lines of business:
  - Generation of electricity via renewable sources
  - Production and distribution of power plant equipment
- Built or supplied equipment for 150 power plants worldwide (with thousands of megawatts) in countries including Honduras, Guatemala, Guadeloupe, Indonesia and Kenya



**ORMAT**®

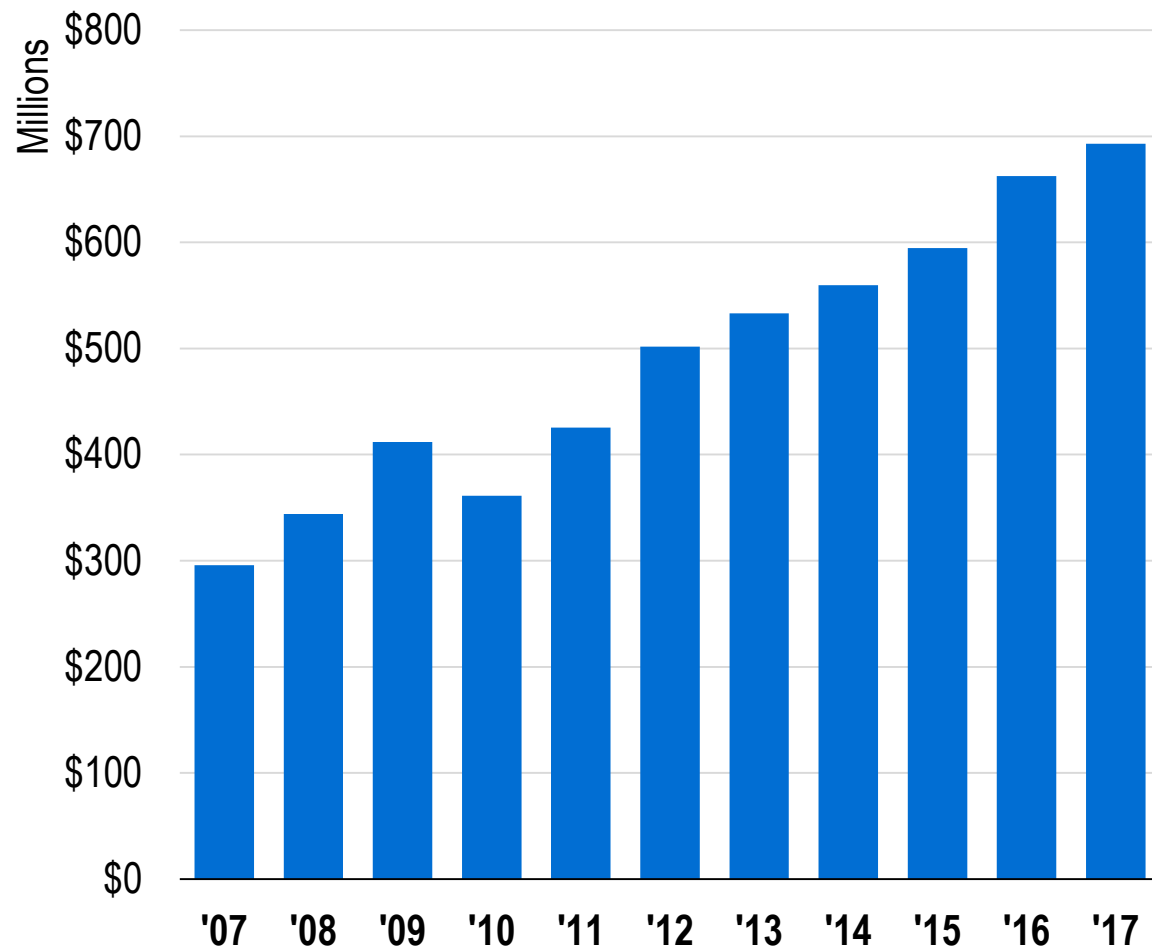
# Ormat in Nevada

- Headquartered in Reno, Nevada
- New York Stock Exchange Ticker: ORA
- Developed its first geothermal facility in Wabuska during the 1980s
- Significant investments, including seven geothermal energy facilities and nearly twenty exploration/development projects throughout the state
- Just completed construction of the 48 MW Phase 3 McGinness Hills geothermal project in Austin, NV (Lander County)

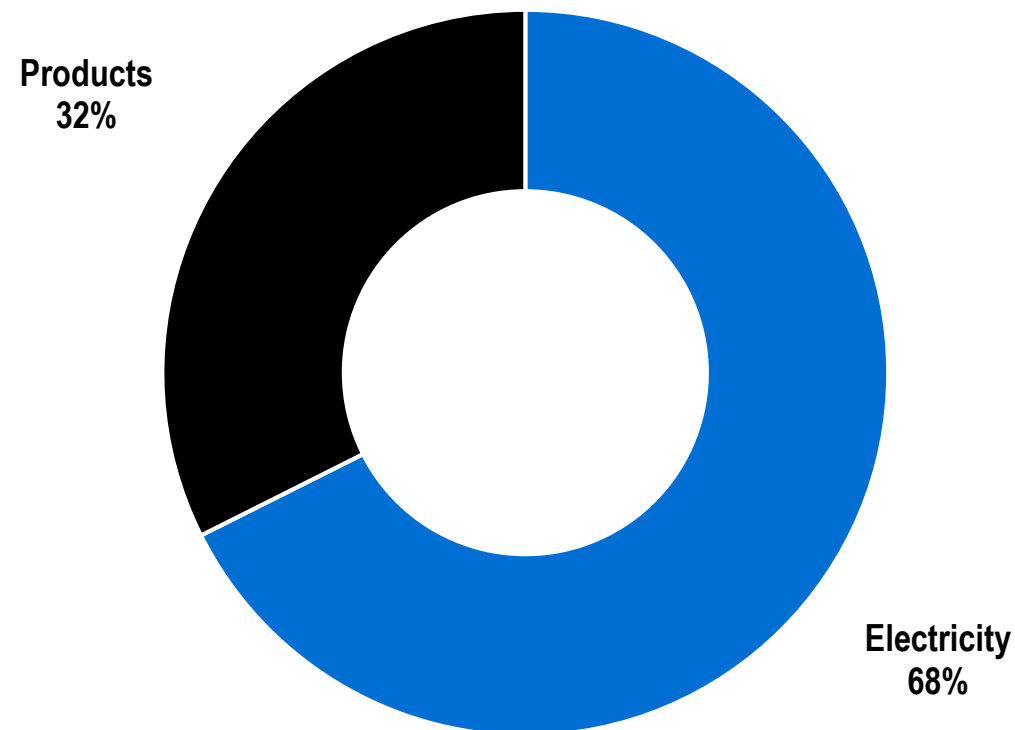




# Ormat Total Revenue (NYSE: ORA)



2017 Revenues by Segment



Source: U.S. Securities & Exchange Commission

# Steamboat Hills Complex Facility History

- The Steamboat Hills Plant was originally constructed in 1988
- Total generating capacity of 70MW (enough to power 70,000 homes)
- Consists of
  - Six power plants
  - 25 production wells
  - 12 injection wells
- Major equipment includes
  - Nine air-cooled Ormat energy converters
  - One water-cooled Ormat energy converter
  - One steam turbine



# Scope of the Repower Project

- The Repower project is expected to replace one steam turbine, one water-cooled unit and a joint cooling tower
- The project leverages existing wells, but it is programmed to develop two additional wells to support the project's operations
- The project consists of four major elements: (1) drilling, (2) construction of a gathering system, (3) construction of a transmission line/substation and (4) construction of the plant itself
- All phases of construction are estimated to be complete in 2019, with the facility commencing commercial operations in 2020

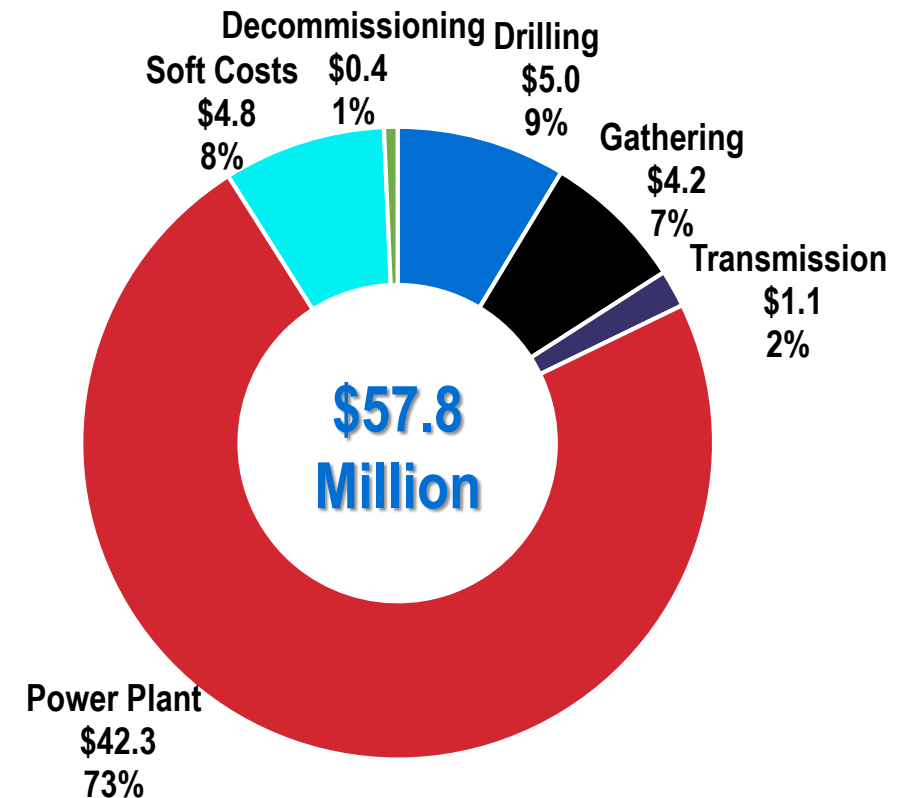


Steamboat Hills Repower Project Sites (red); Source: Ormat Technologies, Inc.

