

Critical Minerals Technology Innovation Hub

Missouri Economic Impact Analysis

Economic Impact Summary

The Critical Minerals Technology Innovation Hub would create substantial economic impacts to Missouri during its investments and operations phases if planned activities occur. Expected gains in jobs, income and other measures over 10 years (2025-34) would benefit the 14-county Hub region and other communities in Missouri.

14-County Innovation Hub Region Impacts

This Missouri region would be the focus of critical mineral research, testing, mining, and refining operations. Over \$2.7 billion in facility and equipment investments would support an annual average of nearly 4,000 jobs during this phase of development. Once all facilities are built and fully operational, the region will benefit from over 5,000 sustained jobs in the region. Over the analysis period, the region would gain nearly \$5 billion in GDP and over \$17 billion in Gross Output.

Impact	Jobs	Labor Income	GDP	Gross Output
<i>Direct</i>	4,088	\$1.1 B	\$1.9 B	\$10.7 B
<i>Indirect</i>	3,464	\$1.5 B	\$2.3 B	\$5.2 B
<i>Induced</i>	1,694	\$332 M	\$711 M	\$1.3 B
Total	9,247	\$3.0 B	\$4.9 B	\$17.2 B

Note: All money figures in cumulative and in 2024 dollars.

Total Missouri Impacts

Critical mineral research and business developments within the Hub Region would have spillover effects on the rest of Missouri. Total Missouri impacts include spillover supply-chain and worker spending effects, as well as battery plant expansions spurred by the proximity to materials and technical knowledge. The combined impacts would support over 23,000 jobs during the analysis period, create \$12.5 billion in GDP, and over \$34 billion in Gross Output.

Impact	Jobs	Labor Income	GDP	Gross Output
<i>Direct</i>	10,220	\$23.6 B	\$5.1 B	\$19.4 B
<i>Indirect</i>	7,237	\$2.9 B	\$4.7 B	\$9.9 B
<i>Induced</i>	5,569	\$1.4 B	\$2.7 B	\$4.8 B
Total	23,026	\$7.9 B	\$12.5 B	\$34.2 B

The Hub would employ a significant labor force in the 14-county region. Yet, its economic contributions would be felt across Missouri as the Hub would be a catalyst for related industries, such as battery manufacturers, to locate in the state.



Investment Phase Economic Impacts

The investment phase includes the construction of facilities and equipment purchases related to over \$2.7 billion in initial capital expenditures to prepare for research and business operations within the 14-county region. The \$2.7 billion in direct investments include:

- Research Center: \$28 M (2025-26)
- 2 Demonstration Plants: \$50 M (2025) \$50 M (2029)
- Cobalt Refinery (2 Phases): \$480 M (2026) \$500 M (2031-32)
- PreCAM Demonstration Plant: \$30 M (2030)
- Doe Run Refinery: \$800 M (2030-31)
- Higdon Mine: \$200 M (2030-31)
- Recycling Plant: \$600 M (2030-31)

Economic benefits of investment activities in the 14-County Region

The direct investments are modeled to impact facility construction (66%) and equipment purchases (34%) over the years 2025-32 which will spur supply-chain (Indirect) and worker spending (Induced) impacts. Income, GDP, and Gross Output figures are cumulative and in 2024 dollars. Job figures represent the average annual employment over the investment period.

14-County Region – Investment Phase Impacts

Impact	Jobs	Labor		Gross
		Income	GDP	Output
<i>Direct</i>	2,893	\$755 M	\$852 M	\$2.1 B
<i>Indirect</i>	481	\$134 M	\$250 M	\$599 M
<i>Induced</i>	510	\$111 M	\$237 M	\$40 M
Total	3,885	\$1.0 B	\$1.3 B	\$3.1 B

Operations Phase Economic Impacts

The operations phase includes the following:

- Research governance spending: \$15.25 M (2025-29)
- Research Business Dev., Capital Form., Workforce, Planning, DEIA spending: \$24 M (2025-29)
- Facility operation jobs scaled up after investments through direct employment* in the following industries:
 - Nonferrous Metal Refining: 774 total jobs
 - Secondary Metal Refining: 351 total jobs
 - Powder Metallurgy Part Manufacturing: 70 total jobs

*Direct employment not included in these firms as accounted for in supply-chain indirect employment:

- Copper, Nickel, Lead, and Zinc Mining
- Recyclable materials merchant wholesalers
- Hazardous waste collection
- Materials recovery facilities

Economic benefits of operations activities in the 14-County Region

Income, GDP, and Gross Output figures are cumulative and in 2024 dollars. Job figures represent the maximum employment at the end of the analysis period.

