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2023 Connecticut Manufacturing Report

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CONNECTICUT MANUFACTURING'S ECONOMIC POWER

EMPLOYEES

157,600
Manufacturing employees (as of Aug. 2023)

MANUFACTURERS

4,548
Manufacturing companies (as of July 2023)

WAGES

$14.7 BILLION
Total manufacturing salaries

$92,633
Average manufacturing wage

TAXES

$178.8 MILLION
State corporate taxes paid (2020)

$292.3 MILLION
State sales & use taxes paid (2020)

MULTIPLIERS

5 ADDITIONAL JOBS
What each manufacturing job creates in other parts of the economy

$31.45 BILLION
Manufacturing accounted for 10% of the state's GDP in 2022

$2.60
Amount generated in additional activity for every $1 spent in manufacturing

EXPORTS

$15.3 BILLION
Total manufacturing exports in 2022

DEFENSE

$22.6 BILLION
Connecticut manufacturing defense contract spending in 2022

Sources: U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, U.S. Department of Defense, U.S. Census Bureau, National Association of Manufacturers, Connecticut Department of Revenue Services, Connecticut Department of Labor.

FOREWORD

When I was leading a manufacturing company, during strategic planning sessions we would often say "just once, I would like to have a normal year."

This year is no different than any other—challenges such as critical workforce shortages, supply chain issues, rising prices due to inflation, and the rising cost of doing business all impact our manufacturing economy.

So, there never is a normal year. We continue to adapt to the environment around us, working to ensure the sector remains a critical part of Connecticut's economy.

Manufacturing jobs change the lives of individuals and communities with high wages, advancement opportunities, and employment for people of all ages and socioeconomic backgrounds. We have high school graduates working alongside PhDs on our shop floors, making products that are integral to everyday life.

In 2023, we launched the Manufacturing Strategic Plan. This plan contains three pillars: workforce, supply chain, and industry growth, all supported by a platform of innovation.

Connecticut's manufacturing history is deeply rooted in innovation and our Made Here. By Me. marketing campaign highlights those roots.

We have 4,500-plus manufacturers in the state, employing more than 157,000 people. The average manufacturer is small but mighty, with grit, determination, and nimbleness, which directly impacts our ability to be innovative and seamlessly respond to market forces.

Having a well-trained workforce is the number one factor preventing growth in the manufacturing sector. When we look at workforce, we must look at solutions in three dimensions: workforce development, workforce growth, and workforce innovation.

Connecticut has one of the best developed workforce development systems in the country. With a chief workforce officer, Office of Workforce Strategy, Department of Labor, and the workforce boards and ecosystem, we are a national leader in reskilling and upskilling the manufacturing workforce.

Regarding workforce growth, the governor and legislature have enacted programs to accelerate the development of workforce housing, provide quality childcare, and improve transportation options, all designed to get people back to work.

However, we must face the stark reality that we will never solve the workforce problem with people. There are just not enough people. We must develop industrial automation solutions that will allow technology to do the work of people that are just not available.

This is not a job elimination strategy—in fact, we will be upskilling jobs to meet the demand for automation. Machines are necessary to maximize throughput and productivity in the manufacturing sector.

The Office of Manufacturing will be working in all three dimensions to solve the workforce problem. It is the only way to a solution.

We continue to experience supply chain issues.

We must shorten the supply chain by moving work back to Connecticut through reshoring, and ensure that all manufacturers are connected to one another and understand local capabilities and the capacity within our manufacturing ecosystem.

In 2023, we launched the CONNEX supply chain program to connect our manufacturing companies with each other and provide access to a national database. We have enjoyed early success with this key initiative to connect our manufacturing community. Remember, you cannot spell Connecticut without Connect!

We have unique opportunities to grow our manufacturing base. Our leadership position in defense manufacturing is strong and we continue to be one of the top states supporting the U.S. military and the sovereignty of our country and the safety of the world.

We continue to innovate in many areas of manufacturing, including, but not limited to, medical device manufacturing, chemical manufacturing, food and beverage manufacturing, and high precision and high value manufacturing. We also have a once in a generation opportunity to build a workforce and supply chain to support the offshore wind industry.

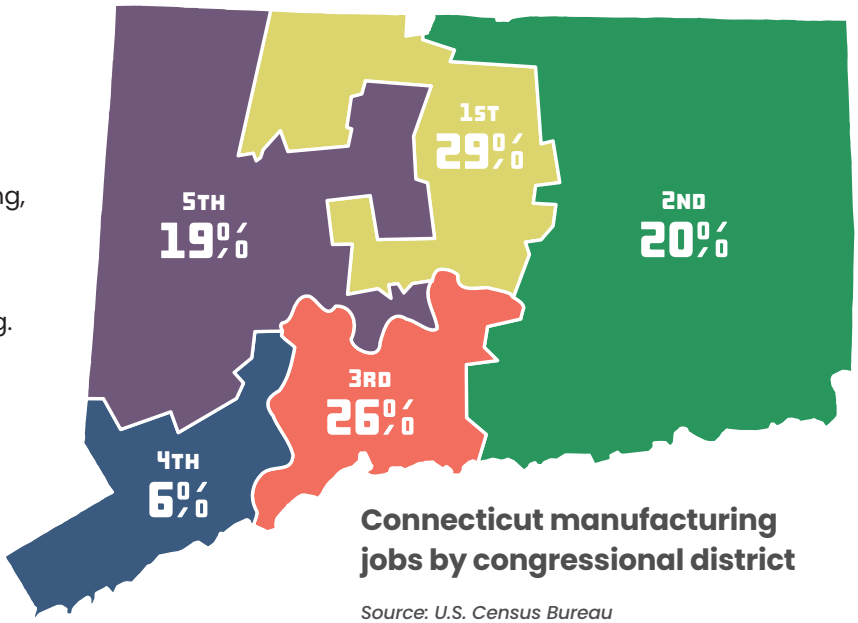
I am optimistic about the future of manufacturing in Connecticut. As we look at the manufacturing landscape throughout the country, our state punches well above its weight class and we lead the nation in many areas.

Connecticut has prioritized effective leadership, made smart investments in direct supplier support programs, and has collectively agreed that workforce, supply chain, and innovation are our top priorities—today and tomorrow.

With this knowledge, Team Connecticut has created a vibrant manufacturing ecosystem. While we are strong as individual entities, we will be invincible in manufacturing as a team.

The best has yet to come.

— PAUL LAVOIE
Chief Manufacturing Officer, State of Connecticut



Connecticut manufacturing jobs by congressional district

Source: U.S. Census Bureau

INTRODUCTION

The 2023 Connecticut Manufacturing Report is produced by CBIA and affiliates CONNSTEP and ReadyCT, and made possible again this year through the generous support of RSM.

This year's report reviews the state of the manufacturing sector, examines the scope of the economic recovery, and explores the future outlook, including growth factors, policy priorities, and hiring and investment trends.

Leveraging the state's strong fiscal position, Connecticut lawmakers this year passed a two-year, $51 billion state budget featuring a historic $460 million in income tax cuts for individual taxpayers.

The budget also featured funding for housing and education initiatives, as well as $15 million annually for the state's Manufacturing Innovation Fund, a popular program driving innovation, technology, and workforce initiatives for small and midsize manufacturers.

Additional two-year funding was provided for the Connecticut Technical Education and Career System ($380 million), Manufacturing Pipeline ($4.6 million), AdvanceCT ($4 million), and the manufacturing growth services organization CONNSTEP ($1 million).

This year also saw the release of the state's first strategic manufacturing plan, a much-anticipated blueprint featuring ambitious job and GDP growth targets.

That plan features key strategic initiatives and tactics designed "to make Connecticut the internationally recognized leader in manufacturing through innovation and the growth of our manufacturing base."

Is Connecticut paving the way towards a more business-friendly environment for manufacturers? Can the state's manufacturing sector boost its competitiveness? What are the main issues impacting growth opportunities?

The labor shortage continues to impact sector growth. While Connecticut manufacturers added 4,300 jobs in 2022—at 2.7% outperforming overall job

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growth of 1.6%—sector employment fell 0.9% through the first eight months of 2023. U.S. manufacturing employment grew 3.1% in 2022, with year-to-date growth at 1.7%.

Connecticut's labor force declined for an eighth consecutive month through August 2023, and is now 2.1% below pre-pandemic levels, further challenging employers trying to fill the state's 92,000 job openings—an estimated 9,000 in manufacturing.

While the labor shortage is a national issue, the U.S. manufacturing recovery is relatively robust, with the sector now employing 212,000 more people than before the pandemic.

The state's economy expanded 2.4% in 2022—17th best in the country—despite lackluster fourth quarter growth of 0.1%. Durable goods manufacturing grew 0.09% in 2022 while nondurable goods expanded 0.07%.

Momentum stalled again in the first quarter of 2022, with overall GDP growing just 0.3% amid declines in key sectors, including a 0.71% contraction in durable goods manufacturing and a 0.07% decline in nondurable goods.

Connecticut manufacturers are finding ways to find and engage employees—for instance, the average manufacturing wage grew 3.4% in 2022 to $92,633, 14% higher than the state's average wage—while navigating persistent supply chain challenges and inflationary pressures.

As this report demonstrates, Connecticut manufacturers remain resilient in the face of economic uncertainty and the state's high cost of living and doing business, leveraging innovation and technology as they adjust to rapidly evolving perceptions of logistics and supply chain systems, business models, consumer behavior, careers, and the workplace.

This report offers critical insights into Connecticut's manufacturing sector and highlights the numerous opportunities—requiring a greater sense of purpose and commitment from policymakers—to unlock its full potential.

