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Analysis by the LFC Economists
NEW MEXICO LEGISLATIVE FINANCE COMMITTEE

New Mexico Industry Cluster Analysis

THIS REPORT analyzes New Mexico's industry clusters and offers a framework for policy makers to think strategically about economic development policies.

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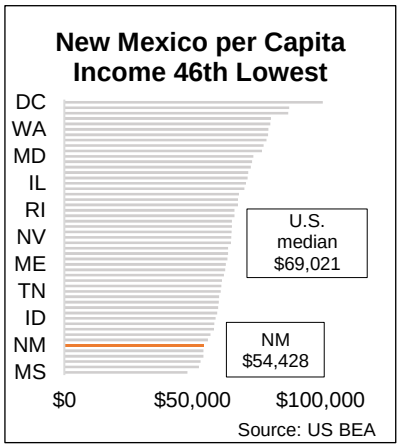
Key Points

- Overreliance on the oil and gas industry is a major economic headwind and diversification is a top priority of economic development policy.
- An industry cluster framework can help policymakers and practitioners move beyond a focus on specific companies and, instead, prioritize actions that will have the greatest impact on long-term economic growth.
- The analysis detailed in this brief indicates a need for better alignment of investments and potential industry growth. Education and knowledge creation is one of the state's top-performing clusters.
- The Economic Development Department intends to conduct its own analysis of some industry's strengths and weaknesses as an extension of this framework.



Summary

New Mexico's largest economic challenges could be ameliorated by diversification. The state's industrial make up has long been defined by oil and gas, retail, and government. While these industries are an important foundation, industrial diversification is needed for the state to create more opportunities for residents, stabilize government revenues, and improve per capita income. This report analyzes New Mexico's industry make up by studying existing industrial clusters and provides a framework for policymakers to think strategically about economic development policies.

New Mexico Industry Concentration Lags Neighboring States

Super Sector	NM	AZ	CO
Natural resources & mining	3.03	0.79	1.14
Construction	1.18	1.28	1.25
Manufacturing	0.40	0.73	0.62
Trade, transportation, & utilities	0.90	1.04	0.94
Information	0.55	0.83	1.39
Financial activities	0.68	1.28	1.05
Professional & business services	0.96	1.00	1.16
Education & health services	0.98	1.02	0.78
Leisure & hospitality	1.08	1.02	1.13
Other services	0.83	0.89	1.01

Note: Value over 1 indicates industry is more concentrated in that state than in the United States.

Source: US BLS QCEW

New Mexico's Economic Headwinds

New Mexico's per capita income was the 46th lowest in the United States in 2023, little changed from a decade prior when the state was 48th. Without increasing benefit payments, one way the state can increase per capita income is to foster a healthy economy that creates jobs with higher wages and salaries. On that measure, too, New Mexico fairs poorly. Over the last decade, New Mexico private employment has grown by 6.8 percent, 6.4 percentage points slower than the west regional average. New Mexico's gross state product, or the value of all finished goods and services, also trailed the southwest regional average growth by 7 percentage points over that period.

New Mexico's lagging economic growth has many causes, but one of the driving factors is the state's overreliance on industries with little to no employment growth opportunities. One measure of that overreliance is the

Table 1. New Mexico Industry Clusters

Cluster	Share (%)
Local Health Services	16.5%
Local Hospitality Establishments	13.7%
Education and Knowledge Creation	6.5%
Local Education and Training	6.3%
Business Services	5.1%
Local Commercial Services	4.5%
Local Community and Civic Orgs.	4.3%
Local Real Estate, Cons., & Dev.	4.2%
Hospitality and Tourism	3.3%
Oil and Gas Production and Trans.	2.4%
Distribution and Electronic Commerce	2.3%
Local Food & Bev. Proc'ing & Distrib.	2.2%
Local Vehicle Products and Services	1.8%
Local Logistical Services	1.7%
Local Personal Services	1.6%
Local Financial Services	1.4%
Construction Products and Services	1.0%
Insurance Services	0.8%
Local Utilities	0.7%
Transportation and Logistics	0.7%
Food Processing and Manufacturing	0.5%
IT & Analytical Instruments	0.4%
Local Household Goods and Services	0.4%
Marketing, Design, and Publishing	0.3%
Video Production and Distribution	0.2%
Financial Services	0.2%
Agricultural Inputs and Services	0.2%
Performing Arts	0.2%
Local Industrial Products and Services	0.1%
Electric Power Generation and Trans.	0.1%
Livestock Processing	0.1%
Downstream Metal Products	0.1%
Biopharmaceuticals	0.1%
Jewelry and Precious Metals	0.1%
Nonmetal Mining	0.1%
All Local Clusters	***59.7%***
All Traded Clusters*	***40.3%***

*Traded clusters sell goods and services both locally and nationally, meaning they generate wealth for the state economy.