14-County Region – Operations Phase Impacts

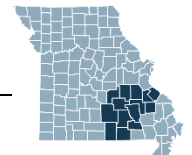
Impact	Jobs	Labor Income	GDP	Gross Output
<i>Direct</i>	1,195	\$392 M	\$1 B	\$8.6 B
<i>Indirect</i>	2,983	\$1.4 B	\$2 B	\$4.6 B
<i>Induced</i>	1,184	\$222 M	\$474 M	\$880 M
Total	5,362	\$2.0 B	\$3.5 B	\$14.0 B

14-County Region - Total Economic Impacts

(Combined Investment & Operations Phases)

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Total	9,247	\$3.0 B	\$4.9 B	\$17.2 B

Rest of Missouri (Outside the 14-County Region)



Investment Phase Economic Impacts

The investment phase includes the construction of facilities and equipment purchases related to an estimated \$3.0 billion in capital expenditures if a large-scale battery plant locates in Missouri, but outside the 14-county region:

- New battery manufacturing facility: \$3.0 B (2031-32)

Economic benefits of investment activities in the Rest of Missouri

The direct investments are modeled to impact facility construction (66%) and equipment purchases (34%) over the years 2031-32 which will spur supply-chain (Indirect) and worker spending (Induced) impacts. Income, GDP, and Gross Output figures are cumulative and in 2024 dollars. Job figures represent the average annual employment over the investment period.

Rest of Missouri – Investment Phase Impacts

Impact	Jobs	Labor Income	GDP	Gross Output
<i>Direct</i>	2,664	\$1 B	\$1.2 B	\$2.3 B
<i>Indirect</i>	839	\$386 M	\$663 M	\$1.3 B
<i>Induced</i>	1,186	\$397 M	\$730 M	\$1.3 B
Total	4,688	\$1.8 B	\$2.6 B	\$4.9 B

Operations Phase Economic Impacts

The operations phase includes the following:

- Facility operation jobs scaled up after investments through direct employment in the following industries:
 - Nd-Cd, Ni-Fe, AgO-Zn, Pb-acid, Li-ion battery manufacturing: 3,108 total jobs
 - Alkaline, Alkaline-Mn, Li, ZnC primary batteries manufacturing: 268 total jobs
 - Motor Vehicle Electrical manufacturing: 92 total jobs

Economic benefits of operations activities in the Rest of Missouri

Income, GDP, and Gross Output figures are cumulative and in 2024 dollars. Job figures represent the maximum employment at the end of the analysis period.

Rest of Missouri – Operations Phase Impacts

Impact	Jobs	Labor Income	GDP	Gross Output
<i>Direct</i>	3,468	\$1.4 B	\$2.1 B	\$6.5 B
<i>Indirect</i>	2,933	\$1 B	\$1.7 B	\$3.5 B
<i>Induced</i>	2,689	\$666 M	\$1.2 B	\$2.1 B
Total	9,090	\$3.1 B	\$5.0 B	\$12.1 B

Rest of Missouri - Total Economic Impacts

(Combined Investment & Operations Phases)

Impact	Jobs	Labor Income	GDP	Gross Output
<i>Direct</i>	6,132	\$2.5 B	\$3.2 B	\$8.8 B
<i>Indirect</i>	3,772	\$1.4 B	\$2.4 B	\$4.8 B
<i>Induced</i>	3,875	\$1.1 B	\$2 B	\$3.4 B
Total	13,779	\$5.0 B	\$7.6 B	\$17 B

Total Project Impact

Total Project Economic Impacts

(Combined Investment & Operations Phases)

14-County Region

Impact	Jobs	Labor Income	GDP	Gross Output
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Economic Impact Methodology

The IMPLAN input/output economic model, provided by the IMPLAN Group, LLC, was used for this analysis. The model is commonly used by universities, consultants, and economic development organizations to understand the economic impact of business projects and the model is updated annually with data from a variety of U.S. statistical agencies.