The information and data shared in the 2023 Connecticut Manufacturing Report were drawn from multiple sources, including a comprehensive June 12-July 17 CBIA survey of manufacturers, numerous state and federal agencies, and interviews with public and private sector manufacturing leaders.

KEY TAKEAWAYS

- 86% of Connecticut manufacturers report difficulty finding and/or retaining employees—essentially unchanged from last year
- The lack of skilled job applicants is the greatest obstacle to growth for 48%, up four percentage points from last year
- 91% of manufacturing leaders say the cost of doing business in Connecticut is increasing, driven by rising labor costs and high taxes
- 23% expect the state's economy to grow in 2023, while 30% forecast U.S. economic growth
- 43% say the state's business climate is static, 36% believe it's declining (down 17 points from last year), and 8% see improvement
- More than half (57%) expect their workforce to remain stable over the next six months, with 33% projecting growth

- 77% of Connecticut manufacturers reported profits in 2022, up from 67% in 2021, and 66% expect a profitable 2023
- Investment in properties and facilities is the main priority for 37%, followed by employee retention and recruitment (27%)

MANUFACTURING AT A GLANCE

Who makes goods in Connecticut?

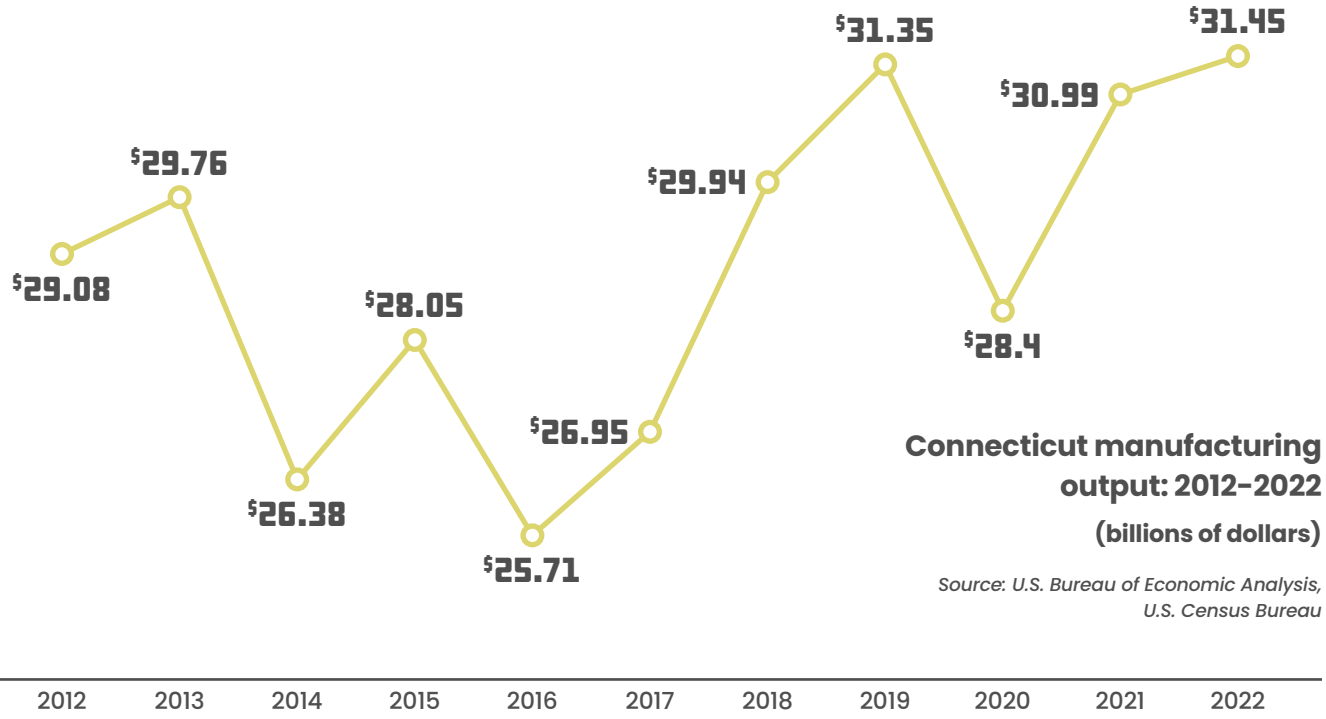
The state's 4,548 manufacturers are generally well-established companies with a commitment to growth and economic stability. Based on CBIA's 2023 survey, the average manufacturer has operated for 73 years, with 80% in business for 20 years or more.

Seventy-two percent are small businesses with less than 50 employees, while 28% employ 50 or more workers. Those percentages mirror the national picture, where the overwhelming majority of manufacturers are also small businesses.

Twenty-nine percent of Connecticut's manufacturing jobs are in the First Congressional District, which covers 27 cities and towns in Hartford, Litchfield, and Middlesex counties.

The state's Third District, centered on New Haven County, parts of Middlesex County, and most of Stratford and parts of Shelton in Fairfield County, is home to 26% of manufacturing jobs.

Twenty percent are located in the Second District, covering all of New London, Tolland, and Windham counties and parts of Hartford, Middlesex, and New Haven counties.



Connecticut manufacturing output: 2012-2022
(billions of dollars)

Source: U.S. Bureau of Economic Analysis, U.S. Census Bureau

The Fifth District, which includes New Britain, most of Waterbury, the Housatonic Valley, Farmington Valley, Upper Naugatuck River Valley, and the Litchfield Hills hosts 19% of sector jobs while 6% are located in the Fourth District, covering most of Fairfield County.

More than one-fifth (21%) of manufacturing companies are privately-held, with another 21% family-owned. Twenty percent are S-corporations, 11% are C-corporations, and 8% are incorporated. Seven percent are women-owned, 6% are LLCs, 4% are veteran-owned, and 1% are publicly held.

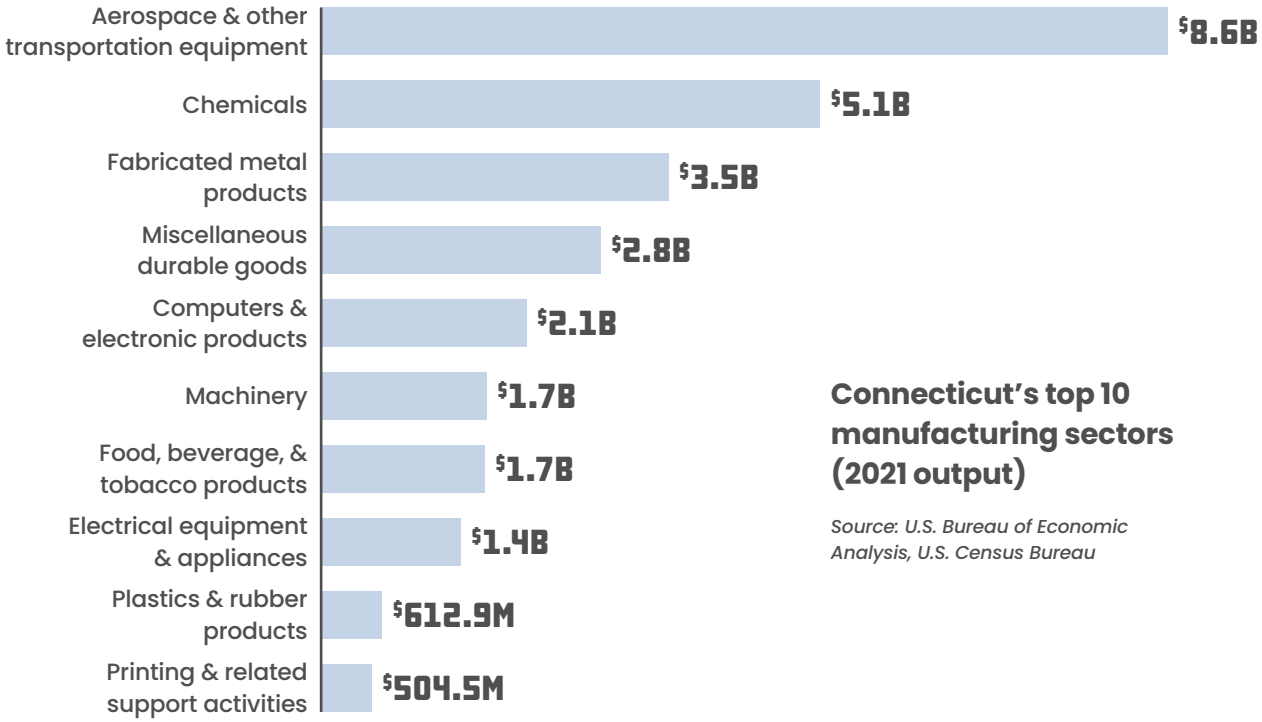
Ninety-six percent of survey respondents have their primary facilities in Connecticut, less than 1% have their primary facility in another state, and 2% have lead facilities outside the U.S.

As of August 2023, manufacturing businesses employed 157,600 people in Connecticut, accounting for 9.3% of all jobs in the state. The sector paid $14.7 billion in wages and benefits in 2022, with an average salary of $92,633, 14% higher than the state's average wage of $81,237.

Connecticut manufacturing employment declined by 1,200 jobs (0.75%) over the past 10 years, peaking at a decade-high 162,300 in July 2019. Over the same period, U.S. manufacturing jobs grew 7.6%. Since 2013, overall employment in the state increased 1.9%, with U.S. job growth at 13.9%.

As of August, 2023, Connecticut manufacturing has recovered 72% of the 11,900 jobs lost in March and April of 2020 to COVID restrictions and shutdowns, with sector employment 2% below pre-pandemic levels. The state's overall pandemic jobs recovery is 99%.