Note: traded clusters are limited to those that have more than 500 jobs. There are about 22 traded clusters with less than 500 jobs, comprising about 0.4 percent of total employment not presented in the share column but represented in the sum of all traded clusters employment.

Defining Industry Clusters

Industry clusters are regional concentrations of related industries related by knowledge, skills, inputs, and/or demand. They create a competitive advantage for the related firms in a particular region, which can become an enticement for similar industries and suppliers to those industries to develop or relocate to the region. This report uses the clusters as defined by Delgado, Porter, and Stern (2014), which uses an empirical framework to identify groups of closely related and complementary industries.

state's employment concentration, which measures the degree to which New Mexico specializes in an industry. The concentration score can be used as a starting point for identifying economic development strategies.

Comparing New Mexico's concentration scores to Arizona and Colorado reveals many of the state's underlying challenges. New Mexico's natural resources and mining industry has over three times the concentration than the United States average. Outside of that industry, construction, education and health services, and leisure and hospitality are all slightly more concentrated in New Mexico than they are nationally. In contrast, Arizona and Colorado both have multiple industries with concentrations over one—a number over one means employment in that industry is more concentrated than it is nationally. Colorado's information sector and Arizona's financial activities sector are examples of economic engines that have likely contributed to strong employment growth in these states.

New Mexico's geographic employment disparity is also a major obstacle holding back the state economy. While the statewide unemployment rate was 3.8 percent in March 2024, high unemployment rates in rural counties range from 4.4 percent in McKinley County to 6.3 percent in Sierra County, contributing to worse economic outcomes. This disparity in regional performance is evident in the state's two large metropolitan areas. From 2019 to 2023, private employment expanded by 3.9 percent in Albuquerque and by 5.2 percent in Las Cruces, both faster than the United States and other peer metros. In contrast, the rest of the state grew only 2.1 percent over that period, and some regions saw declining employment. For example, employment in Cibola County decreased by 9.4 percent over that same five-year period.

Industry Cluster Analysis

New Mexico's economy can be described as a set of industry clusters, which are concentrations of industries related by knowledge, skills, inputs, or demand. Although clusters can be defined in different ways, industry clusters provide a key insight for policymakers as interrelated employment drivers that can help optimize economic development policies by improving targeting and impact.

Often, economic development focuses on individual firms or specific events—expansions, relocations, or layoffs—but those approaches miss the opportunity to address the underlying causes of growth and development. Using clusters can better economic development by focusing public policies on those issues likely to have the greatest long-term effect on economic growth. Research also indicates economies are path-dependent, meaning economic growth comes through a process of extending, combining, and strengthening existing clusters, not by luring any single company.

Lastly, research has quantified the connections between clusters. For example, the education and knowledge creation cluster, which includes universities and research organizations, has connections with many other clusters, because

other industries use outputs from that cluster to produce their goods and services. Investments in a more connected cluster are going to generate broader prosperity than an investment in an isolated cluster.

This report uses the clusters as defined by Delgado, Porter, and Stern (2014)[1], which identified industry groups using quantitative analysis. The researchers defined 67 clusters, of which 16 were classified as "local" and the other 51 as "traded," meaning that they sell goods and services both locally and nationally. The clusters were created at the national level, and subsequent industry cluster analyses should define them at the New Mexico level to account for the state's specific context.

New Mexico's Clusters

New Mexico has 36 industry clusters with over 500 jobs.[2] Of those, 15 are local clusters and 21 are traded clusters. About 69 percent of New Mexico jobs are in local industry clusters, and about 40 percent of New Mexico employment is in traded industries. New Mexico's distribution of traded and local employment is about the same as US employment, 36 percent of which was made up of traded industries. This report—and successful economic development policies—focus on traded industry clusters because these industries represent economic base employment growth, generally pay more, are more likely to generate strong employment growth and create a positive wealth cycle. However, the healthy functioning of local industries is also essential.