# Capital and Operating Costs of the Repower Project

- Construction of the new facility will cost approximately \$57.8 million including:
  - Drilling - \$5.0 million
  - Gathering system development - \$4.2 million
  - Transmission system development - \$1.1 million
  - Plant construction - \$42.3 million
  - Soft costs - \$4.8 million
  - Decommissioning - \$0.4 million
  
- Annual operating costs for the facility are estimated to total \$6.1 million at stabilization

**Steamboat Hills Repower Construction Costs (Millions)**



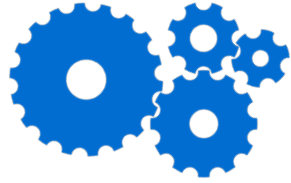


# METHODOLOGY

## MEASURING ECONOMIC IMPACTS

# Economic Impact Analysis

## Types of Impacts



**Economic Output**  
Impact on Total Spending



**Wages and Salaries**  
Impact on Personal Incomes



**Employment**  
Impact on the Number of Jobs

### Direct Impacts

Impacts generated by Steamboat Hills Repower

### Indirect Impacts

Secondary impacts generated by suppliers of Steamboat Hills Repower

### Induced Impacts

Sourced to businesses that are supported by the spending of direct employees

### Total Impacts

The sum of direct, indirect and induced impacts

# Economic Impact Analysis

## Methodology

### IMPLAN Model

- 1 of 3 nationally recognized impact analysis software tools
- Developed by Minnesota IMPLAN Group, Inc. and used by more than 1,000 public and private institutions
- IMPLAN is an input-output model that utilizes complex economic equations to explain how the “outputs” of one industry become the “inputs” of others, and vice versa
- This relationship is sometimes referred to as the “multiplier effect”, illustrating how changes in one sector of the economy can affect other sectors

# Economic Impact Analysis

## Methodology

### Limitations and Assumptions

- Input-output models, as is the case with all econometric models, are not without their limitations; the statistical model used in this analysis, IMPLAN, for example, assumes that capital and labor are used in fixed proportions
- This means that for every job created or lost, a fixed change in investment, income and employment results
- In reality, developers, consumers and governments respond to stimuli in complex ways, including changing the mix of capital or labor as well as the types and frequencies of investment
- Importantly, each impacting force has its own unique characteristics, affecting how consumers and businesses respond to the given change

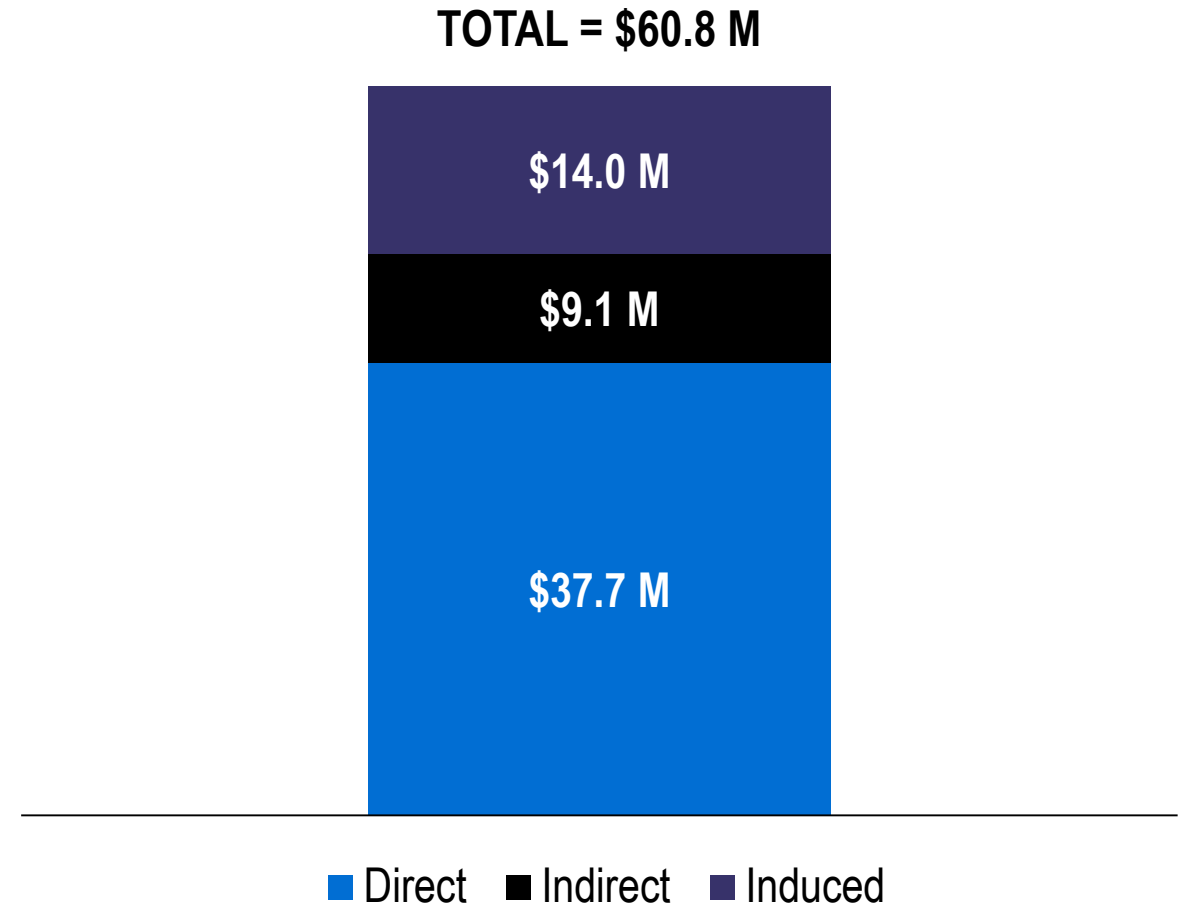


# ECONOMIC IMPACTS OF CONSTRUCTION

# Total Economic Output

## Construction Phase

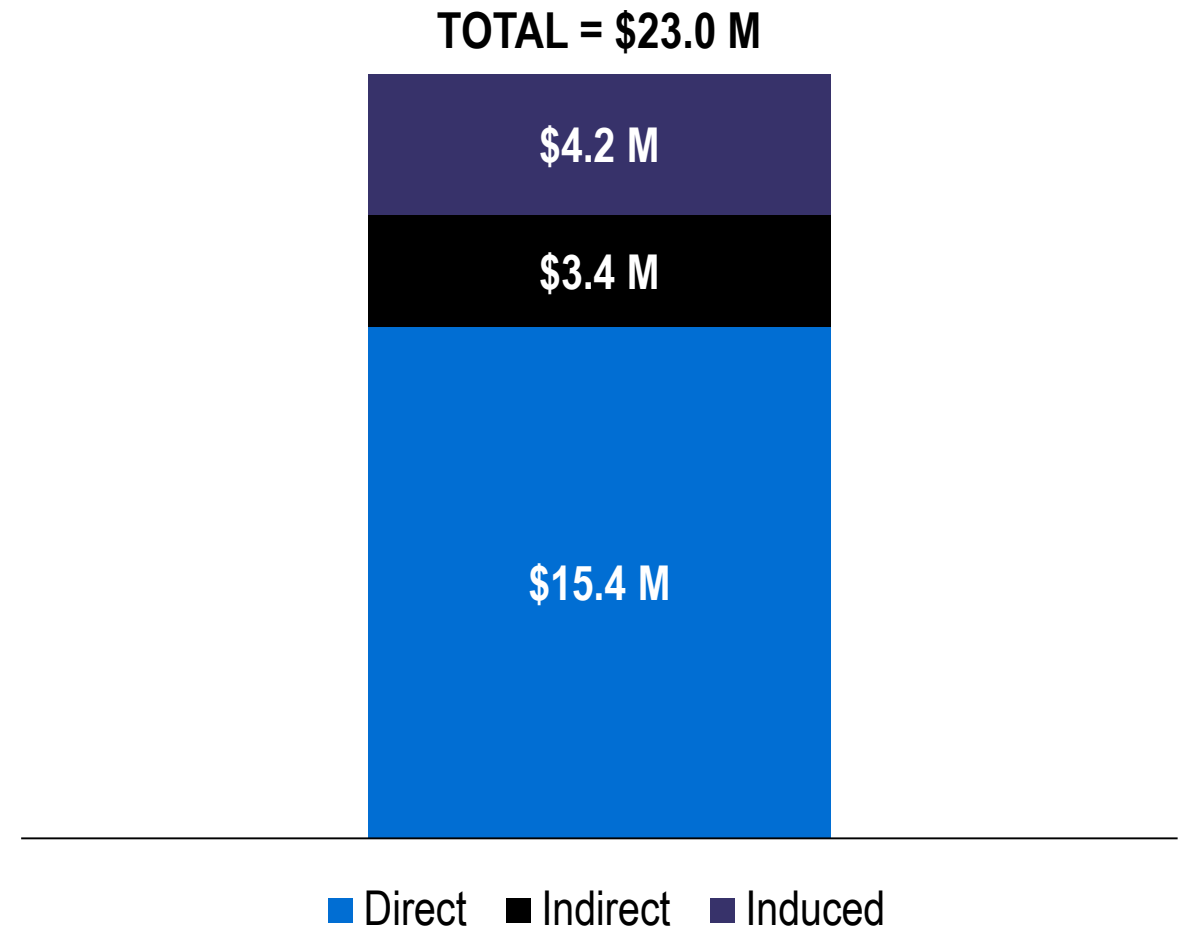
- Total output is the combined value of all spending on a direct, indirect and induced basis as result of the project's construction
- Economic impacts reflect activity taking place within the Washoe County area
- In total, construction of Steamboat Hills Repower is expected to have a one-time, local economic impact of \$60.8 million, including
  - \$37.7 million of direct output in Washoe County
  - \$9.1 million of indirect output supported by supplier purchases
  - \$14.0 million of induced output created by employee spending