Nationally, manufacturing has recovered all COVID job losses, with sector employment 1.7% above



Connecticut's top 10 manufacturing sectors (2021 output)

Source: U.S. Bureau of Economic Analysis, U.S. Census Bureau

pre-pandemic levels. The overall U.S. pandemic jobs recovery rate is 118%.

Manufacturing is critical to Connecticut's overall economy, creating up to five additional jobs for every manufacturing job and generating $2.60 in additional economic activity for every dollar spent.

Connecticut manufacturers also pay $178.8 million annually in state corporate taxes, and $292.3 million in sales and use taxes.

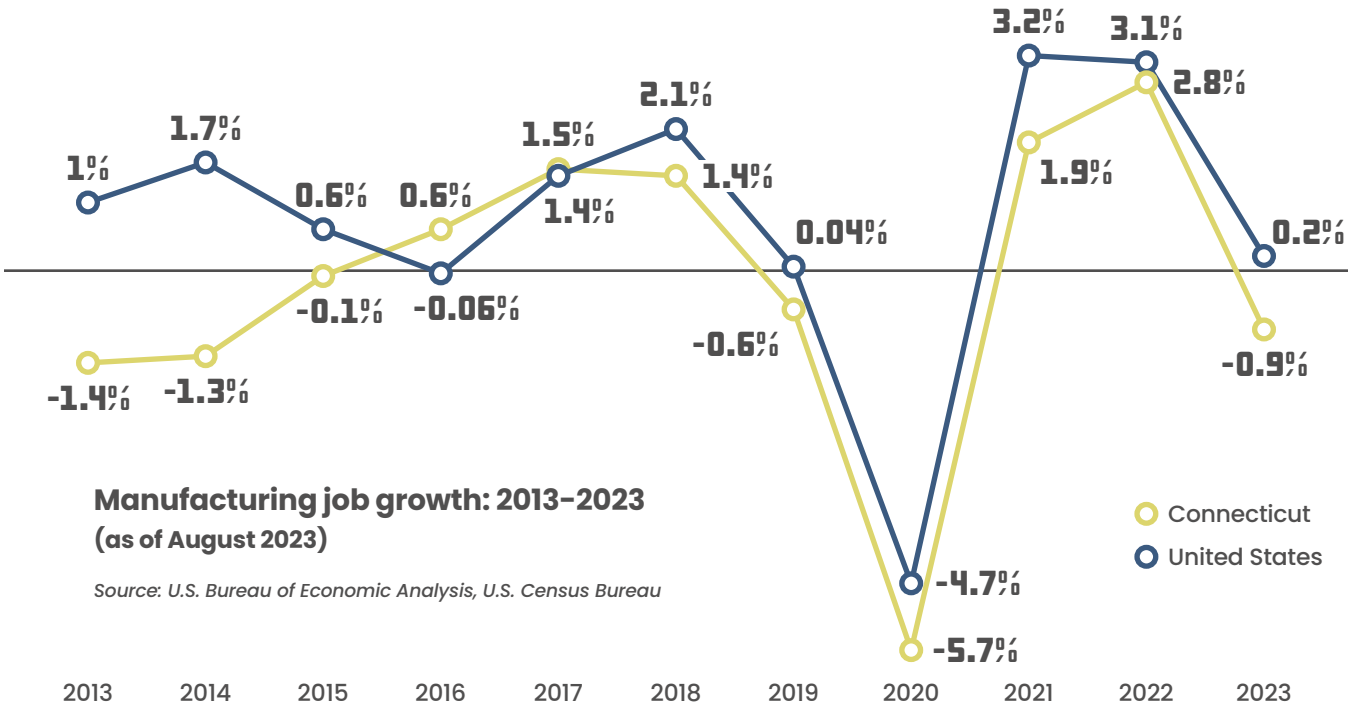
The state's annual manufacturing output increased 1.5% to a record $31.45 billion in 2022—representing 10% of Connecticut's annual GDP—including $15.3 billion in commodity exports.

Based on U.S. Bureau of Economic Analysis data, aerospace and transportation equipment remains the largest manufacturing subsector in Connecticut, responsible for $8.6 billion of annual output.

Chemicals manufacturing accounts for $5.1 billion, followed by fabricated metal products ($3.5 billion), miscellaneous durable goods ($2.8 billion), computers and electronics products ($2.1 billion), machinery ($1.7 billion), food, beverage, and tobacco products ($1.7 billion), electrical equipment and appliances ($1.4 billion), plastics and rubber products ($612.9 million), and printing and related support activities ($504.5 million).

Connecticut's economy expanded 2.4% in 2022—17th best in the country—despite lackluster fourth quarter growth of just 0.1%. The six New England states averaged 1.9% growth last year, while U.S. GDP grew 2.1%.

Momentum stalled again in the first quarter of 2023, with Connecticut's GDP growing just 0.3%—sixth slowest in the U.S.—amid productivity declines in



Manufacturing job growth: 2013–2023
(as of August 2023)

Source: U.S. Bureau of Economic Analysis, U.S. Census Bureau

a number of key industry sectors. Regional GDP expanded 1.6% and the U.S. economy grew 2% in the quarter.

Durable goods manufacturing shrank 0.71% in the first quarter of 2023, while nondurable goods manufacturing declined 0.07%.

Connecticut commodity exports increased 5.47% in 2022 to $15.3 billion, despite a significant decline in shipments to China and Germany. Companies exported $800 million more in goods in 2022, with six of the state's top 10 export markets posting double digit percentage increases.

However, exports have yet to fully recover from pandemic disruptions, with 2022 shipments about $700 million (-4.4%) below 2019 levels. Commodity exports accounted for 4.8% of the state's GDP last year.

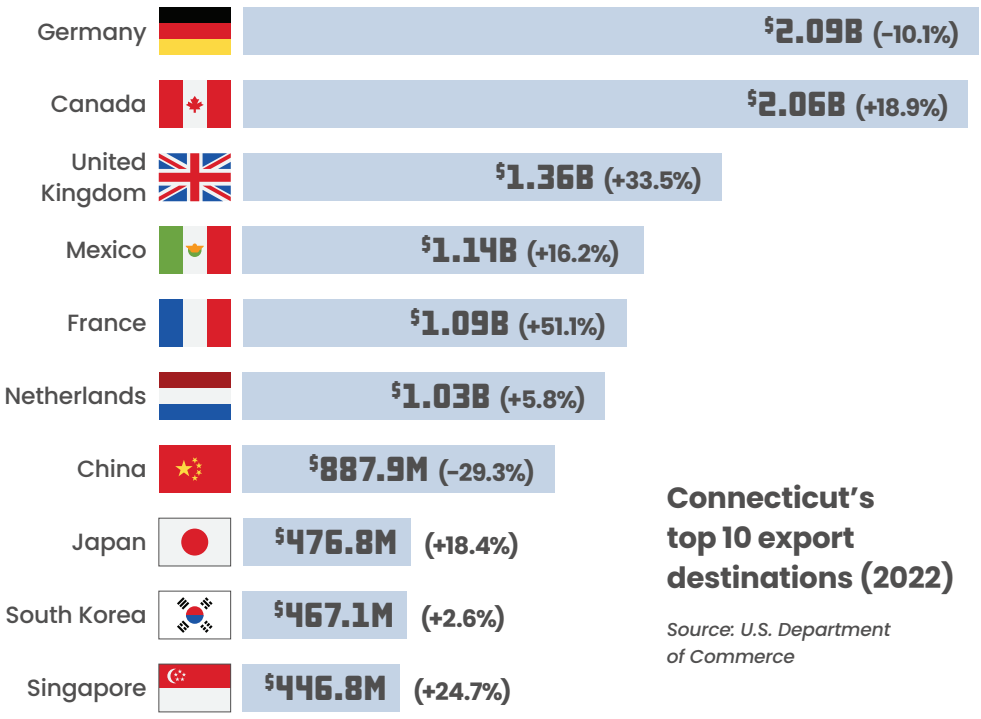
Exports to France posted the largest percentage gain last year, increasing 51.1% to $1.09 billion, making that country Connecticut's fifth largest export market. United Kingdom commodity sales rose 33.5% to $1.36 billion, followed by Singapore (24.7%), Canada (18.9%), Japan (18.4%), Mexico (16.2%), the Netherlands (5.8%), and South Korea (2.6%).

Exports to China—which was the state's third largest market—fell more than $410 million in 2022 to $887.9 million, pushing that country to seventh. Shipments to Germany—which remains the state's largest commodities market—fell $240 million (-10.1%).

At $4.7 billion, aircraft, spacecraft, and parts represented the greatest share of commodity exports, up 3.9% from 2021 and down $1.5 billion from 2019.

Exports of industrial machinery, including computers, hit $3.23 billion (+8.39%), followed by optic, photo, and medical equipment ($1.32 billion; +2.6%), electric machinery ($1.29 billion; +7.5%), and plastics and articles ($542.7 million; +12.3%),

Connecticut is the number two exporter in New England behind Massachusetts, which shipped $32.7 billion in goods last year. New England commodity shipments increased 3.5% to $64.14 billion in 2022, bringing regional exports back to pre-pandemic levels.



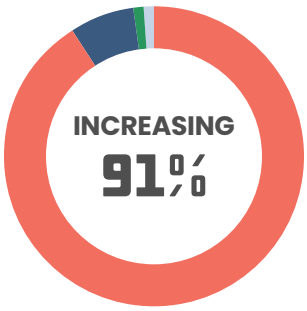
Connecticut's top 10 export destinations (2022)

Source: U.S. Department of Commerce

Canada, Germany, China, Mexico, and the Netherlands were the region's top five markets last year.

U.S. commodity exports increased 17.5% to more than $2.06 trillion in 2022, with Canada, Mexico, China, Japan, and the United Kingdom the top five markets.