New Mexico's traded clusters are anchored by three large clusters:

- Education and knowledge creation, comprising colleges, universities, scientific research organizations, and education and training establishments.
- Business services, comprising engineering firms, professional employer organizations, and consulting firms.
- Hospitality and tourism, comprising businesses serving recreational travel like hotels, museums, and many components of the outdoor recreation economy.

Identifying Top Clusters

This report organizes New Mexico's clusters into a prioritization matrix. Because resources are limited, policy interventions need to be focused on clusters most likely to have the greatest impact. Although alternative measures exist, this report uses industry competitiveness, wages, and regional diversity to rank clusters and help policymakers visualize how to prioritize industry investments. These criteria are discussed below.

Table 2. New Mexico Traded Industry Clusters

Cluster	Share
Education and Knowledge Creation	25.7%
Business Services	20.2%
Hospitality and Tourism	13.3%
Oil and Gas Production and Trans.	9.5%
Distribution	9.0%
Construction Products and Services	4.0%
Insurance Services	3.1%
Transportation and Logistics	2.9%
Food Processing and Manufacturing	2.1%
IT and Analytical Instruments	1.8%
Marketing, Design, and Publishing	1.0%
Video Production and Distribution	1.0%
Financial Services	0.9%
Agricultural Inputs and Services	0.8%
Performing Arts	0.8%
Electric Power Generation & Trans.	0.4%
Downstream Metal Products	0.4%
Biopharmaceuticals	0.4%
Jewelry and Precious Metals	0.3%
Nonmetal Mining	0.3%

The share column represents the proportion of employment in that cluster versus all traded industries. This table is limited to clusters that have more than 500 jobs. There are about 22 traded clusters with less than 500 jobs, comprising about 0.4 percent of total employment not presented in the share column but represented in the sum of all traded clusters employment.

Source: LFC Files

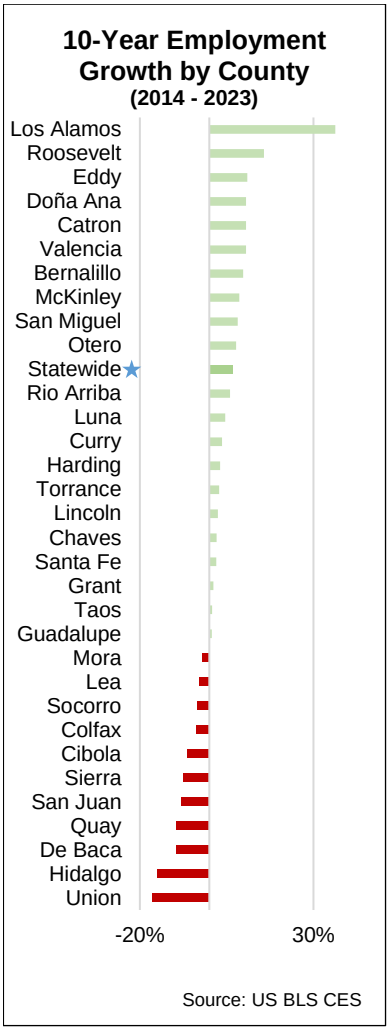
Challenges Identified by 2023 EDD Strategic Plan

- Lack of collaboration between economic development stakeholders.
- Difficulty attracting and retaining talent in urban, rural, and tribal communities.
- Misalignment between higher education and industry.
- Disengagement of socioeconomically disadvantaged communities in planning process.
- Public sector dominance in New Mexico's innovation ecosystem.
- Concentration of the economy in a few key industries.

Source: EDD Strategic Plan

[1] Delgado, Porter, and Stern, 2016. "Defining clusters of related industries," Journal of Economic Geography, vol 16(1), pages 1-38.

[2] This report analyzes clusters with over 500 jobs to limit the scope and focus on clusters that make up a significant portion of statewide employment. Subsequent cluster analyses could expand this scope.



Competitiveness. A cluster's competitive edge is the degree to which the New Mexico economy either propels or hinders growth in a cluster. Some large New Mexico industry clusters identified with a competitive advantage include:

- Education and knowledge creation,
- Transportation and logistics,
- Oil and gas production and transportation,
- Food processing and manufacturing.

Assessing competitiveness is critical because policy interventions aimed at strengthening clusters without a competitive advantage requires a different set of interventions than strengthening clusters with a competitive advantage.