# Labor Income Impacts

## Construction Phase

- Labor Income is defined as employee compensation (wages and benefits) and proprietor's income
- In total, construction of the Steamboat Hills Repower is expected to generate \$23.0 million of labor income, including
  - \$15.4 million of direct construction income
  - \$3.4 million of indirect income supported by supplier purchases
  - \$4.2 million of induced income created by employee spending

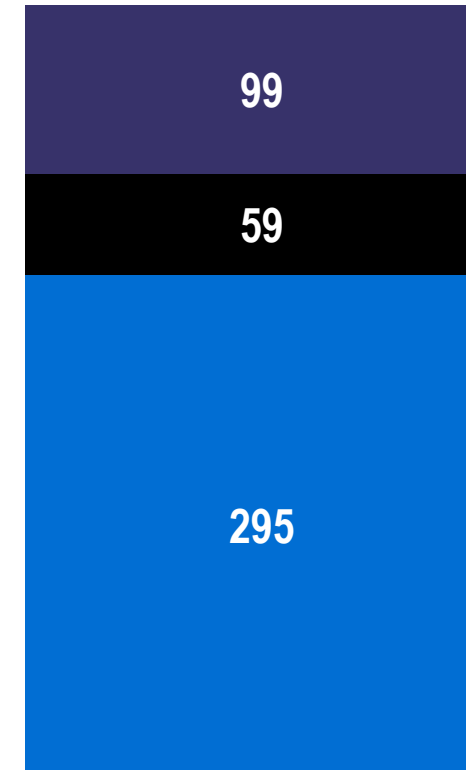


# Employment Impacts

## Construction Phase

- In total, construction of the Steamboat Hills Repower is estimated to create 453 person-years of employment, including
  - 295 direct construction person-years of employment
  - 59 indirect person-years supported by purchases from suppliers
  - 99 induced person-years created by employee spending
- Employment impacts during the construction phase are stated in person-years of employment (i.e., one person employed full time for one year)