Connecticut ranked 32nd nationally for exports, with Texas, California, Louisiana, New York, and Illinois the top five exporting states.

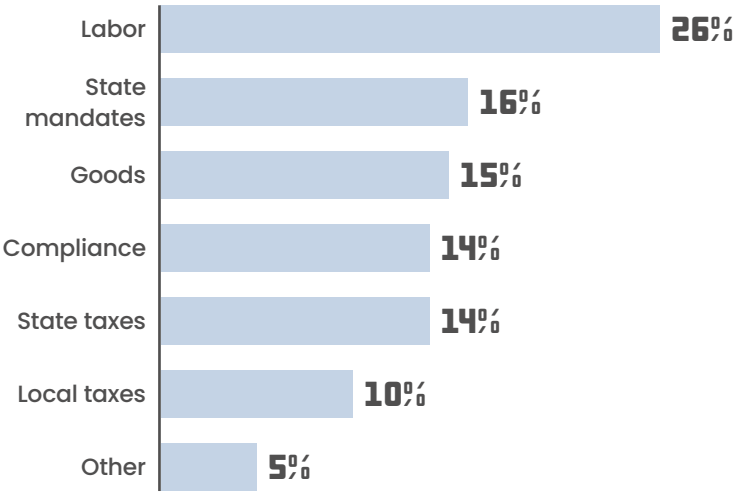


Is the cost of doing business in Connecticut...

- Increasing (91%)
- Remaining the same (7%)
- Decreasing (1%)
- Unsure (1%)

Source: CBIA June-July 2023 Connecticut manufacturing survey

What Connecticut-specific costs are increasing for you?



Source: CBIA June-July 2023 Connecticut manufacturing survey

STATE OF MANUFACTURING

When CBIA surveyed Connecticut manufacturing leaders last year, 68% forecasted a profitable 2022, 18% expected to break even, and 14% projected losses. The actual results mostly bettered those forecasts, with 77% of those surveyed this summer returning a profit in 2022, 7% breaking even, and 16% posting losses.

The leading factor driving profits in 2022 was an increase in sales, cited by 19% of surveyed manufacturers. While some took advantage of high demand, others made more strategic changes.

As one respondent noted, they focused on "reducing costs and increasing pricing to adjust for inflationary pressures." Another commented on the positive impact of "revenue returning to pre-pandemic levels and managing expenses accordingly."

Fourteen percent attributed profitability to cutting costs and boosting business efficiency. One executive shared that they participated in a "company-wide effort to reduce and control costs." Nine percent (9%) cited selling better products while 7% credited improved economic conditions.

Rising costs, particularly labor-related costs, were the main drivers of manufacturing losses.

Ninety-one percent of surveyed manufacturers said the cost of running a business in Connecticut is increasing, led by rising labor costs (26%), state mandates (16%), goods (15%), compliance (14%), state taxes (14%), and local taxes (10%).

Of those that posted losses in 2022, 26% cited cost pressures, up 11 percentage points from the previous year. Almost a quarter (24%) pointed to sales declines, followed by supply chain and product issues (13%), and economic conditions (8%). This year, only 8% mentioned the pandemic as a contributing factor for losses, down from 22% in 2021.

As one respondent said, "operating costs exceed diminishing sales orders," reflecting the sentiments of other manufacturers. Another noted that manufacturing is a "growth business, spending lots on headcount and marketing."

Some manufacturers also dealt with quality control and availability issues with raw materials, which also led to losses. "Product issues in the manufacturing plant," one executive said. "Raw material not available," commented another.

Manufacturing executives are split as it relates to sales trends, with 37% reporting sales growth, 35% holding steady, and 28% seeing declines.

Two-thirds (67%) of surveyed manufacturers expect a profitable 2023, 13% say they will break even, and 11% forecast losses.

Forty-two percent of manufacturers introduced a new product in the past year, up from 38%, while 42% also expected to launch a new product this year, with 16% unsure.

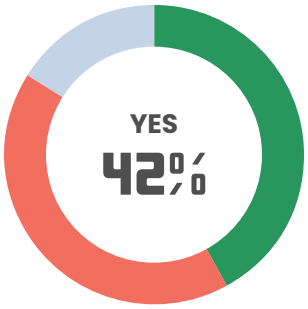
Of those planning to introduce a new product, 81% say production will be located in Connecticut, while 16% will place partial production in the state.

Of those locating production and support outside Connecticut, 19% cite high labor costs. Another 19% blamed regulatory and compliance costs, followed by high taxes (14%), energy costs (13%), and proximity to customers (8%).

One manufacturer noted that while they currently were not planning on relocating, if "they did make such a decision, it would be due to taxation and regulatory hurdles stifling growth."

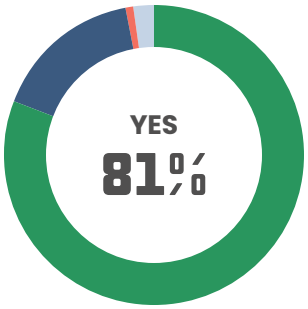
Forty-three percent of respondents believe the state's business climate is static, up nine percentage points from last year, while 36% of businesses say it is declining, down 17 points from 2022. Eight percent see conditions improving and 13% are unsure.

Almost a third of surveyed manufacturers (30%) say Connecticut's quality of life is the greatest advantage to running a business here, followed by proximity to customers (20%).



Will your company introduce a new product or service over the next 12 months?

- Yes (42%)
- No (42%)
- Unsure (16%)



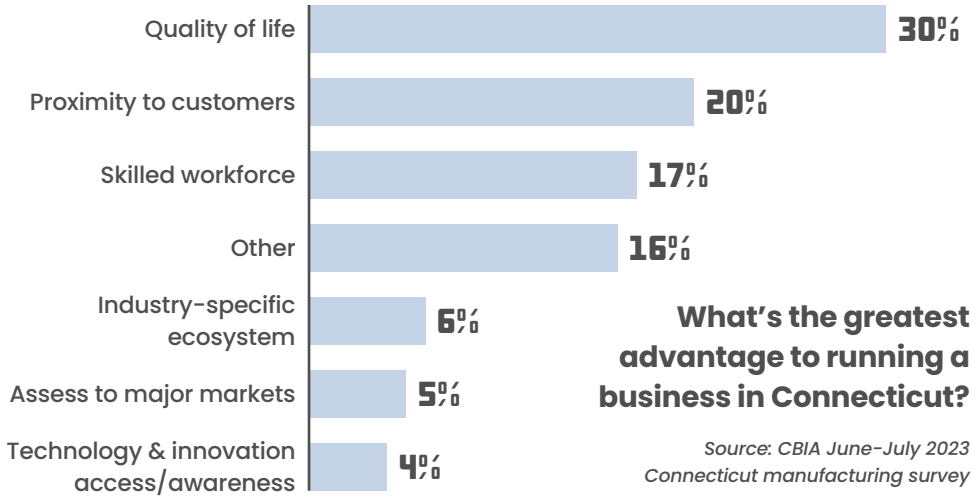
Will your new products be manufactured or supported in Connecticut?

- Yes (81%)
- Partially (16%)
- No (1%)
- Unsure (2%)

Source: CBIA June-July 2023 Connecticut manufacturing survey

Other manufacturing leaders note the state's skilled workforce (17%), followed by the industry-specific ecosystem (6%), access to major markets (5%), and access to technology.

The labor shortage remains the greatest obstacle to growth, noted by 48% of surveyed manufacturers, up four percentage points from last year.



What's the greatest advantage to running a business in Connecticut?

Source: CBIA June-July 2023 Connecticut manufacturing survey

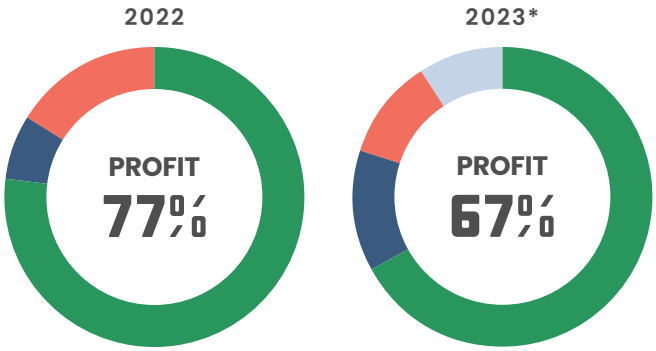
Sixteen percent said Connecticut's cost of living was the main growth challenge, followed by high business taxes (10%), increasing regulatory compliance costs (8%), the unpredictability of legislative decision-making (7%), and workplace mandates (7%).

Thirty-seven percent of manufacturing companies say properties and facilities are their biggest investment priorities, with 27% citing employee recruitment and retention, up five percentage points from last year.

Fourteen percent report that marketing is their main investment priority, followed by new technology (9%) and research and development (7%).

Connecticut manufacturers have a cautious outlook for the state's economy, with 42% expecting static conditions over the next 12 months. Twenty-three percent forecast economic growth, essentially unchanged from last year, while 22% expect a decline—also in line with the 2022 findings—with 12% unsure.

As for the U.S. economy, the outlook is much more optimistic than last year. Thirty percent project growth in the next 12 months (up 11 points), 32% expect static conditions (up nine points), 29% see a contraction (down 18 points), and 10% are unsure.