To understand competitive advantage, consider that business inputs have different costs in different regions. The two largest business inputs are labor (a skilled workforce) and capital (infrastructure, equipment, and financing). Hiring skilled workers is cheaper if there are many people with the necessary skills locally. If there are not enough people with the skills the business needs, it will either need to attract personnel from out of state or train in-state workers, both of which are costly and may result in businesses relocating to where a cluster has a competitive advantage. The same goes for physical infrastructure, including sewerage, water, electricity, and broadband. It is cheaper for a business to locate where basic infrastructure is available and reliable than to construct it in a location where it does not exist.

Though best practice would call for a case-by-case qualitative evaluation, this analysis uses an approach called shift-share analysis. This approach is common in economic development research to approximate a cluster's competitive edge using quantitative methods. The process is twofold. First, this analysis estimates employment growth in each cluster had the cluster followed national and industry trends. The estimated employment growth in each cluster is then compared with actual growth. This report estimates competitiveness using a shift-share analysis with US BLS data.

If an industry in New Mexico performs better than the national industry average, it may have a competitive advantage in New Mexico. Conversely, an industry growing more slowly in New Mexico than its national average may be at a competitive disadvantage locally.

Wages. Creating jobs in industries with high wages is an important element of raising state per capita income. Clusters with higher-than-average wages can be prioritized while clusters with lower-than-average wages require special analysis and attention to develop industries within clusters with high wages and building connections with high-wage sectors. This report measures the average cluster wages—weighted by the number of jobs—using US BLS data.

Regional Diversity. There are dramatic regional differences within New Mexico's economy. For example, over the last 10 years, New Mexico's employment levels increased by about 6 percent. But, over that period, employment in 11 counties decreased. Twelve counties had yet to see private employment return to prepandemic levels by the end of 2023 even though the state, as a whole, has surpassed prepandemic levels by 2.4 percent.

Research indicates regional diversity is an important component of economic development policies for two reasons. First, investing in distressed labor markets promotes equity because those communities are more likely to have lower socioeconomic outcomes. Second, research suggests a job created in the most stressed labor markets in New Mexico could increase long-term employment in that region by 80 percent more than in the strongest labor markets in the state.

Consider a job created through an economic development incentive. Assuming the job is a net gain to the state economy, the job can be filled in three ways: first, by a local resident who is already employed; second, by a local resident who is not employed; and, third, by a person from out of the state. If a job is filled by a local resident who is already employed, that leads to another job vacancy, which must be filled in the same three ways. The resulting job vacancy chain is only ended when a new job results in an additional job for a local resident who otherwise would not be employed or in a job going to a new resident drawn by the job otherwise would not have moved to the local area. Evidence suggests areas with lower employment rates have a higher proportion of new jobs filled by nonemployed residents. Evidence suggests a job created in a labor market with a prime-age employment-to-population ratio in the bottom 10th percentile will increase long-term employment in that region by 80 percent more than a job created in an average labor market.

To identify industry clusters that may benefit more distressed labor markets in the state, the regional diversity of each industrial cluster is estimated by grouping New Mexico counties into 10 regional groups using U.S. Department of Agriculture commuting zones. Clusters are then classified as either regionally diverse or not by analyzing the distribution of employment in that cluster across regions.[3]

Future Considerations. These three quantitative prioritization measures are not exhaustive, and subsequent cluster analyses should consider other factors, like specialization, size of firms, cluster development stage, inter-firm dependence, complex knowledge requirements, and the types of employment opportunities available.

Case Study

St. Louis has focused on the agricultural technology cluster to spur dynamism in the region. The St. Louis agtech cluster has always been principally defined by the handful of key entities at its core. A 2000 analysis characterized the industry as being dangerously top-heavy. Between 2000 and 2015, the number of jobs in agtech research laboratories doubled. Today, it is defined principally by its knowledge base. The emphasis on the cluster's knowledge base also reflects the fact that the local industry is increasingly characterized by labor market fluidity, spinoffs from research labs, and cross-sector research. The region took a broad approach with parallel strategies focused on major areas of need like capital, talent, facilities, and networks. BioSTL continued to convene a coalition of approximately 50 leaders on a quarterly basis and includes public sector representatives.