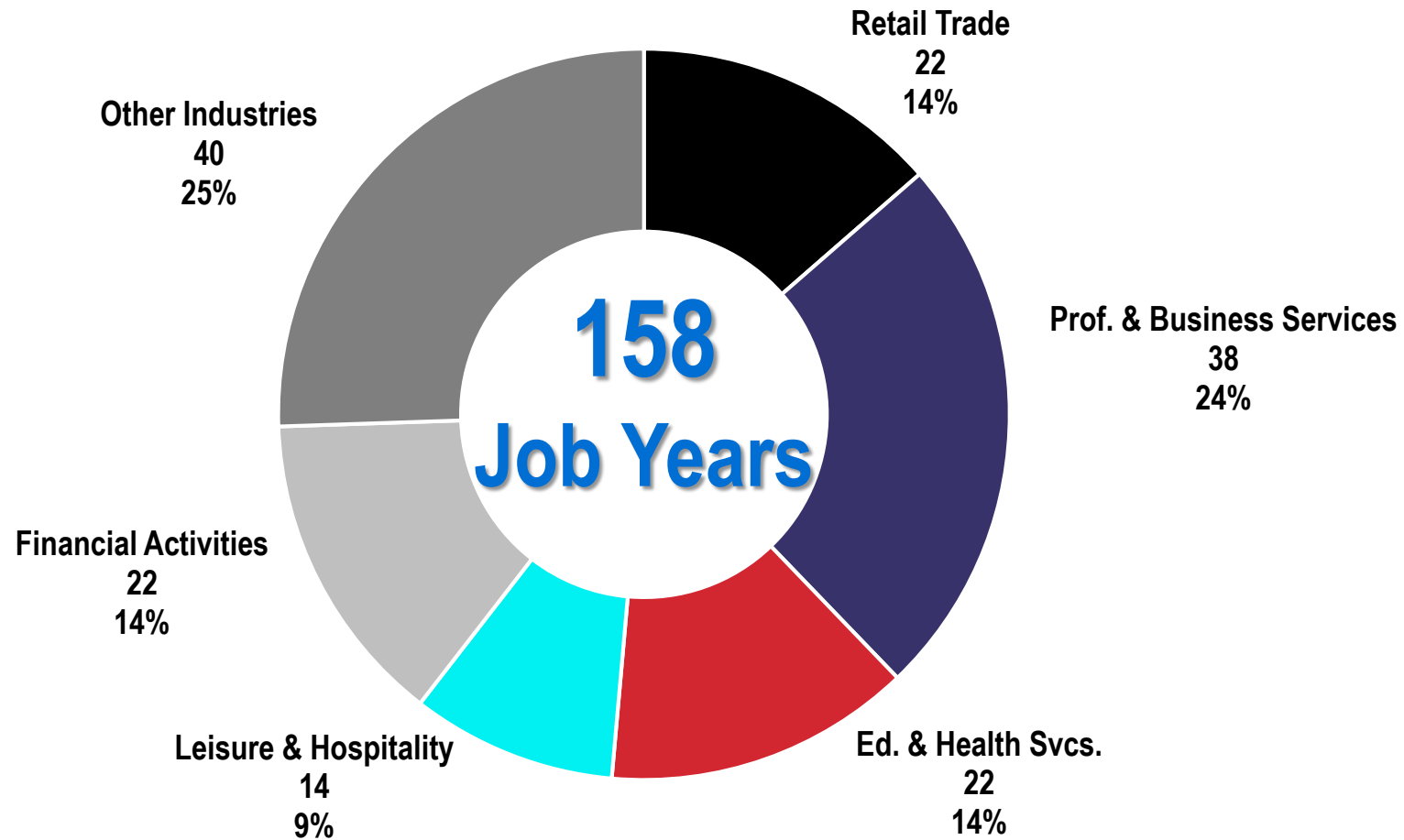
**TOTAL = 453 PERSON-YEARS**



■ Direct ■ Indirect ■ Induced

# Indirect and Induced Job Details

## Construction Phase

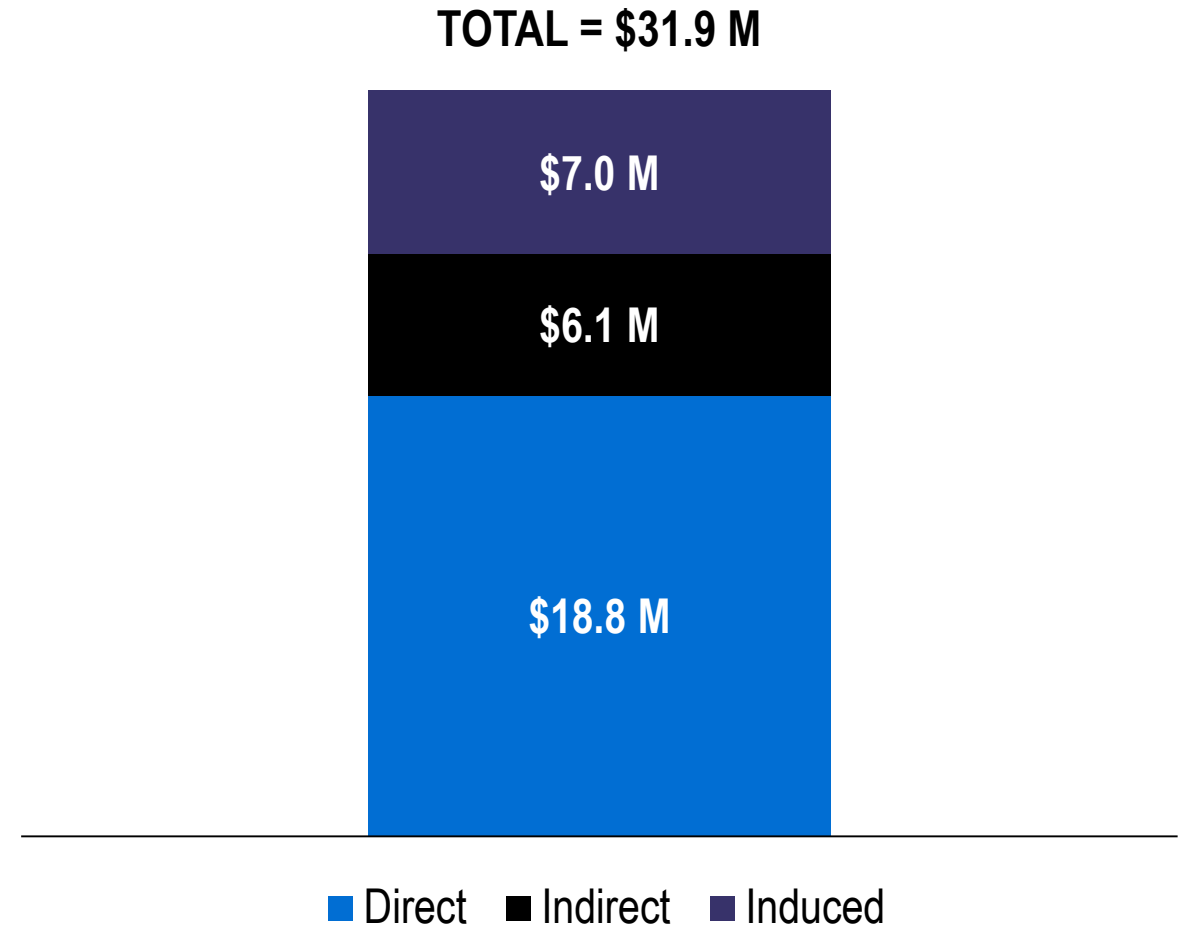


# ECONOMIC IMPACTS OF RECURRING OPERATIONS

# Total Economic Output

## Operations Phase

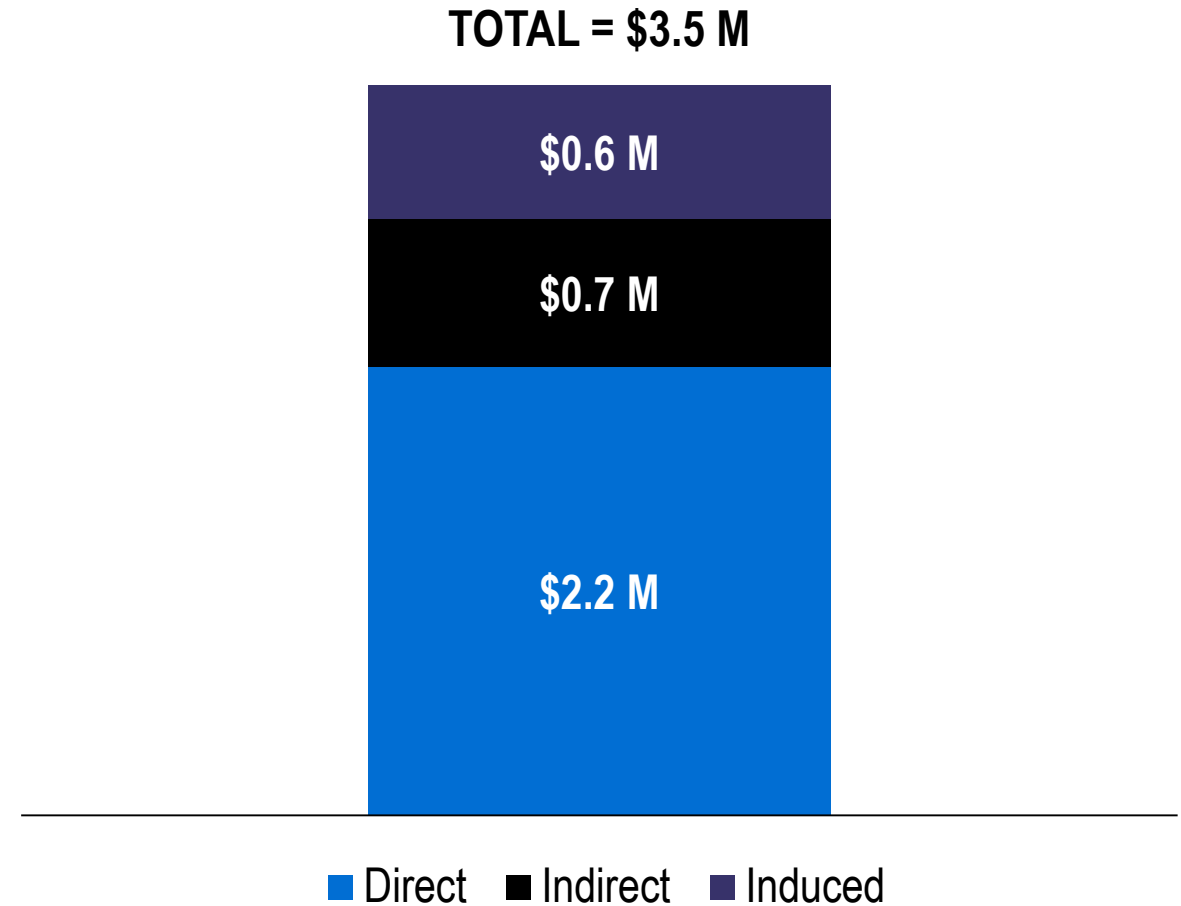
- Total output is the combined value of all spending on a direct, indirect and induced basis as result of the project's annual, recurring operations
- Economic impacts reflect activity taking place within the Washoe County area
- In total, Steamboat Hills Repower's operations are expected to have an annual, recurring economic impact of \$31.9 million, including
  - \$18.8 million of direct impact in Washoe County
  - \$6.1 million of indirect impact supported by supplier purchases
  - \$7.0 million of induced impact created by employee spending



# Labor Income Impacts

## Operations Phase

- In total, recurring operations of Steamboat Hills Repower is expected to generate \$3.5 million of labor income in 2020, including
  - \$2.2 million of direct income at Steamboat Hills
  - \$708,000 of indirect income supported by supplier purchases
  - \$641,000 of induced income created by employee spending
  
- Average wage contributions per employee as a result of ongoing operations include
  - Direct employees \$116,200
  - Indirect employees \$24,100
  - Induced employees \$19,200
  
- Average direct incomes for project employees is more than double the \$47,050 average of employees in Washoe County



Note: Washoe County average private sector wages sourced to U.S. Bureau of Labor Statistics.

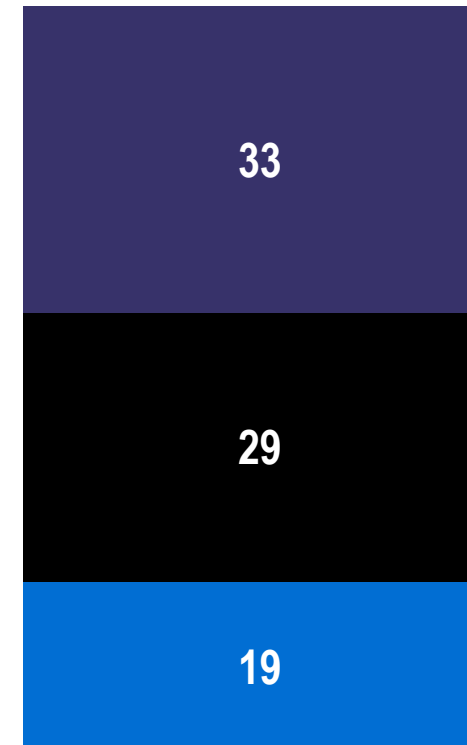


# Employment Impacts

## Operations Phase

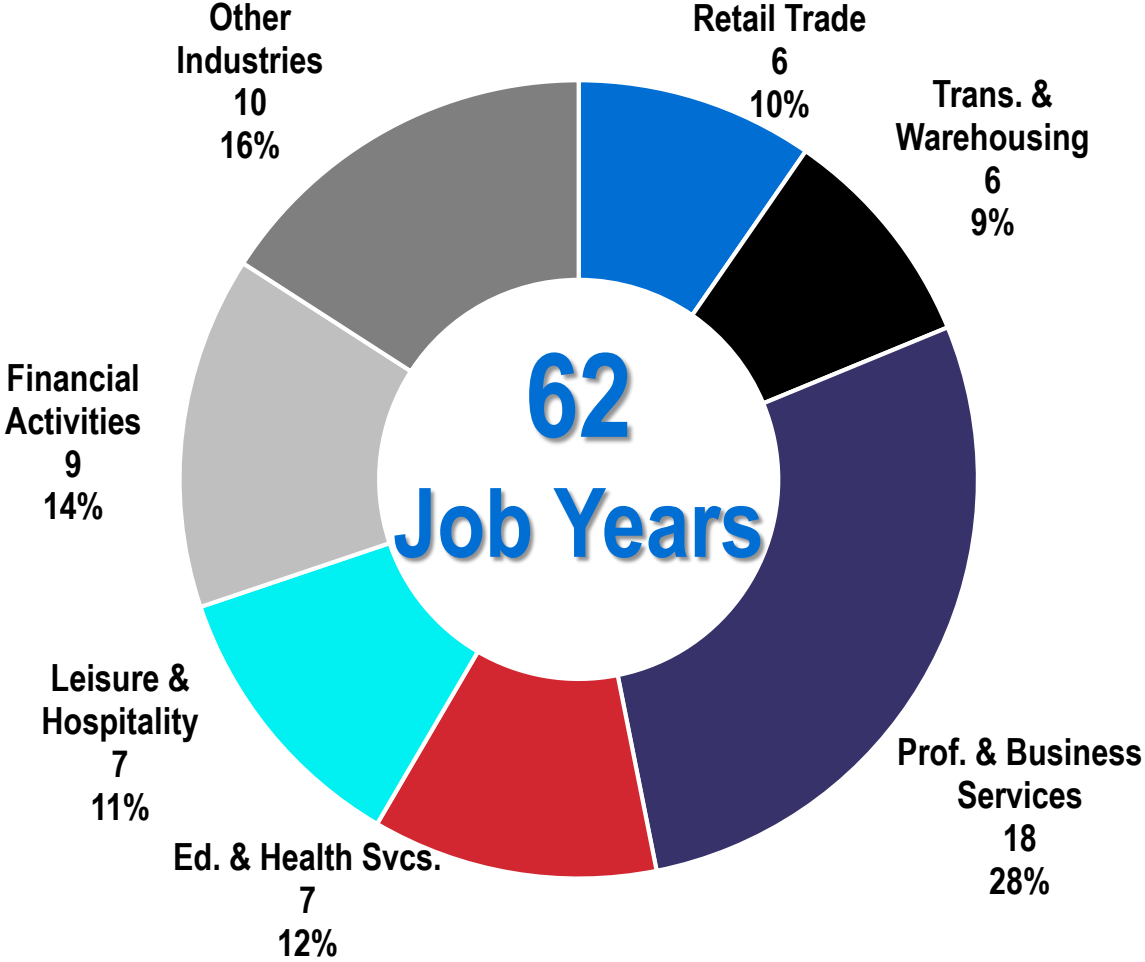
- In total, recurring operations of Steamboat Hills Repower is expected to support 81 jobs annually, including
  - 19 direct person-years of employment at Steamboat Hills
  - 29 indirect person-years supported by purchases from suppliers
  - 33 induced person-years created by employee direct spending
- Direct jobs created by the recurring operations of the plant are expected to include, but not be limited to: plant and control room operators/supervisors, operations support personnel, maintenance staff and administrators