The IMPLAN model provides job, income, GDP, gross output, and tax estimates based on typical consumer and industry spending patterns within an area. This report highlights the expected economic gains for the 14-County Regional Tech Hub and the rest of Missouri during two phases of development:

- The **investment phase** includes construction and equipment purchases of over \$2.7 billion in the 14-county region assuming all facilities - research center, demonstration plants, refineries, etc. - are built within the analysis period (2025-2034). Another \$3.0 billion in investment spending is assumed if a large battery plant is built in Missouri during this time. Due to the need for a large-scale workforce (3,000+ jobs), it is assumed a battery plant would be located closer to a major metropolitan area outside of the 14-county region.

Investments were divided between facility construction (66%) and equipment purchases (34%) to model impacts more realistic to manufacturing capital investments.

- The **operations phase** includes the facility employment of workers in the 14-county region that is scaled up over several years following the investment phase of a particular facility. Information on research center spending, employment projections from existing Missouri firms, and potential future plant operations were used to estimate operational impacts. If the future operations of facilities were accounted for in the model's supply-chain (indirect) purchases, those industries were removed from direct inputs to avoid double-counting impacts.

Two geographies and a state total are shown in the economic analysis to better track supply-chain and household spending impacts across Missouri:

- **14-County Region** impacts are effects that are expected to occur within the grouping of counties. It includes economic benefits from direct spending during the investment phase and research, mining, refining, and support activities during the operations phase. Supply-chain (indirect) and household spending (induced) effects also occur in the region.
- **Rest of Missouri** impacts estimate the supply-chain (indirect) and household spending (induced) effects in other Missouri counties that are stimulated by the direct investment in a large-scale battery plant and facility operation jobs at battery and EV vehicle plants. Some of that spending will go to other businesses in the state, creating additional economic benefits within Missouri.
- **Total Missouri** effects are the sum of the 14-County Region and Rest of Missouri impacts.

IMPLAN economic model terminology

Economic models track the flow of spending that moves around an economy through the primary relationships between businesses and consumers. Models consider the typical purchases made by companies to produce goods or services (indirect spending), where those companies are, and how workers spend the income that is made on consumer products and services (induced spending). The

models follow these spending patterns to understand the larger impacts that circulate within a region and what income leaks out due to imports.

Spending effects describe how the output of a business causes money to flow to other businesses in the region or state:

- **Direct Effects** include the sales, income, and jobs that come from selling a product or service for consumption.
- **Indirect Effects** are the supply-chain ripple impacts of spending that occur when a business purchases goods and services for operation.
- **Induced Effects** capture the household spending of owners and workers when items such as groceries, clothing, etc. are purchased in the state economy. Just like suppliers, workers also spend some of their income outside the state for things like travel, online purchases, specialized goods, etc. which represents spending leakages.
- **Total Effects** combine the direct effect of jobs and income from a business or industry with the ripple effects of supplier and household spending within the state that supports additional employment and wealth.

Economic impact terms used in this analysis:

- **Job** estimates are the annual average full- or part-time employment supported by the investment or operational phase activities. Jobs in a region can be held by local residents and in-commuters who live outside the area.
- **Labor Income** describes wages and benefits, such as healthcare and retirement, along with proprietor income.
- **Gross Domestic Product**, or GDP, is value of final sales in a region that represents new wealth to citizens and businesses. Also known as value added, it is total sales minus the costs of intermediate input goods and services that leaves money to pay wages, profits, rents, interests, and taxes.
- **Gross Output** represents the total value of all sales, including both the input cost of making a good or service along with the money received when that product or service is sold for final use (GDP).

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