Source: Donahue 2018

Table 3. Average Annual Wage of Industry Clusters

Cluster	Avg. Wage
IT and Analytical Instruments	$111,500
Video Production and Distribution	$95,900
Oil & Gas Production/Trans.	$93,900
Financial Services	$81,800
Insurance Services	$74,300
Education and Knowledge Creation	$73,500
Electric Power Generation & Trans.	$73,400
Jewelry and Precious Metals	$73,300
Transportation and Logistics	$69,200
Business Services	$68,200
Median*	**$67,200**
Distribution	$66,200
Construction Products and Services	$64,900
Downstream Metal Products	$63,600
Nonmetal Mining	$60,100
Biopharmaceuticals	$57,400
Marketing, Design, and Publishing	$56,400
Food Processing and Manufacturing	$43,500
Hospitality and Tourism	$40,500
Performing Arts	$39,900
Agricultural Inputs and Services	$30,300

Note: Cluster wages were weighted with the number of an industry's jobs.

*The median value is median weighted wages across all traded industry clusters in New Mexico that employ over 500 workers.

Source: LFC Files, US BLS QCEW

[3] Distribution was quantified by analyzing the number of regions that had at least 2 percent of a cluster's total employment. Clusters with at least three regions that satisfied this benchmark were considered regionally diverse.

Prioritization Matrix – Wages, Competitiveness, and Regional Diversity

More competitive

• **Food Processing & Manufacturing** • **Hospitality & Tourism** • Livestock Processing • Marketing, Design, and Publishing • Nonmetal Mining • Performing Arts	• **Education & Knowledge Creation** • **Transportation & Logistics** • Oil and Gas Production & Transportation • IT & Analytical Instruments • Video Production & Distribution
• **Agricultural Inputs & Services** • **Distribution** • **Construction Products & Services** • Biopharmaceuticals • Downstream Metal Products • Livestock Processing	• **Business Services** • **Electric Power Generation & Transmission** • Financial Services • Insurance Services • Jewelry & Precious Metals

Lower Wages ← | Higher Wages →

Less competitive

Regional Diversity: Clusters that are **bolded** are classified as having more regional diversity.

Strategies for Development

Two New Mexico industry clusters have positive competitive factors, higher-than-average wages, and are regionally diverse: education and knowledge creation, and transportation and logistics. These two clusters likely have existing strengths and are helping drive statewide employment growth. However, this report neither recommends nor does not recommend that a future economic development strategy prioritizes these clusters. Rather, the matrix highlights opportunities for policies that would help growth across all clusters, as discussed below.

Improving Competitiveness. Eleven of the state's 21 traded clusters, representing 41 percent of employment in traded industries, have a competitive disadvantage in New Mexico. This is a sign that business inputs for those clusters in New Mexico may be more costly than they are elsewhere, implying employment growth is being held back by a lack of labor force, infrastructure, access to capital, or a combination of all three factors. The highest impact economic development intervention will be either improving the skills of the resident workforce, increasing reliable infrastructure, or improving access to capital, or all three. Large clusters with low competitiveness include:

- Business services,
- Distribution,
- Construction products and services.

Improving Wages. Twelve of the state's 21 tradeable clusters, representing 24 percent of employment in traded industries, have wages that are below the median among jobs in traded industries. Policymakers should focus on building connections between low-wage and high-wage clusters by better incentive targeting or focusing on the highest wage sectors of those clusters. For example, jobs in outdoor recreation industries in the hospitality and tourism cluster have wages that are 29 percent higher than that cluster's

average but only make up 10 percent of jobs in that cluster. Building those industries will help raise wages. Future analyses should evaluate wages at the regional level because cluster wages are different across the state.

Improving Regional Diversity. Thirteen of the state's 21 tradeable clusters, representing 20 percent of workers in tradeable industries, do not have a substantial presence in three or more regions. Generally, these clusters are centered in the Albuquerque-Santa Fe region. Policymakers should focus on improving geographic connections with regionally isolated clusters with regionally diverse clusters. For example, the biopharmaceuticals cluster is primarily based in the Albuquerque-Santa Fe region. However, that cluster has strong connections with the education and knowledge creation cluster, which is regionally diverse. The state could proactively build connections between the clusters to improve regional equity and outcomes. Other clusters that the state might consider building connections with include:

- video production and distribution,
- financial services,
- marketing, design, and publishing.

Future Considerations. This analysis is limited to industry clusters with more than 500 jobs to limit the scope. However, subsequent cluster analyses should explore nascent and emerging clusters that, despite their size, have a potential to make an impact in the long-term.

Current Industry Targeting May Not Optimize Impact

Target Industries. The state's current economic development strategy centers around nine target industries, reflected in table 4. Many of the industries represent relatively small proportions of statewide employment. Five of the nine target industries each make up 0.5 percent or less of total statewide employment. The aerospace target industry is the largest, but the industry definition may be misleading. As defined, over 95 percent of the employment in the "aerospace" industry is in science and technology research and development, which includes, but is not entirely made up of, the aerospace industry. Excluding that industry code, the aerospace target industry would be less than 0.1 percent of total private employment.