**TOTAL = 81 PERSON-YEARS**



■ Direct ■ Indirect ■ Induced

# Indirect and Induced Jobs Operations Phase



# FISCAL IMPACTS

# Fiscal Impacts

## Public Revenue Estimates

### One-Time, Construction-Related Impacts

**\$760,000**

Sales and Use Tax on Equipment Purchases

### Recurring, Operations-Related Impacts

**\$33.1 Million**

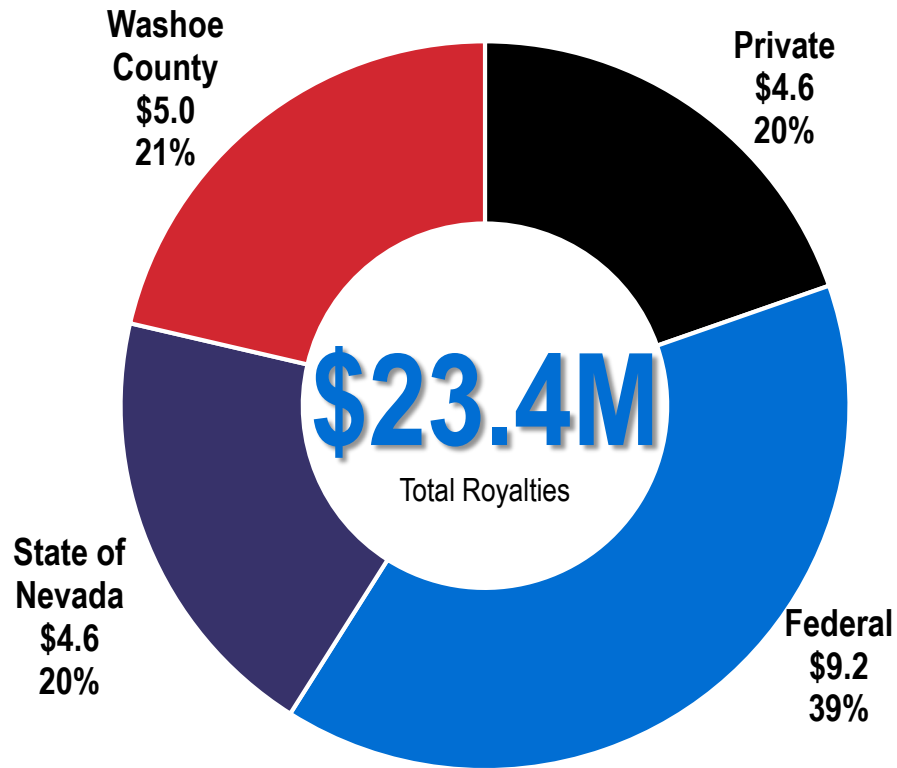
Total During the 30-Year Estimated Useful Life:

Property Taxes  
Sales and Use Taxes  
Net Proceeds of Mineral Taxes  
Modified Business Taxes  
Royalty Payments/Taxes

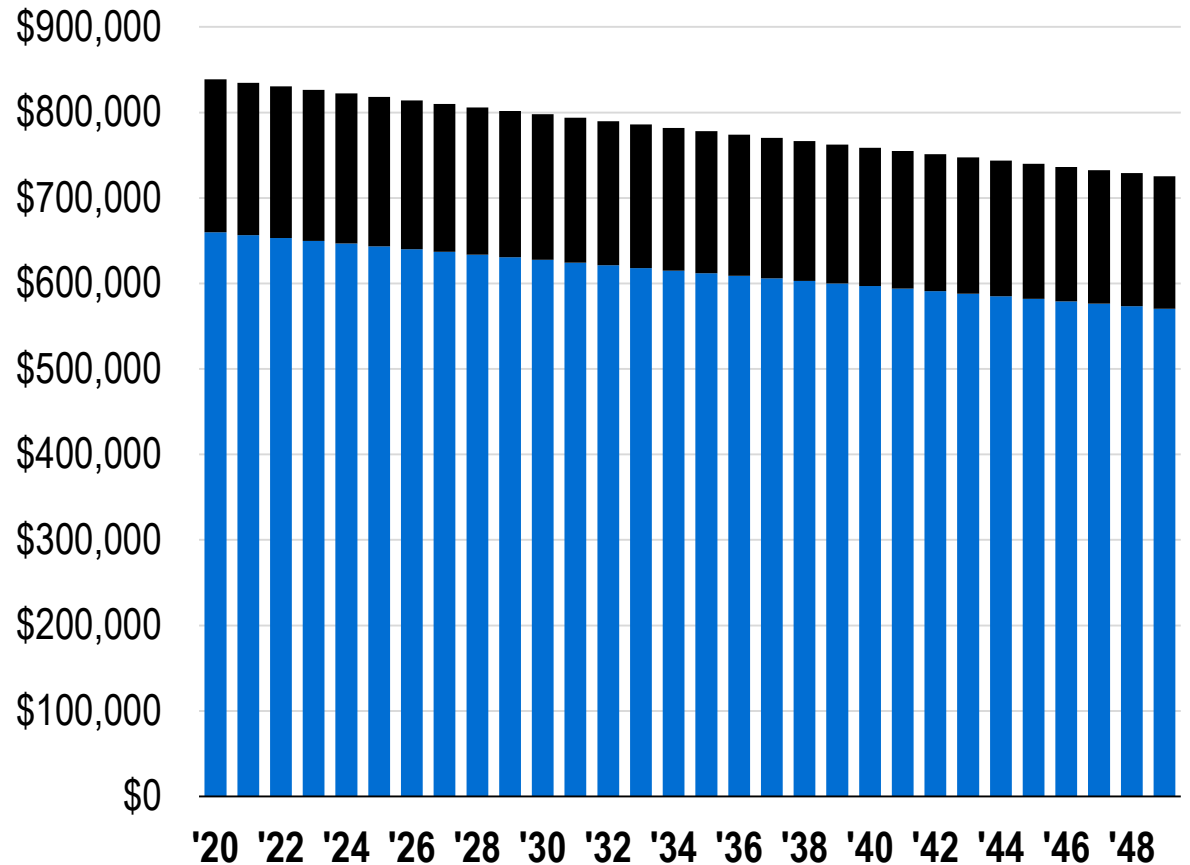
Note: Property Taxes are abated at a rate of 55% for twenty years and Sales and Use Taxes (excluding Local School Support Tax) are abated for first three years of operations.

# Royalties from the Repower

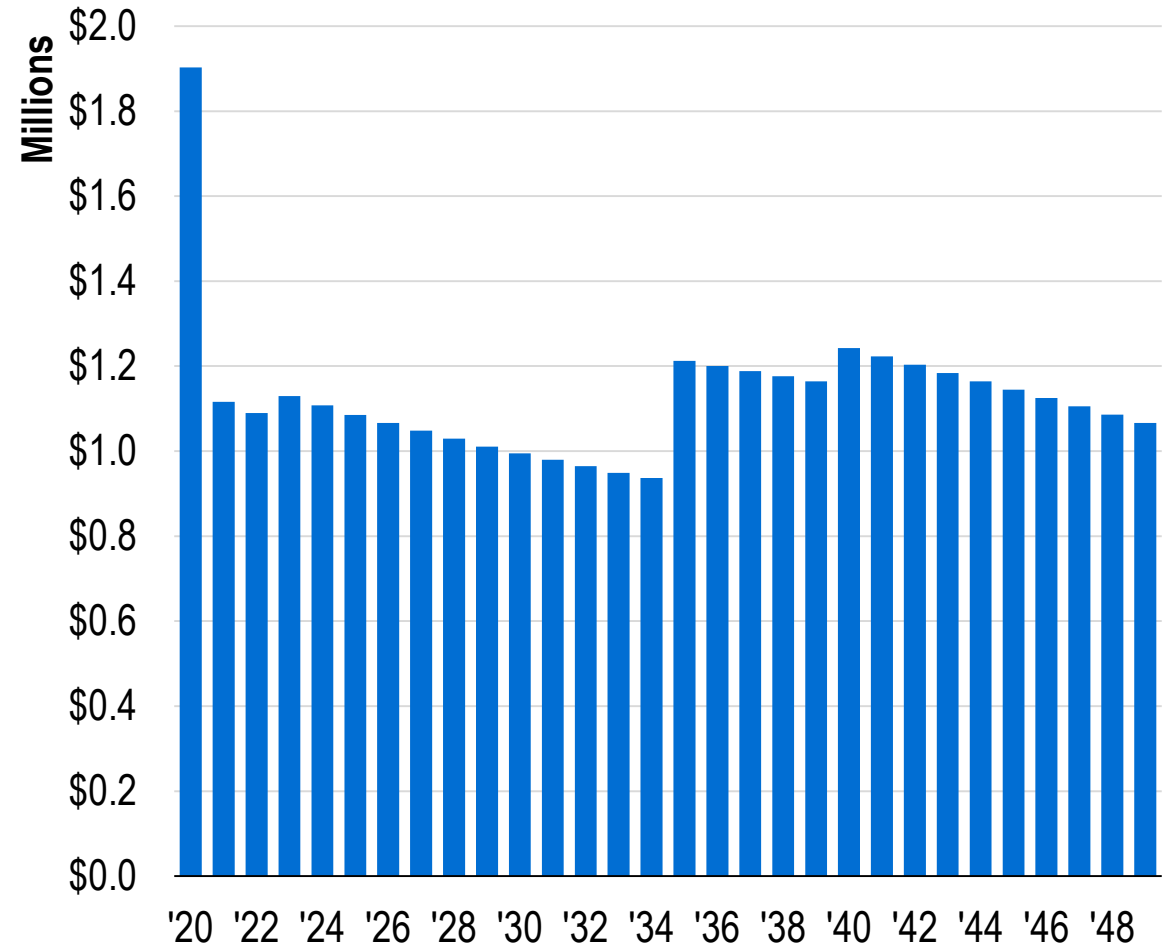
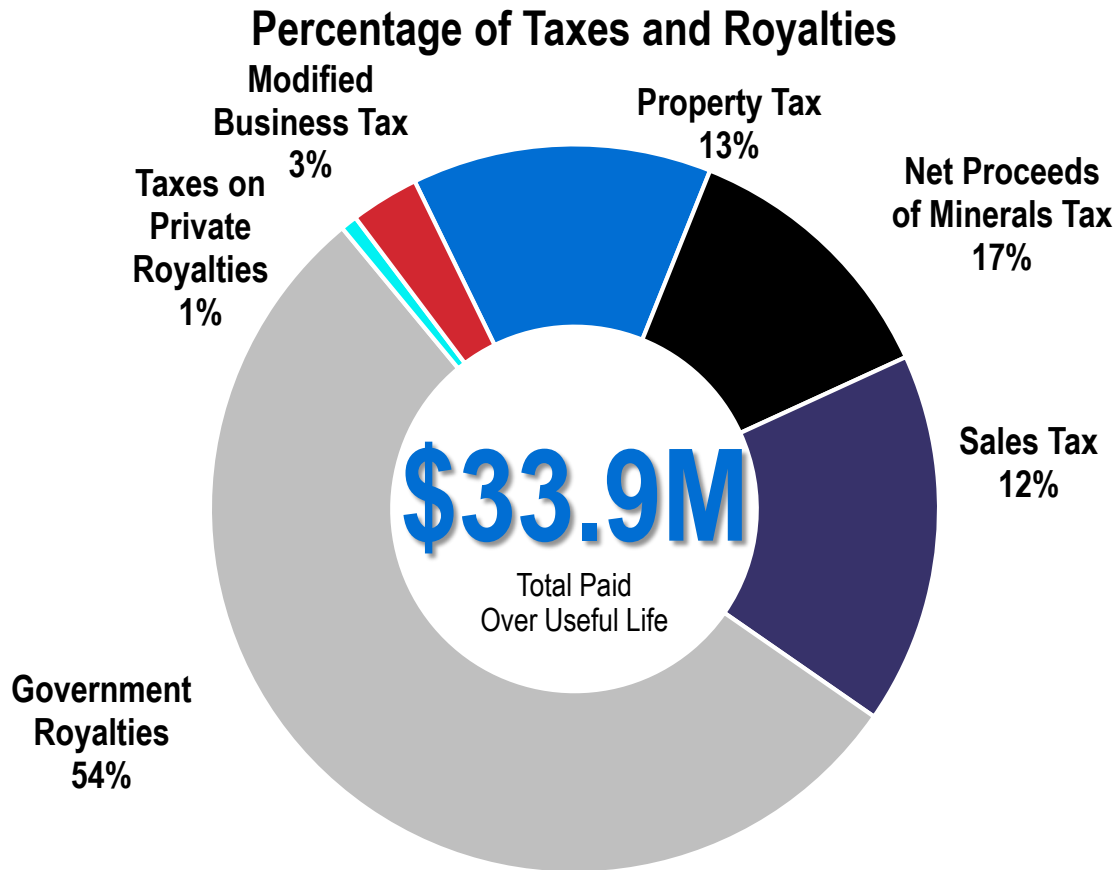
Total Royalties by Recipient (Millions)