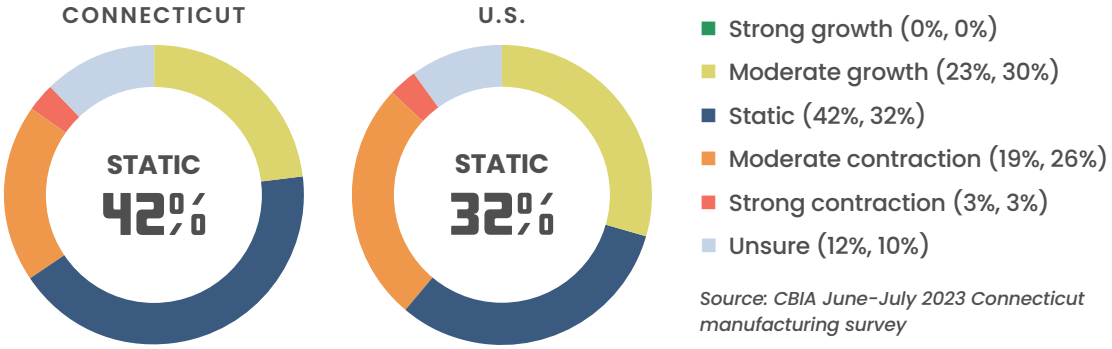


Manufacturing profitability

- Profit (77%, 67%)
- Break even (7%, 13%)
- Loss (16%, 11%)
- Unsure (0%, 9%)

**Projected | Source: CBIA June-July 2023 Connecticut manufacturing survey*

What's your 12-month outlook for the Connecticut and U.S. economies?



Source: CBIA June-July 2023 Connecticut manufacturing survey

INFLATION, SUPPLY CHAIN DISRUPTIONS

Inflation remains a significant concern for Connecticut manufacturers. Eighty-seven percent reported that inflation continues to challenge operations, with most raising prices and implementing other tactics to manage costs.

One quarter (25%) increased wages for their employees to adjust for the high cost of living. Most raised their prices (63%), a 10 percentage point decline from last year's report. This year, some companies also reported raising both wages and prices (13%).

Many manufacturing executives commented that the federal government plays an important role in reducing the impact of inflation.

However, they also say that state policymakers can help ease the impact of inflation by reducing business taxes (36%) and costly state mandates (15%). Seven percent (7%) suggest reducing state spending and 6% of businesses are most concerned with energy and utility costs.

With Connecticut's state and local tax burden a top challenge, one manufacturer suggests lawmakers provide "tax incentives for small businesses."

"Stop increasing the costs of workers through additional laws like paid leave, minimum wage hikes, additional required benefits," added another. "Work diligently to curtail existing and stop future unfunded mandates for employers," noted a third.

Eight percent (8%) of businesses saw addressing health and other insurance costs as a potential avenue to reduce the impact of inflation, with one suggesting allowing "competition for health insurance across state lines."

Connecticut manufacturers have shown remarkable resilience managing their supply chains in the aftermath of the pandemic.

Thirty-one percent of companies addressed supply chain disruptions by identifying backup suppliers for products and materials, and 30% diversified their suppliers.

Twenty-seven percent built up inventory and 9% adopted risk management tools. One manufacturer said they have increased their lead times as well as built up inventory.

"[We] lost customers due to lack of supplies," shared one manufacturer. "We've had to increase

ADDRESSING HIGH ENERGY COSTS

Manufacturers and other large commercial and industrial companies are energy-intensive. Reliable and affordable energy supplies are essential for their operations, and energy represents a significant portion of their annual operating costs.

These companies pay tens of millions of dollars (or more) in energy costs annually, and the impact of even a $0.001 increase per kilowatt hour results in an increase of hundreds of thousands of dollars for a single large C&I customer.

Connecticut is a challenging location for these companies to operate because the average retail price of electricity in 2022 was approximately 148% greater than the national average for commercial customers, and approximately 176% greater for industrial customers, according to the U.S. Energy Information Administration.

These rates are among the highest in the country. Connecticut companies are competing with entities in other states and countries where energy is less expensive, and many also must compete with facilities within their corporate family that are located in those areas. Access to reliable and affordable energy is vital to business operations and the state's economic competitiveness.

The Connecticut Industrial Energy Consumers helps with these challenges. CIEC is an organization of industrial and large commercial companies that represents the interests of its members on energy issues in regulatory, legislative, and judicial proceedings in Connecticut.

Members collectively employ over 40,000 workers at numerous locations throughout the state. CIEC members invest heavily in energy efficiency and many are pursuing decarbonization and sustainability initiatives that align with state objectives.

They are part of the state's economic foundation and CIEC membership includes some of the largest manufacturers in Connecticut. CIEC's overarching goal is to assure members an adequate, efficient, and reliable supply of energy at competitive prices.

CIEC helps members address these challenges so they can remain focused on and committed to supporting a vibrant Connecticut economy. CIEC represents members at:

- Regulatory proceedings before the Public Utilities Regulatory Authority

our costs across the board to deal with these uncertainties from our own suppliers," said another, adding that "the quality of our sub-tier suppliers has dropped considerably and our risks have increased because of it."

During a June event hosted by CBIA, Sikorsky president Paul Lemmo highlighted the impact of supply chain disruptions, telling the audience "we have seen lead times growing from our suppliers, we've seen price increases."

"And more importantly, but detrimental to our business, we've seen late deliveries starting to occur on products that we need to build our aircraft," he said.

to advocate for affordable electric and gas delivery rates, equitable utility rate treatment for large customers, and clean energy policy programs that balance decarbonization, affordability, and system reliability;

- Proceedings before the Department of Energy and Environmental Protection to ensure the state's energy efficiency programs include offerings tailored to large customers and that the decarbonization initiatives account for both the challenges to and opportunities for improving the sustainability of C&I operations;
- Legislative processes to lobby for laws that support energy affordability, cost-based ratemaking, and transparent regulatory processes.

This is a particularly important time. Connecticut is advancing ambitious decarbonization policies and strengthening requirements for utilities to maintain and improve system reliability while also trying to bring down customer costs for essential utility services that must be affordable for all customers.

Achieving balance among these objectives will be difficult which, in turn, increases the importance of advocacy that large energy consumers should not bear a disproportionate share of system investments and policy implementation costs, electric and gas system reliability cannot be jeopardized, and solutions to the extremely high cost of utility services must be found.

CIEC works closely with its member companies and has a successful record on their behalf. For instance, given the high price of electric utility rates in Connecticut, it was astonishing that neither electric utility had economic development rate incentives to attract, expand, and retain load.

CIEC has been working to change that. Following extensive advocacy by CIEC, PURA recently approved an economic development rate incentive for United Illuminating. CIEC will continue working to improve these incentives over time.

CIEC negotiated with Eversource and UI to develop an energy efficiency program participation pathway that allows C&I companies to leverage their engineering expertise on project design and savings estimates. This should improve the incentives available for efficiency projects.

"All the assumptions that we ran our business by and that we thought we knew about the supply base and the predictability have really gone away over the last couple of years."

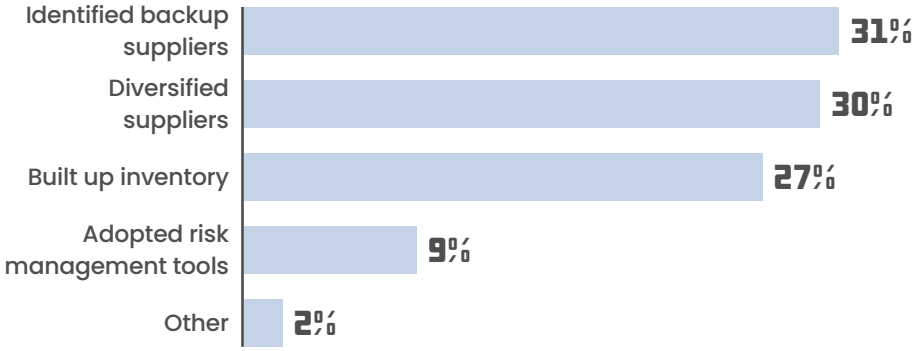
Connecticut's labor shortage crisis is also impacting productivity for a number of Sikorsky's suppliers.

"We've seen a lot of labor turnover in our supply base, which has caused them to kind of lose the recipe on some things that they have made for us," Lemmo said.

In February, the state launched CONNEX Connecticut, a free supply chain portal designed to strengthen the state's manufacturing ecosystem. Licensed and administered by CONNSTEP, the platform is funded by

How has your company addressed supply chain disruptions?

Source: CBIA June-July 2023 Connecticut manufacturing survey



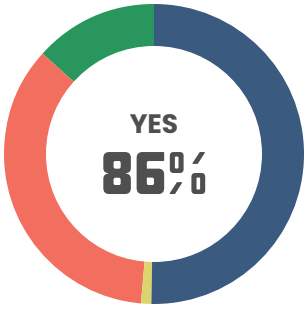
the Connecticut Department of Economic and Community Development's Manufacturing Innovation Fund.

WORKFORCE & HIRING

Connecticut's workforce—traditionally a competitive strength—is critical to the manufacturing sector's successful recovery and future growth prospects.

However, the state's shrinking labor force—down 41,300 people (-2.1%) since February 2020, including a loss of 17,000 (-0.9%) in the first eight months of this year—is undermining the sector's outlook as job openings surge.

While Connecticut manufacturers added 4,300 jobs in 2022—at 2.7% outperforming overall job growth of 1.6%—sector employment fell 0.9% through the first eight months of 2023. U.S. manufacturing employment grew 3.1% in 2022, with year-to-date growth at 1.7%.



Is it difficult for your company to find and/or retain workers?

- Finding only (50%)
- Retaining only (1%)
- Both (35%)
- Neither (13%)

Source: CBIA June-July 2023 Connecticut manufacturing survey

As of August 2023, there were 92,000 job openings in Connecticut—up 37% from pre-pandemic levels—with an estimated 9,000 unfilled manufacturing positions.

Eighty-six percent of Connecticut manufacturers say it is difficult to find and retain workers—essentially unchanged since last year's survey. As noted earlier, 48% describe the labor shortage as the biggest issue hampering growth.