Further, at least 70 percent of jobs in the current target industries are in Bernalillo County. Targeting incentives to one of the state's highest-performing counties may have less impact on long-term outcomes compared with incentives targeted at lower-performing areas.

Economic Development Incentives. New Mexico's largest economic development incentives mostly benefit select industries. For example, in FY23, 53.8 percent of economic development incentives went to the film and manufacturing industries, which make up about 4.6 percent of total private employment. The film industry, which makes up about 0.4 percent of total private employment, received 40.3 percent of total economic development incentives.

Table 4. Analysis of Target Industries

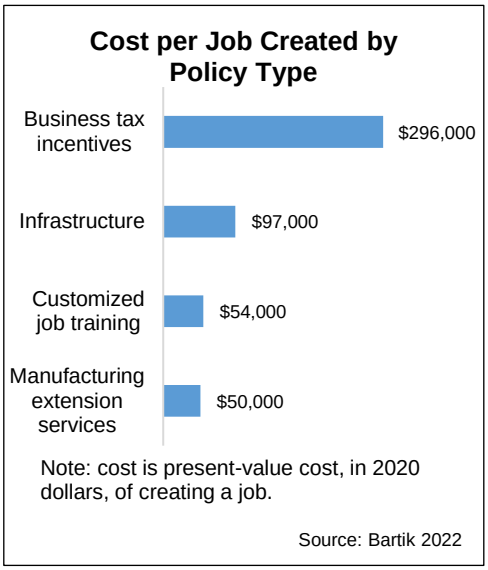
Target Industry	% of emp.
Aerospace	3.6%
Intelligent Manufacturing	1.8%
Outdoor Recreation	1.4%
Global Trade	0.8%
Cybersecurity	0.5%
Biosciences	0.5%
Sustainable & Value-Added Ag	0.4%
Sustainable and green energy	0.4%
Film & Television	0.3%

Note: percent of total statewide employment.
Source: US BLS

Table 5. FY23 State Economic Development Incentives
(in thousands)

Program/Incentive	Spending	Share
Film tax credit	$100,240	40.3%
Manufacturer's CIT apportionment	$33,490	13.5%
LEDA GRT distributions	$18,637	7.1%
JTIP	$16,944	6.5%
LEDA	$14,400	5.8%
TIDDs (4 statewide)	$12,660	5.1%
Headquarters CIT apportionment	$11,772	4.7%
Investment credit	$9,488	3.8%
Medical supplies GRT deduction	$5,600	2.2%
Technology jobs & R&D credit	$4,965	2.0%
Laboratory partnership credit	$4,550	1.8%
High-wage jobs tax credit	$4,142	1.6%
Sales to credit unions deduction	$1,748	0.7%
Aircraft sales GRT deduction	$1,666	0.6%
All other 10 tax incentives	$7,488	3.6%
Total	**$248,224**	

Source: TRD, LFC Files



Case Study

Since 2016 the state has spent $215 million on tax incentives for manufacturing firms through a special tax apportionment election option. Over that period, New Mexico's manufacturing industry grew by about 650 jobs, or 2 percent, for an average cost per job of over $300 thousand. Large tax incentives with a narrow set of beneficiaries are more costly than other programs that seek to lower the cost of business activity through workforce development, targeted trainings, and high-quality infrastructure development.

Source: LFC Files

In contrast, incentives designed to support technology and research and development businesses make up a small share of incentive spending. The state's largest incentives designed to benefit those industries—the technology jobs and research and development tax credit and the laboratory partnership credit—made up just 3.8 percent of incentive spending in FY23.

In part, these findings reflect the challenge in attracting jobs outside of clustered and competitively advantaged industries in New Mexico, which may be more resource intensive than if those resources were focused on locally advantaged industries. The cluster framework offers opportunities to maximize economic development impact.

Policy Considerations

To improve long-term economic growth outcomes, the Economic Development Department should use a cluster-based framework based on a formal, New Mexico-specific industrial cluster analysis.

The Legislature should address structural challenges in industry clusters. The Legislature may consider accomplishing this by focusing current business tax incentives on the highest impact industries.

The Legislature should strengthen its evaluation of economic development policies and practices.