■ Government ■ Private Sector

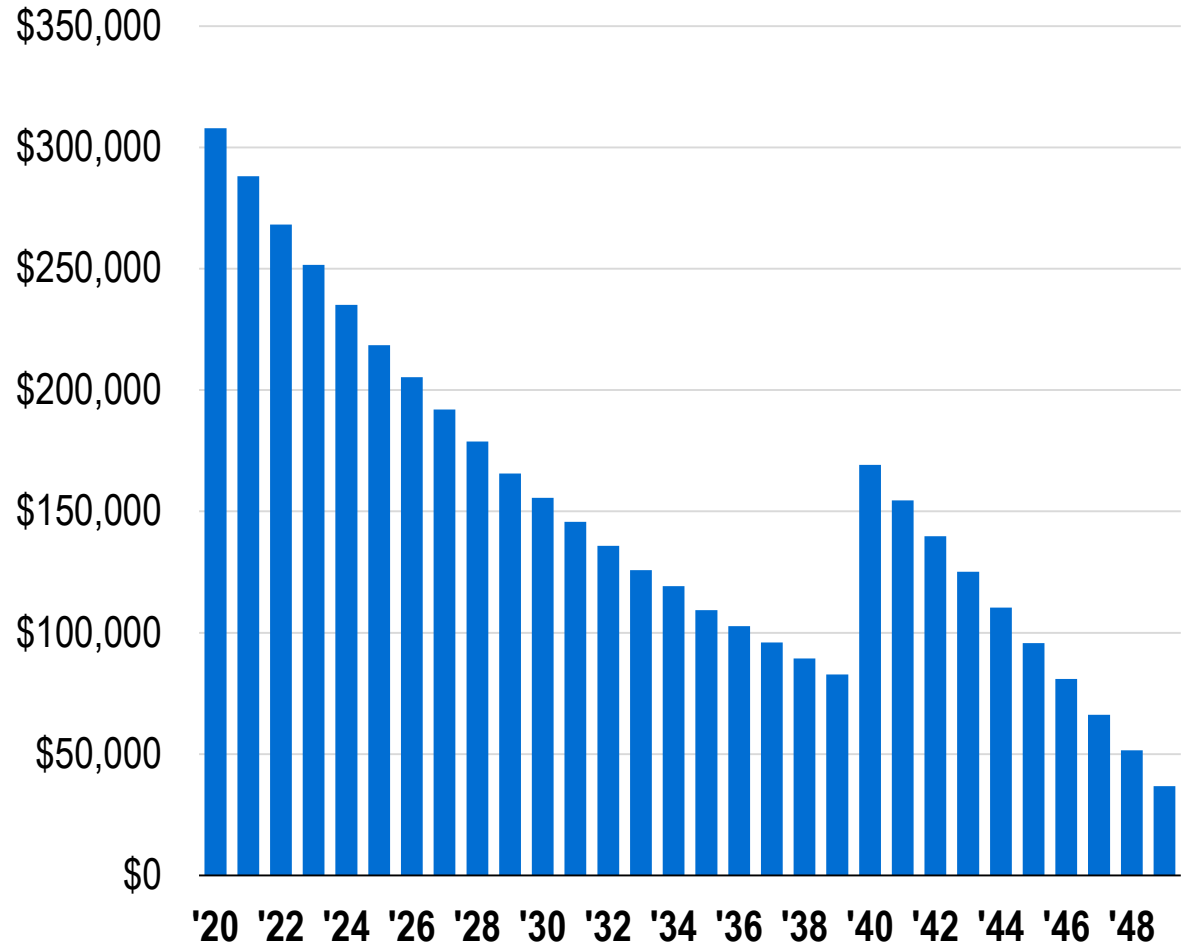
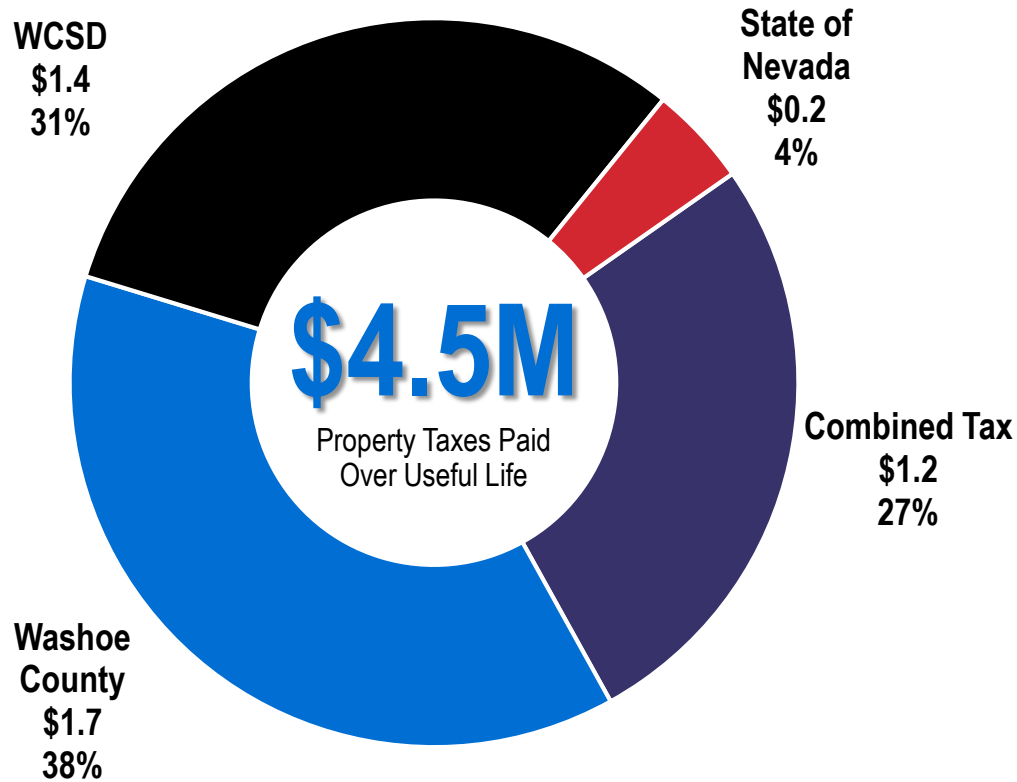