There are a number of factors driving the labor shortage, many of them structural issues that predate the pandemic.

An aging workforce, a decade-plus of stagnant population growth, and the state's high cost of living are long-term challenges now compounded by concerns such as the lack of workforce housing options, limited accessible, affordable childcare, and the high cost of running a business.

Twenty-nine percent of surveyed manufacturers say applicants do not

possess the required skills or expertise and 26% were concerned with a perceived lack of work ethic, with prospective employees lacking reliability and productivity.

Competition from other employers offering higher wages and/or more expansive benefits was noted by 13% as the biggest factor, while 11% said applicants' desired pay was beyond their budget.

The largest share of manufacturers (41%) are looking for applicants with a high school or GED equivalent diploma, 23% are looking for certificate programs, and another 17% want candidates with bachelor's degrees. Only 2% of vacant positions required a master's degree or higher, and 11% had no educational requirements.

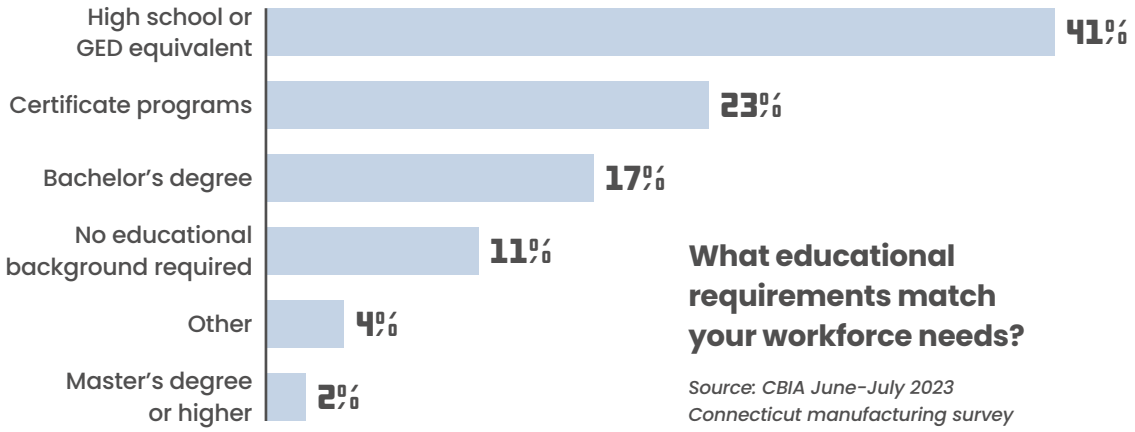
Forty-two percent of surveyed manufacturers are actively involved with postsecondary education institutions, with 42% involved at the community college level, 31% with local high schools, 19% with four-year-institutions, and 8% through technical schools or workforce development organizations like ReadyCT.

Employers are prioritizing employee recruiting, training, and retention, providing flexible paid time off policies (16%), implementing employee engagement initiatives (12%), promoting apprenticeships and internships (12%), offering tuition reimbursement (9%), sign-on bonuses (9%), and childcare reimbursement (5%).

Connecticut's average manufacturing wage grew 3.4% in 2022 to $92,633, 14% higher than the state's average wage. Turnover in Connecticut workplaces is among the lowest in the country. The voluntary quits rate is just 2%—eighth lowest of all states—and the separations rate is 3.3%, also eighth best in the country.

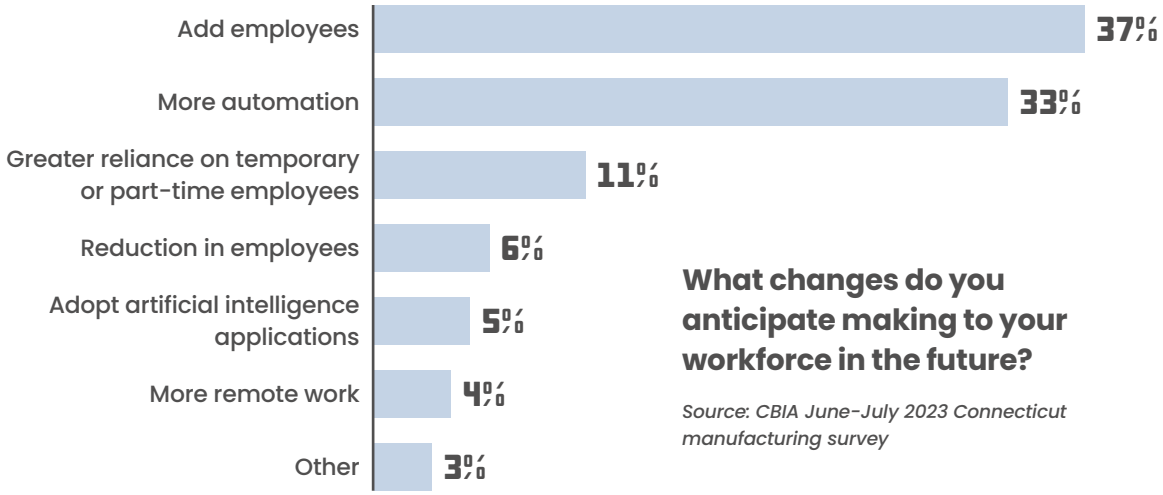
Only 11% of surveyed employers believe that state government is doing enough to drive workforce development initiatives. Nearly half of respondents (46%) do not think the government is doing enough, an eight-point decline from last year. Forty-three percent were unsure.

Over half (55%) have not used state workforce development programs. Nineteen percent utilized Department of Labor apprenticeship programs,



What educational requirements match your workforce needs?

Source: CBIA June-July 2023 Connecticut manufacturing survey



What changes do you anticipate making to your workforce in the future?

Source: CBIA June-July 2023 Connecticut manufacturing survey

10% found employees through the CareerConneCT training program, and 5% engaged with regional sector partnership programs.

One manufacturer suggested that state legislators "work with the education system to provide training or exposure to manufacturing for young people. We need [talented and hard working] young people to see the opportunities in our industry."

"[We need] less focus on higher education as the more important option following high school," they said. "Tuition reimbursement for trade schools and state schools for those students going into skilled trades," added another.

Other suggestions include more career-ready high school coursework, tax incentives for small manufacturers, more comprehensive job certification programs, and improved perceptions of careers in the skilled trades.

Thirty-seven percent of surveyed manufacturers project an increase in the size of their workforce, 33% plan on implementing more automation, 11% say they will rely more on temporary or part-time employees, 6% expect lower staffing levels, and 5% will adopt artificial intelligence applications.

THE PATH FORWARD

In March 2023, the Office of Manufacturing released a much-anticipated blueprint for growing the state's manufacturing sector. Produced in collaboration with stakeholders from across the state, Connecticut's Strategic Manufacturing Plan features ambitious job and GDP growth targets.

"This comprehensive strategic and tactical plan aims to strengthen the manufacturing ecosystem through technology adoption, workforce development, and supply chain reinforcement," noted chief manufacturing officer Paul Lavoie.

"Together, these imperatives will fuel the effectiveness, efficiency, sustainability, and ultimately the success of the manufacturing sector in Connecticut."

The strategic plan is built around three core pillars: workforce growth and development, supply chain resiliency, and industry expansion.

It sets a target of 235,000 manufacturing jobs by 2033—an increase of 77,400 positions (49%) over August 2023 levels—and growing the sector's contribution to Connecticut's GDP from 10% to 20% by 2029.

The plan recommends continued collaboration with the Office of Workforce Strategy to build and refine systems and infrastructure in alignment with the Governor's Workforce Council's 2020 Workforce Strategic Plan.

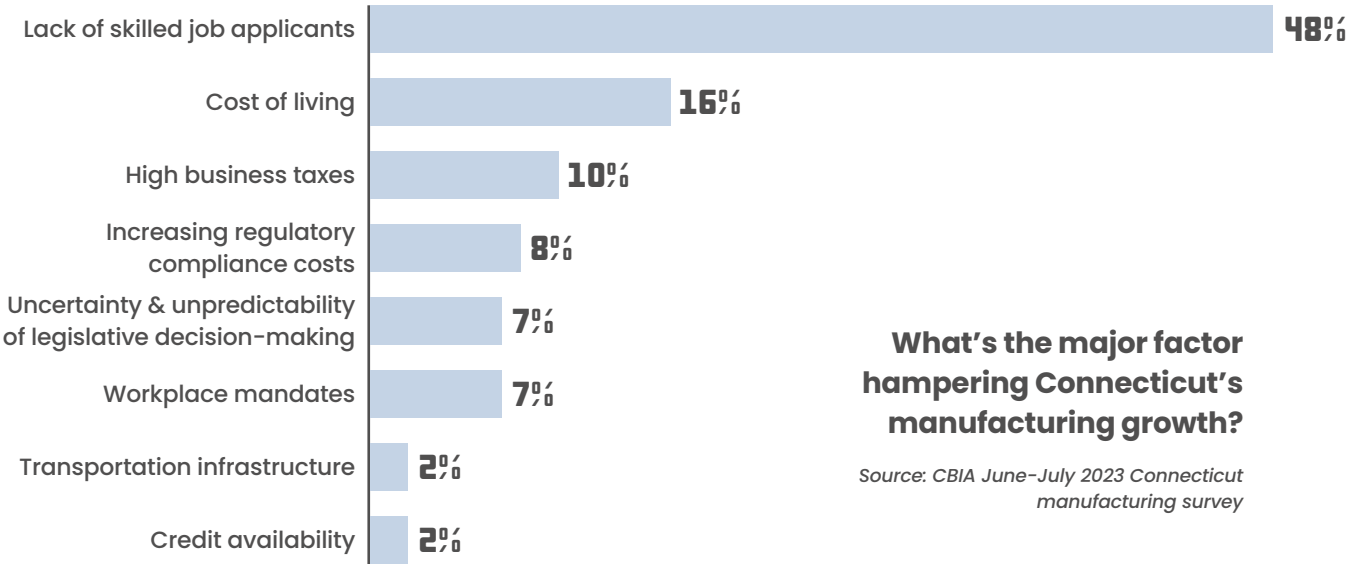
Other strategic initiatives and tactics to boost workforce levels include:

- Advocate for affordable workforce housing
- Support more transportation options
- Collaborate on efforts to increase career opportunities for underserved and underrepresented populations
- Develop a women in manufacturing program
- Shift perceptions about manufacturing, promoting the sector as "innovative, clean, and safe"

The plan calls for strengthening the manufacturing supply chain "through innovative programs that reduce the cost of doing business—and shorten supply chains."