# Total Taxes and Royalties



# Property Tax

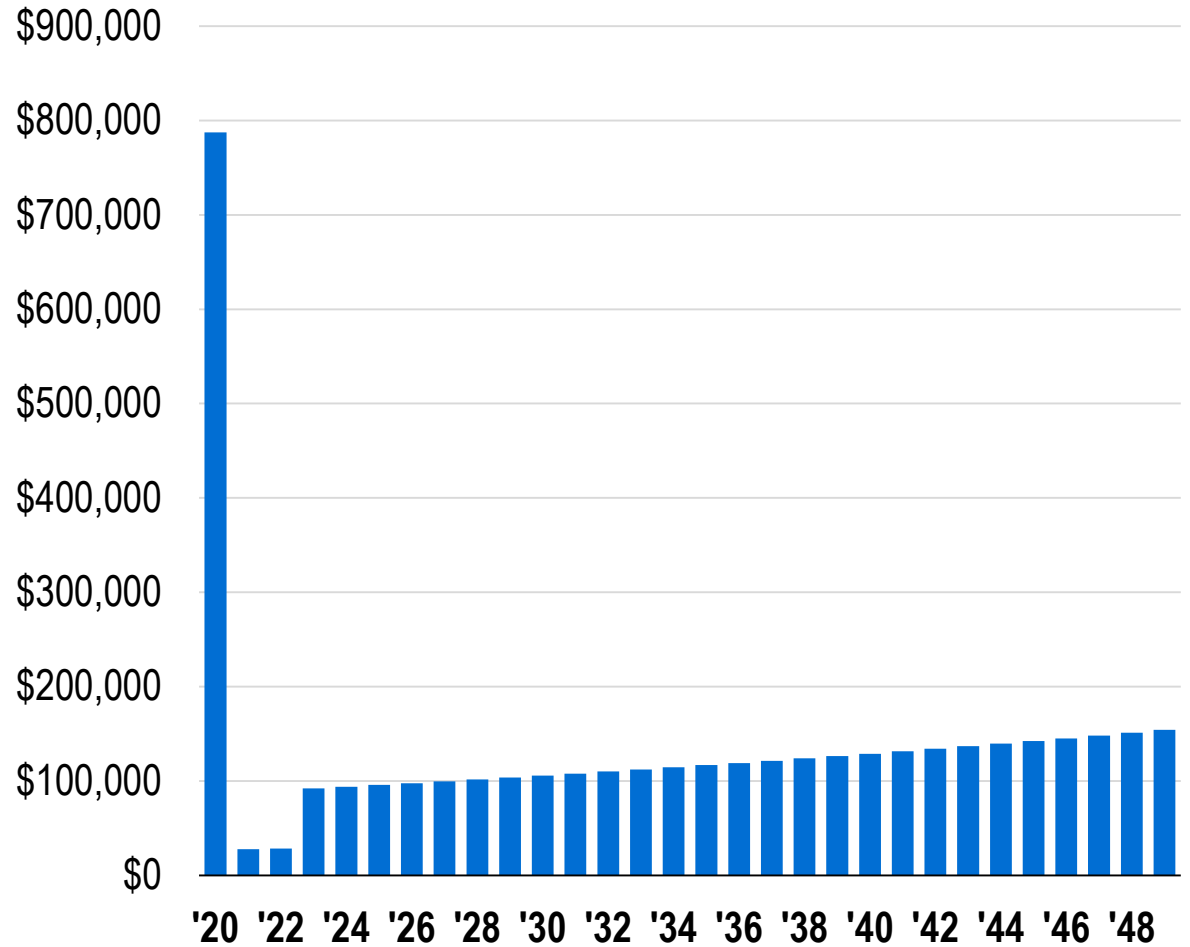
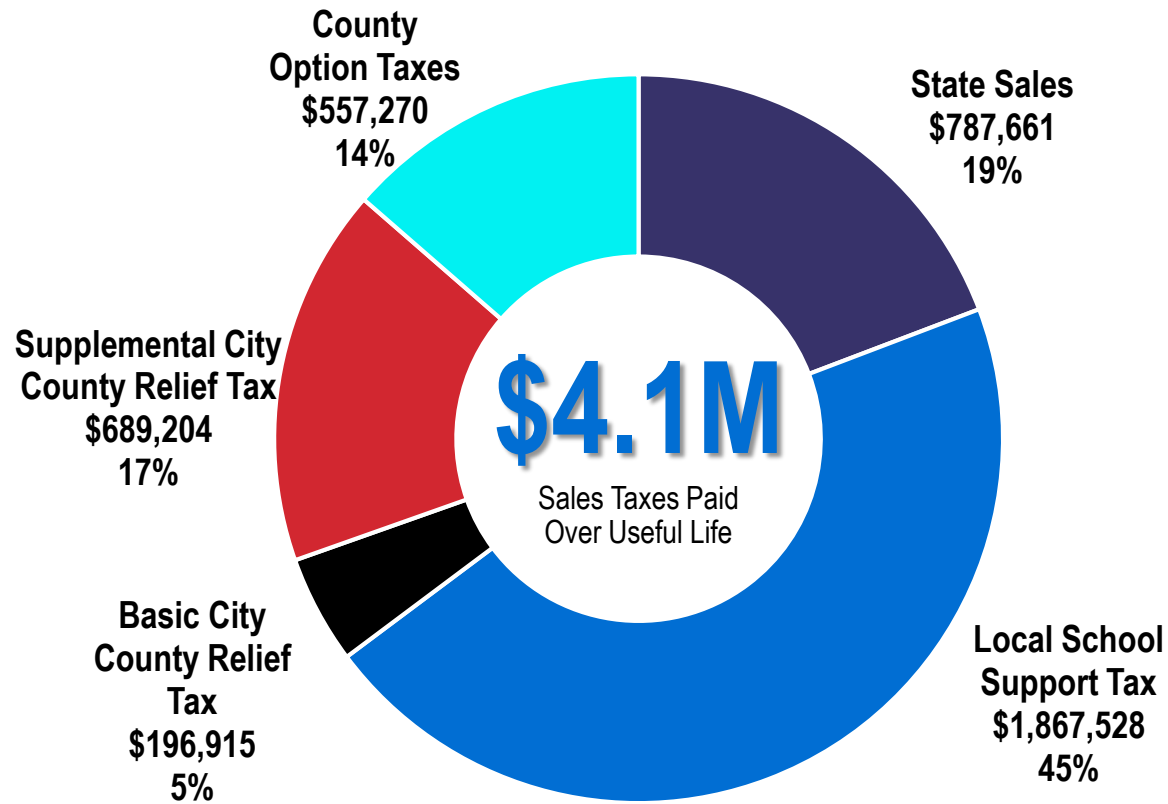
Total Property Taxes by Recipient (Millions)



Note: Property Taxes are abated at a rate of 55% for twenty years.

# Sales and Use Tax

Sales Taxes by Recipient



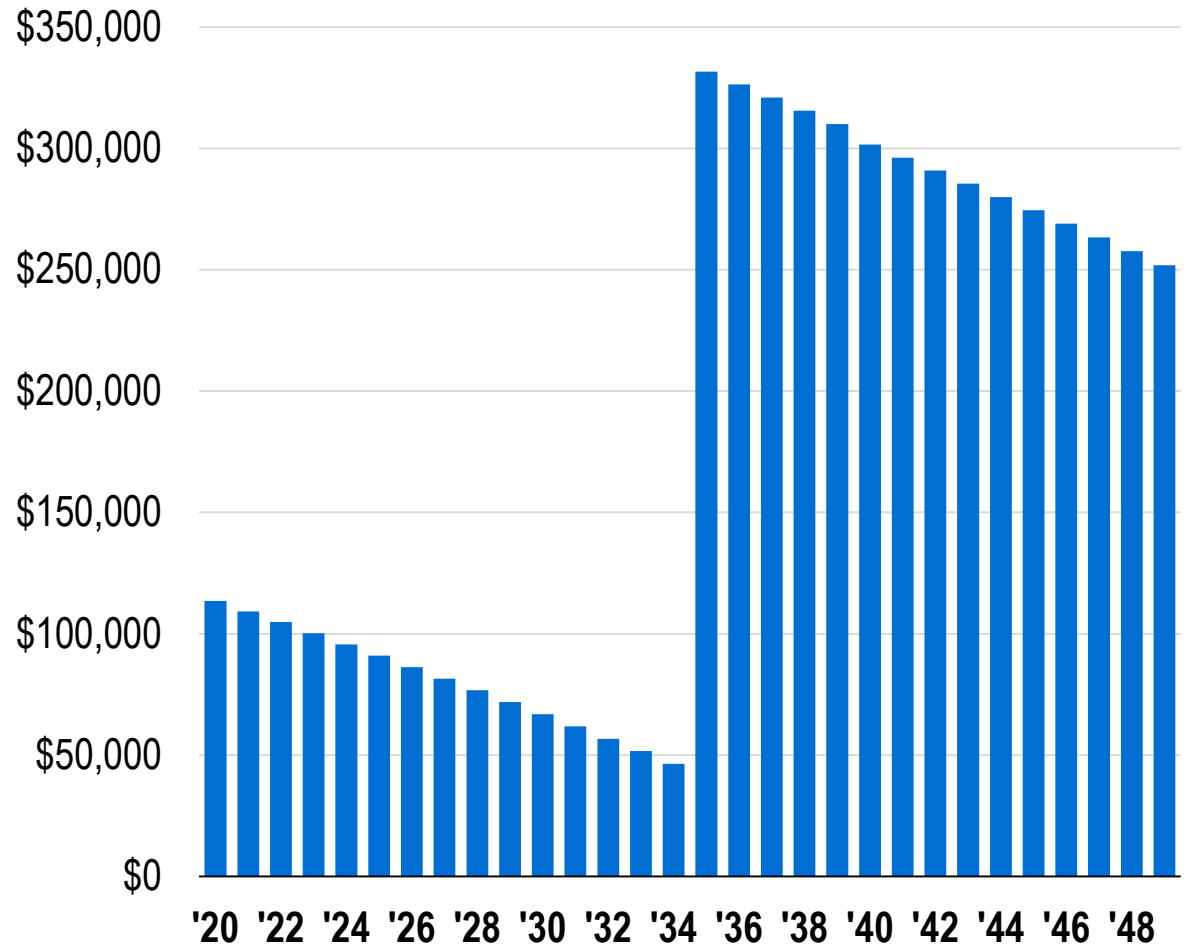
Note: Sales and Use Tax (excluding Local School Support Tax) is abated for first three years of operations.