Strategic initiatives addressing supply chain resiliency include operational efficiency programs for small to medium manufacturers and supporting Industry 4.0 adoption, including digital transformation and additive manufacturing applications.

A number of supply chain-based tactical initiatives outlined in the plan are already available, including the Manufacturing Voucher Program and the Connecticut Center for Advanced Technology's digital transformation and Cybersecurity and Smart Industry Readiness Index programs.



What's the major factor hampering Connecticut's manufacturing growth?

Source: CBIA June-July 2023 Connecticut manufacturing survey

The plan also proposes promoting and streamlining access to "all the resources Connecticut offers to both attract and retain those types of manufacturers who can best leverage our strengths."

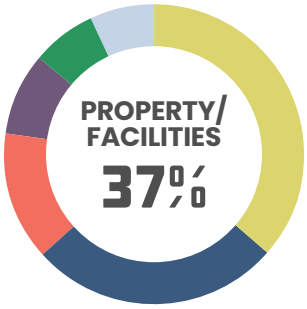
"Competition for manufacturing businesses is fierce," the plan notes. "Many other states, regions, even cities/towns are offering attractive incentives to woo manufacturers.

"We need to find the right ways to attract the right types of manufacturers to our state—while motivating our existing manufacturers to continue to grow and expand right here in Connecticut."

The plan also features an initiative to "lead and coordinate the offshore wind industry efforts to build out a supply chain, develop a workforce, drive research and innovation, and to maximize the opportunities of the offshore wind industry across the state."

CBIA president and CEO Chris DiPentima welcomed the strategy, noting that "an overarching plan has been missing from the equation and is needed to prioritize and drive near and long-term solutions to grow our incredible manufacturing sector."

"Connecticut's policymakers will play a critical role in the success of this plan," he added. "We can't grow our economy without addressing the worker shortage, which is hampering growth across all sectors, including manufacturing."



What's your top investment priority?

- Property/facilities (37%)
- Employee recruitment & retention (27%)
- Marketing/selling materials (14%)
- New technology (9%)
- R&D (7%)
- Other (7%)

Source: CBIA June-July 2023 Connecticut manufacturing survey

Based on this year's survey, manufacturing leaders' perception of the state legislature's handling of the economy and job creation shifted in the last year. In 2022, just 10% of manufacturers approved of the legislature's actions, compared to 17% this year. Forty percent were neutral while 43% said they disapproved, down 12 percentage points from 2022.

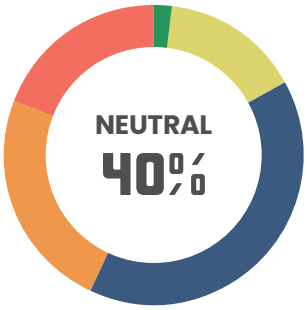
"They work across the aisle," one manufacturer said. Another said they "appreciate plans to give incentives to existing manufacturers who grow their businesses instead of the sole focus being on attracting new businesses."

What can policymakers do better to support the state's manufacturing sector?

When asked what policy would have the greatest impact in attracting new residents, 38% of surveyed manufacturing leaders cited income tax cuts. While the legislature passed historic personal tax relief measures this year, more still needs to be done as our tax policies should attract new residents and business, not act as a deterrent.

Connecticut's property tax burden is often cited as a major driver of living and business costs—25% of surveyed manufacturers said lower property taxes will best draw new residents. Other responses included access to quality affordable healthcare, more housing options, and increased education funding.

Do you approve of the state legislature's handling of the economy and job creation?



- Strongly approve (2%)
- Somewhat approve (15%)
- Neutral (40%)
- Somewhat disapprove (24%)
- Strongly disapprove (19%)

Source: CBIA June-July 2023 Connecticut manufacturing survey

"Really, a thriving economy with diversified employment opportunities will lift all boats," commented one. Another was concerned with the outflow of businesses from the state, saying policymakers need to "stop people from moving out."

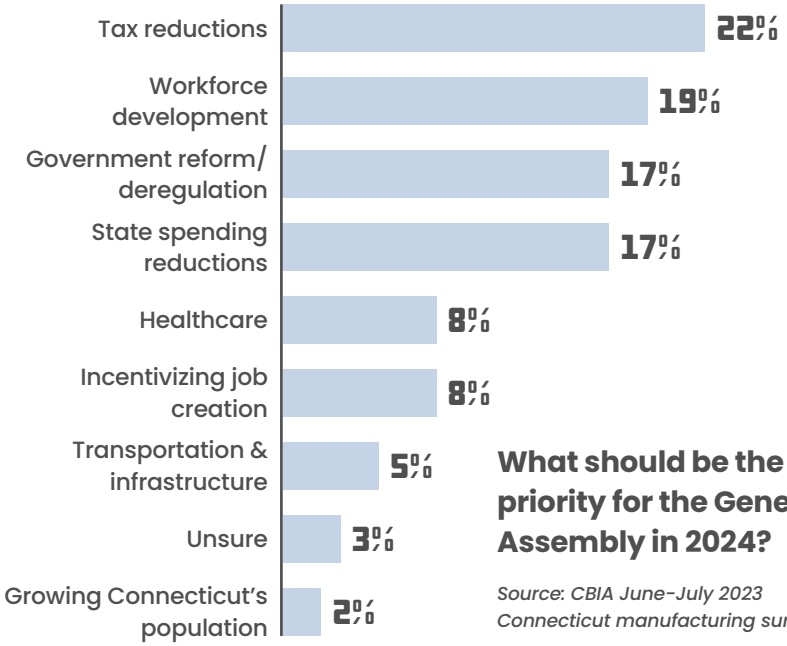
We also asked manufacturers to identify the top policy priorities for the 2024 General Assembly session, a list topped by calls for tax relief (22%), workforce development (19%), state spending reforms (17%), cutting red tape (17%), job creation incentives (8%), and healthcare (8%).

Over the last several years, the state legislature missed a series of significant opportunities to leverage the state's new-found fiscal strength and lower Connecticut's high cost of business, which remains a significant competitive disadvantage.

For instance, this year saw legislation introduced that restored the pass-through entity tax credit (returning over $60 million to small businesses), repealed sales taxes on workforce training, and a landmark, bipartisan bill that lowered the cost of healthcare for small business employees.

None of those measures passed.

As one manufacturing leader commented, "lawmakers seem to be very disconnected about business needs. Most committee actions seem very employee-focused. Need to be balanced until we are at least average or better compared to other states." ■



What should be the top priority for the General Assembly in 2024?

Source: CBIA June-July 2023 Connecticut manufacturing survey

UCONN TECH PARK SUPPORTS MANUFACTURING INNOVATION

Just on the outskirts of the University of Connecticut's main Storrs campus in Storrs sits the UConn Tech Park, a center for cutting-edge research, collaboration, and innovation.

"The Tech Park is a really amazing initiative that the state and university funded to act as a kind of front door for industry into the services that are available at the university," says Michael DiDonato, business development manager for the Innovation Partnership Building.

The Innovation Partnership Building is the first and flagship building of the Tech Park, which opened in 2017.

The facility features 19 centers focused on four pillars: sustainability, defense materials, cybersecurity, and systems manufacturing.

The goal of the Tech Park is to connect businesses with their research facilities and technology services.

"I would say, really, we've been accelerating since COVID," DiDonato says. "I look at the last year as being a really productive time for us, increasing outreach, really spreading the word."

DiDonato said spreading the word is one of the biggest challenges the Tech Park faces as it grows.

"A lot of people don't know what's there," he notes. "And many different services are available to them that could help out their business."

That includes a world-class microscopy wing, which DiDonato describes as Connecticut's metallurgy lab.

"I mean, this isn't just a good resource. It's an unbelievable resource," he says. "People need to know about it."

The Tech Park also offers services and access to technology like metallurgy equipment, modeling and simulations to solve problems, and prototyping capabilities for 3D printing or laser cutting.

It's those services that DiDonato said many small businesses may not be able to do on their own.

"If we can get them to consider the resources at the university to be an extension of their resources, it becomes really obvious," he says.

"If we can meet engineers and get them familiar with what's available, then hopefully they'll take advantage."

One of the companies the Tech Park worked with is Acme Wire Products Co., Inc. in Mystic, which makes products including lacrosse face masks.

Acme president Mary Planeta Fitzgerald said the experience "challenged our tool designers and tool makers to review different materials and processes and opened our eyes to the technical research partnership opportunities available within our state."

"The experience was very positive and led to Acme Wire Products using a new material for tooling that reduced the labor cost and turnaround time for remaking replacement fixtures," she said.

DiDonato said businesses are often surprised by the accessibility and approachability of the Tech Park.

"We're not interested in getting into the game production," DiDonato emphasizes. "What we'll do is we'll prove to you this works, and maybe we'll guide you."

And it's not just the technology that the Tech Park offers, but also access to faculty and students doing cutting-edge research.

"UConn is, first and foremost, an educational institution," DiDonato says. "So the students are the top priority."

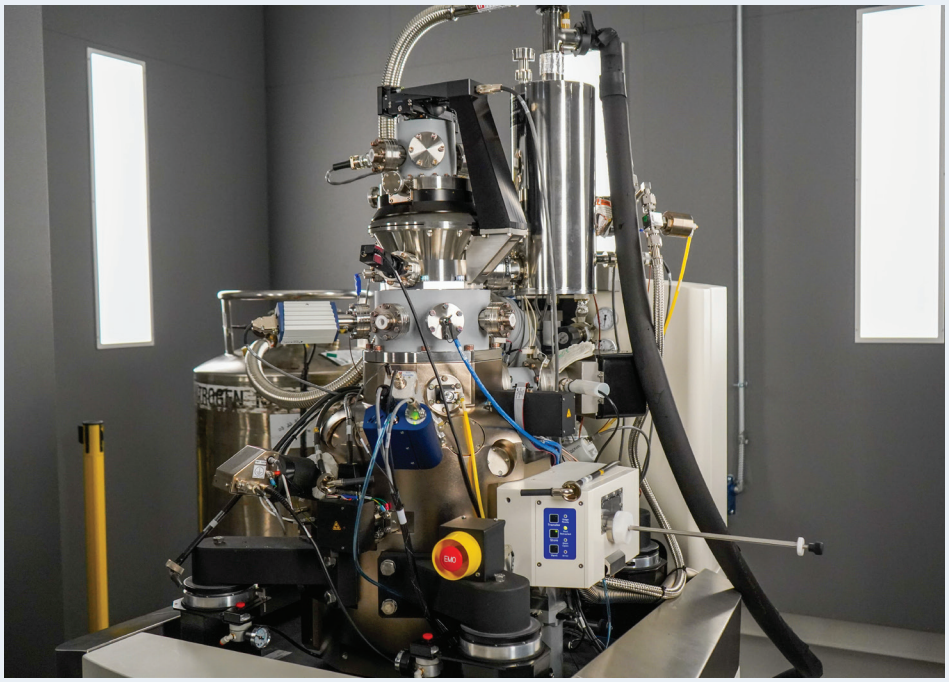
DiDonato said companies partner with UConn on senior design projects, which gives teams of engineering students a task or project to complete for a business.

One of those projects involved Willington Nameplate. They worked with students on moving one of their processes from being manual to a level of automation.

"They helped identify the proof of concept for us that we will utilize to develop a working prototype," said Willington Nameplate president Brett Greene.

The projects not only help businesses solve problems, but they also provide important real-world learning opportunities for students.

"We need to get more of our engineering students, students in general, to be exposed to practical tech problems, so that they can be better prepared to hit the ground running with real work environments that face real challenges," DiDonato said.



"This isn't just a good resource. It's an unbelievable resource. People need to know about it," says UConn Tech Park's Michael DiDonato.

DiDonato said the Tech Park is hoping to expand and add more buildings.

DiDonato said the goal is to not only help out businesses in the state, but to help the economy grow overall.

And as they spread the word, DiDonato said they've built strong relationships with groups like CONNSTEP, AdvanceCT, the Connecticut Center for Advanced Technology, and with state leaders like chief manufacturing officer Paul Lavoie.

"All of us together I feel are bigger than the sum of our parts," DiDonato said. "You take one plus one plus one, and you get four. And that's where this collaborative feeling in Connecticut has been so awesome."

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2023 CONNECTICUT MANUFACTURING INNOVATION FUND PROGRAMS

Connecticut's Manufacturing Innovation Fund supports the growth, innovation, and progress of the state's advanced manufacturing sector.

The $100 million fund provides loans and grants for a range of programs, including workforce development, technology adoption and awareness, Industry 4.0 integration, and energy efficiency.

The fund is administered by the state Department of Economic and Community Development, with input on funding allocations provided by an advisory board.

Consulting and training offerings from CBIA affiliate CONNSTEP are also often eligible for matching funds through the fund. For more information, visit connstep.org.

WORKFORCE DEVELOPMENT

APPRENTICESHIP PROGRAM

The Manufacturing Innovation Fund supports the Department of Labor's pre-apprenticeship and apprenticeship programs in manufacturing to provide on-the-job training to employees–an essential part of enabling early-career employees to build their credentials. The $11 million in MIF support helped pay for third-party training resources for these apprentices and subsidized their wages while on the job.

The program is administered by the Connecticut Department of Labor.

COLLEGE CONNECTIONS

This program supports the initiative to get students interested in manufacturing earlier in their academic paths. The Connecticut State Colleges & Universities' College Connections program offers comprehensive high school students an opportunity to earn college credits in manufacturing through the state's community colleges. The MIF provides half the cost of tuition, books, and transportation so more students can participate.

ENGINEERING INTERNSHIP PROGRAM

This program is intended to keep engineering graduates in-state and employed within Connecticut businesses. It provides students in Connecticut undergraduate engineering programs with opportunities to intern with small and medium-size manufacturing companies with up to 300 employees. Eligible companies receive a wage subsidy of $3,500 per intern (maximum two interns per company), designed to cover up to half their summer wages.

The program is administered by the Connecticut Center for Advanced Technology.

INCUMBENT WORKER TRAINING PROGRAM

This program encourages advanced skills training required to help manufacturers continue and/or become highly competitive and productive in today's global market. It provides the support necessary to help defray the costs of training employees on both new technology and updated processes. As of the end of fiscal year 2022, the MIF had committed over $16 million to the program.

The program is administered by the Connecticut Center for Advanced Technology.

TECHNOLOGY AWARENESS & ADOPTION PROGRAMS

COMPOSITES MANUFACTURING

The MIF supports two programs focused on both the fabrication and precision machining of composites. The Advanced Technology Composite Center draws on the technological strength of Pratt & Whitney, CCAT, and Goodwin University. It gives manufacturers hands-on opportunities to learn more about new technologies and expert guidance in how to integrate them into their own operations. The Advanced Composites Program has enabled CCAT to develop composites machining capabilities. This program makes it possible for manufacturers to better understand the unique inputs and outcomes of manufacturing with composites.

These programs are administered by the Connecticut Center for Advanced Technology.

DIGITAL MODEL INITIATIVE

This is a pilot program created to assist small and medium-sized defense suppliers in adopting and transitioning to model-based definition technologies, leading to improved quality, reduced costs, and increased efficiency. The initiative focuses on process innovation using MBD technology to change how manufacturers design and produce parts using 3D modeling. This program itself is a model of public/private partnerships, leveraging the skills and resources of CCAT, CONNSTEP, and Central Connecticut State University to facilitate supplier adoption of new MBD processes and to develop new curricula for emerging digital roles as well as a comprehensive guide to digital transformation.

HIGH RATE ADDITIVE MANUFACTURING

HRAM is designed to help manufacturers across the state leverage the power of additive manufacturing. The program helps small and medium-size manufacturers evaluate, purchase, and install the state-of-the-art equipment needed for additive manufacturing. It also provids hands-on exploration and training opportunities on these new technologies.

The program is administered by the Connecticut Center for Advanced Technology.

INDUSTRY 4.0 FOR THE MANUFACTURING SUPPLY CHAIN

This industry-driven program is intended to advance the global competitiveness of Connecticut's manufacturing supply chain. The program is designed to help manufacturers explore and adopt industry 4.0 technologies. It includes a matching grant program to facilitate the adoption of these advancements.

The program is administered by the Connecticut Center for Advanced Technology.

INDUSTRY 4.0 INTEGRATION VOUCHER PROGRAM

This grant is intended to help Connecticut supply chain companies with the adoption and integration of IoT solutions. The program provides matching grants up to $20,000 for hardware, sensors, platforms, and related third-party integration services.

Project proposals that fall under any of the four areas of focus above will be considered for funding. The goal of this program is to ensure that the Connecticut supply chain is positioned to implement modern digital manufacturing tools to continue to compete favorably against any manufacturing sector in the world.

The program is administered by the Connecticut Center for Advanced Technology.

MANUFACTURING VOUCHER PROGRAM

This program helps manufacturers keep pace with the rising cost of state-of-the-art technologies by providing companies with access to capital to help obtain new equipment and expertise. To be eligible, manufacturers must be contemplating investments valued at a minimum of $25,000 and willing to match their MIF voucher two-to-one for first-time applicants and three-to- one for repeat applicants. Recently, the program extended matching grants of up to $100,000 to obtain new equipment or master new processes.

The program is administered by the Connecticut Center for Advanced Technology.

SIRI & CYBER ASSISTANCE PROGRAM

SAC is intended to provide financial assistance to Connecticut manufacturing companies seeking Smart Industry Readiness Index assessments and/ or cybersecurity assessments and certification. The goal is to help companies striving to meet federal cybersecurity requirements and to also assist those interested in pursuing their smart factory transformation journey. Eligible companies can apply for a grant up to $10,000 to conduct assessments and testing. Participating companies must pay half the cost.

The program is administered by the Connecticut Center for Advanced Technology.

ENERGY EFFICIENCY

ENERGY ON THE LINE PROGRAM

This program is designed to help Connecticut companies move forward with energy efficient improvements. Connecticut manufacturing facilities are eligible for up to $40,000 in grant money when working with C-PACE to implement green energy upgrades. Grant funds may be used for any project related expenses at the sole discretion of individual recipients (e.g. capital improvements, additional equipment, cash flow optimization). To further assist in lowering the long-term cost of energy, manufacturers may also be eligible for full financing of their energy upgrades through the C-PACE program. To date, Energy on the Line has awarded grants totaling $568,196.

The program is administered by the Connecticut Green Bank.

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