# Net Proceeds of Minerals Tax

# \$5.6M

Net Proceeds of Minerals Taxes Paid Over Useful Life

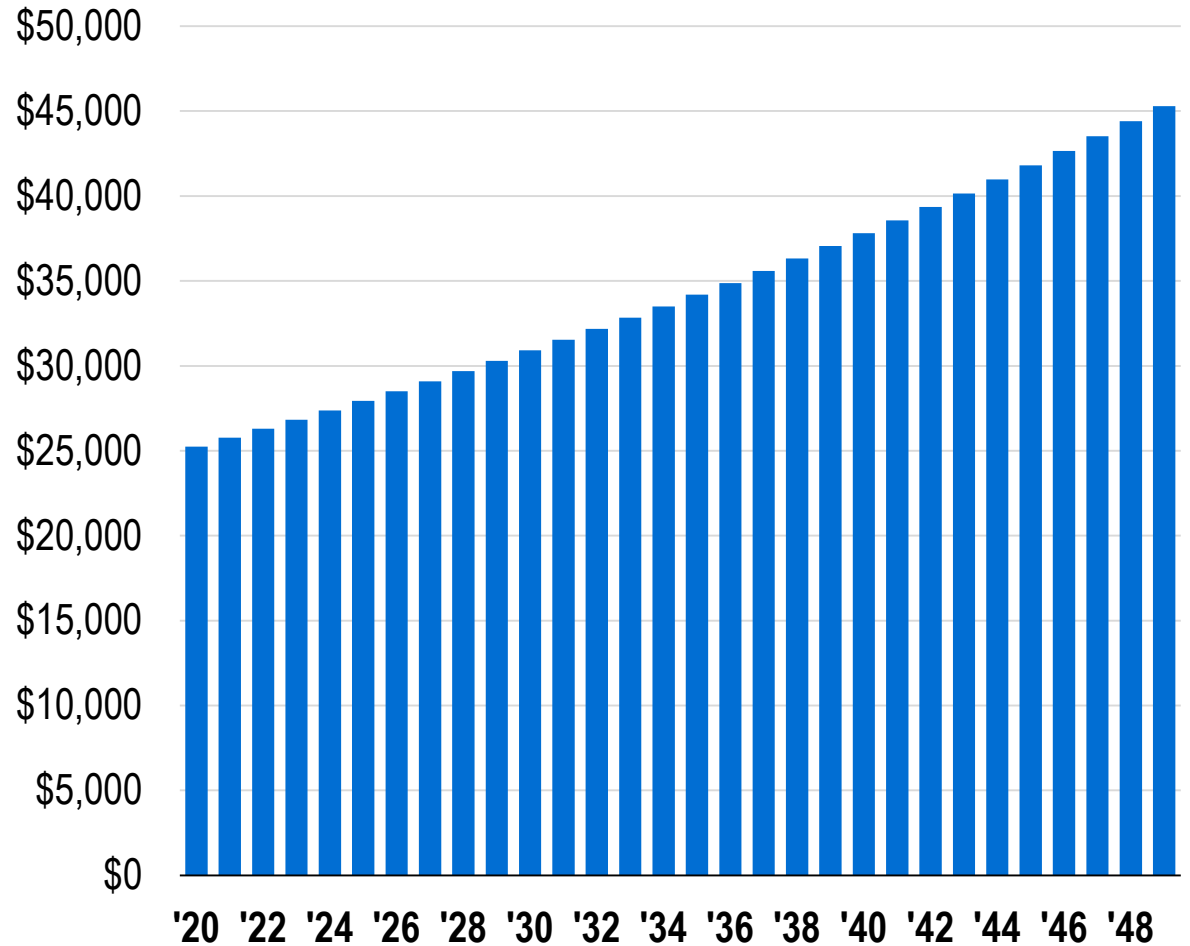


Note: State Authorized ROI expires after fifteen years and can no longer be applied to reduce taxable income.

# Modified Business Tax

# \$1.0M

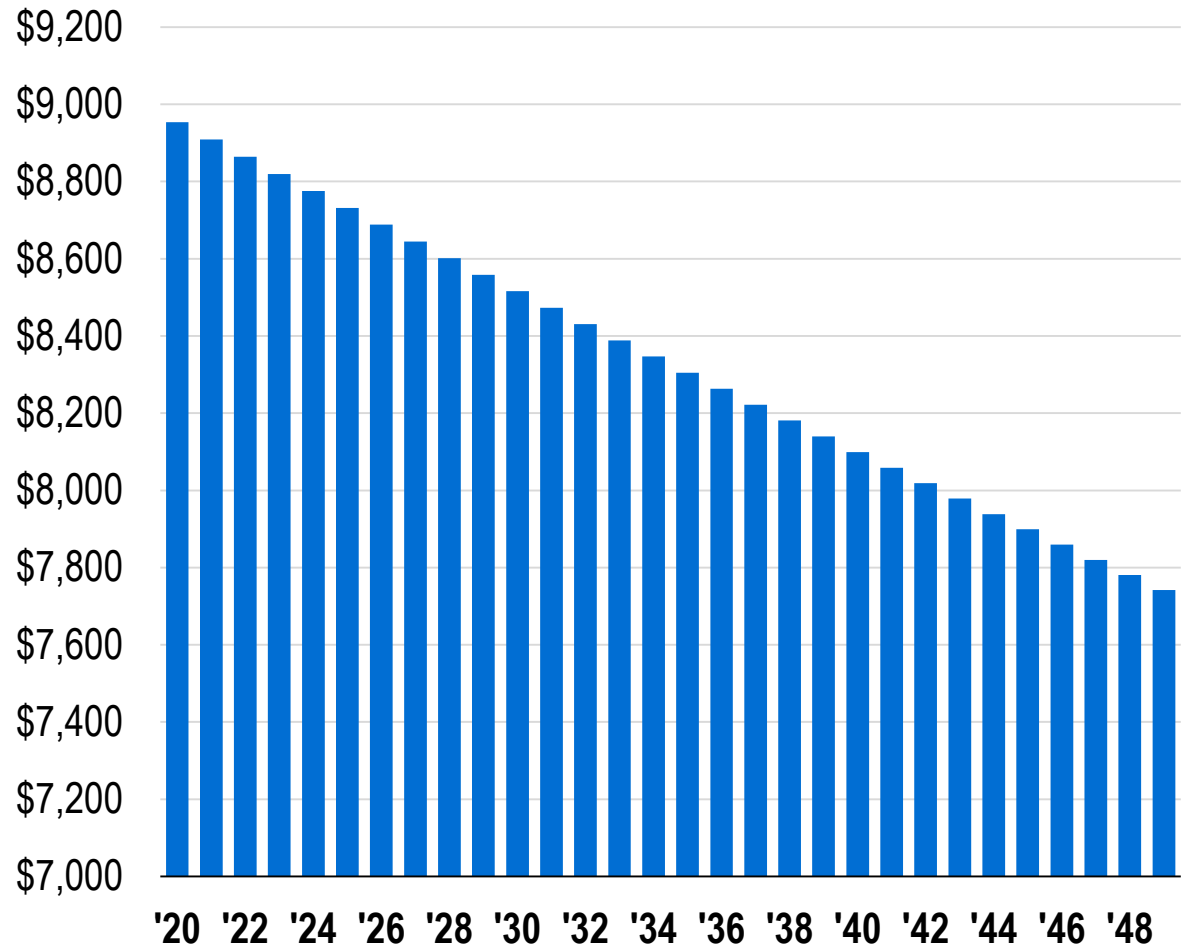
Modified Business Taxes Paid Over Useful Life  
(All Proceeds Inure to the Benefit of the State General Fund)



# Private Sector Royalty Taxes

**\$250,000**

Private Sector Royalty Taxes Paid Over Useful Life



# Intended Use, Assumptions and Fiscal Considerations

- The objective of this analysis is to identify and quantify the economic and material revenue impacts associated with the proposed investment. This report's purpose is to assist Ormat in better understanding how the Company impacts the local community and to estimate economic and fiscal impacts.
- Included in this report are an overview and analysis of the estimated economic and revenue impacts associated with the proposed investment and operations. Data used in this analysis were obtained from the Company and third-party data providers. While we have no reason to doubt the accuracy of the information referenced herein, we have neither audited these data nor performed thorough review and assurance procedures, and as such, AA can make no representations or assurances as to their completeness or usefulness for all purposes.
- With regard to fiscal estimates, Nevada has hundreds of taxes, fees, exactions and charges that are levied on businesses and residents. This analysis considers notable sources of public revenue sourced to the proposed investment. Taxes inuring to the federal government, while significant, are omitted from this analysis as our scope of work is specific to state and local impacts. In contrast to the economic impacts analyzed, fiscal impacts generally reflect only the direct consequence of the activity. This approach is a function of the near impossibility of accurately predicting the secondary fiscal consequences of growth as well as the potential for double counting. That having been said, some level of indirect impacts are likely and this analysis does not attempt to quantify indirect fiscal impacts as a result of indirect payrolls and consumer spending.
- Note that totals on charts, tables and exhibits may not sum to 100 percent due to rounding.

# About the Author

Applied Analysis (AA) is a Nevada-based economic analysis and gaming consulting firm with extensive experience in preparing economic and fiscal impact analyses. AA also maintains a broad range of gaming experience. AA has been retained by several organizations to review and analyze the economic, fiscal and social impacts of community investments and operations. This includes impacts on employment, wages and output as well as impacts on tax collection and public service demands.

AA is an information and analysis resource founded in 1997 for both the public and private sectors. Our team has extensive experience in real estate, market analysis, urban economics, information technology, finance and hospitality consulting. We apply this knowledge in an effort to develop creative solutions to our clients' challenges.

Our team has performed analyses in Nevada, California, Mississippi, Colorado, New York, Illinois and other markets around the country. We have serviced a broad spectrum of business clients, from governmental agencies to healthcare providers. Our public sector practice has analyzed the fiscal and economic impact of developments from five to 23,000 acres, and handled policy issues spanning business tax initiatives to the cost of air quality programs.

Our vision and goals have been the same since our inception. We strive to provide superior advisory services through a better understanding of our clients and their issues. We obtain this superior understanding through listening closely to our clients' needs and designing solutions that take into account their unique nature, circumstances and requirements.

To put it simply, we are a solutions resource. Our future is branded by the success of our clients and the quality of our professionals. *Our commitment lies therein.*

Applied Analysis' broad range of experience in a number of industries and disciplines provides our professionals with a global view and approach to projects. The following highlights key service lines and areas of expertise.

- Economic Analysis
- Financial Analysis / Advisory Services
- Hospitality / Gaming Consulting Services
- Information Technology / Web-based Solutions
- Litigation Support / Expert Analysis
- Market Analysis
- Opinion Polling / Consumer Sentiment Analysis
- Public Policy Analysis

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For More Information, Contact:

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# STEAMBOAT HILLS REPOWER ECONOMIC AND FISCAL IMPACT ASSESSMENT

