2020 CONNECTICUT MANUFACTURING REPORT

StanleyBlack&Decker

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CONNECTICUT

Connecticut manufacturing has a rich legacy of innovation and ingenuity, changing the course of world history through groundbreaking inventions.

This is where Igor Sikorksky designed and flew the first helicopter. Where the first submarine took shape.

Connecticut is where—thanks to Charles Goodyear—the rubber first hit the road and color television first flickered to life.

We have a fun side, too. Connecticut gave birth to lollipops, Frisbees, and Wiffle Balls.

That legacy of innovation continues today.

We still make helicopters and submarines. Not to mention jet engines, cutting edge electronics, sophisticated medical devices, and lifesaving medicines.

What are you going to make?

What's your legacy?

Stanley Black & Decker Is Proud To Support CBIA

For 175 years, Stanley Black & Decker has been for the makers and creators, the craftsmen and the caregivers, those doing the hard work to make the world a better place. We are focused on delivering societal good through our innovations and business model approach, with a heightened focus on diversity and inclusion, environmental impact and improving the communities where our employees live and work.

StanleyBlack&Decker

For Those Who Make The World™

CONNECTICUT MANUFACTURING'S ECONOMIC POWER

EMPLOYEES

155,900
Manufacturing employees in Connecticut

MANUFACTURERS

3,965
Manufacturing companies

WAGES

$17.33 BILLION
Total 2019 manufacturing compensation

$98,150
Average manufacturing compensation in Connecticut

TAXES

$144.5 MILLION
State corporate taxes paid in 2019

$223.5 MILLION
State sales & use taxes paid in 2019

MULTIPLIERS

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

$26.74 BILLION
Manufacturing accounted for 11% of the state's GDP in 2019

$2.74
Amount generated in additional activity for every $1 spent in manufacturing

EXPORTS

$15 BILLION
Manufacturing accounted for 92% of all Connecticut exports in 2019

DEFENSE

$15.2 BILLION
Connecticut manufacturing defense contract spending (2018)

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.

MADE IN CONNECTICUT

FOREWORD

Connecticut has a long, storied history in precision manufacturing dating back to the dawn of the Industrial Revolution in the United States. Over this 200-plus year period, our manufacturing community has endured wars, a depression, countless recessions, foreign competition, rapid technological changes, and numerous other headwinds. The challenges of 2020 are unique in our lifetimes.

As the severity of the pandemic became apparent in March, our manufacturers developed and rapidly implemented a litany of safe workplace policies and procedures. Manufacturers were particularly challenged, as there is no work from home option for most production employees.

As the situation evolved, many businesses pivoted and retooled to use their capacity and capabilities to address critical shortages of urgently needed medical equipment and supplies. They grappled with new workplace mandates and juggled staffing to balance the frequently competing needs of their customers and their employees. They struggled with broken supply chains, rapid shifts in demand, and liquidity challenges. Through it all, our manufacturers displayed a combination of grit, determination, and Yankee ingenuity that has served them, their employees, and our communities well.

To date, Connecticut manufacturers have held up well compared with national averages and our regional peers. Understanding the complexities and interconnectedness of supply chains, and believing that our manufacturers would keep their workforces healthy and safe, Connecticut made the somewhat unusual decision to deem all manufacturing essential, which allowed our companies to continue operating while other regions shut down much of their manufacturing base. Connecticut manufacturers rewarded that faith by protecting their employees and avoiding hot spot outbreaks. They also continued to meet the needs of their customers and in many cases picked up market share from competitors.

At the start of this year, the top concern for most manufacturers was the shortage of skilled workers. In the first quarter of 2020, Connecticut reached a 10-year high in manufacturing employment—and we had 8,000

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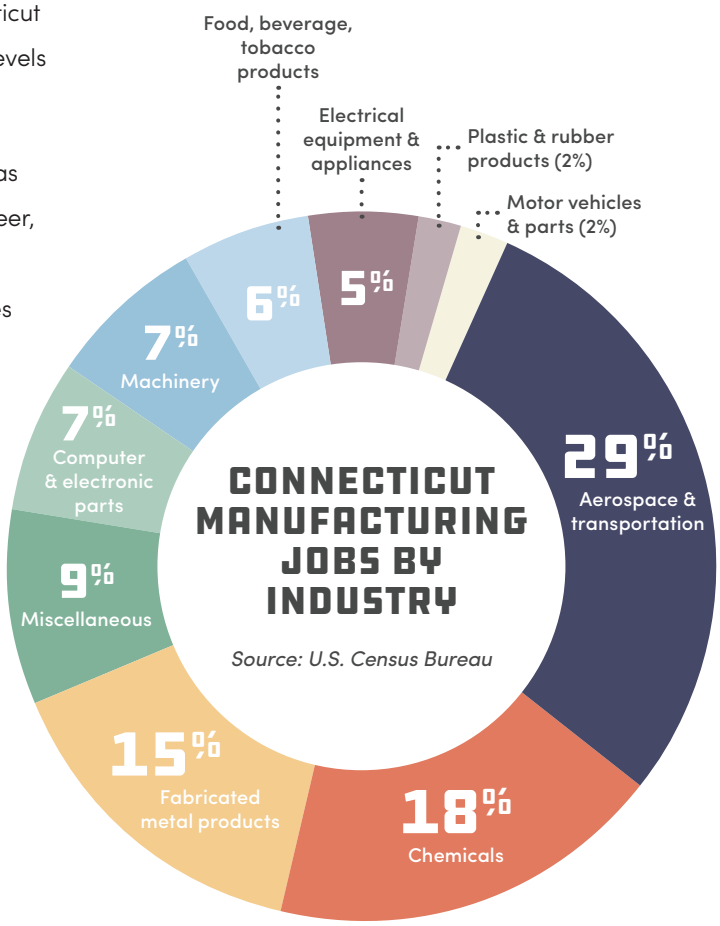
to 10,000 manufacturing positions open for want of skilled candidates. Since that time, our manufacturing workforce is down by over 4% but recent monthly trends show slow, albeit inconsistent, improvement. While it will take some time to regain the jobs lost to the pandemic and the subsequent recession, the age of the Connecticut manufacturing workforce will continue to drive high levels of retirement and thus the need for new entrants.

In addition, this shift in our manufacturing workforce as older, more experienced workers retire and early career, less-skilled candidates enter the workforce—coupled with the rapid advent of new technology—underscores the need to focus on incumbent worker training.

Other areas of focus for 2021 and beyond include access to capital for manufacturers, select opportunities for regulatory reform, and the acceleration of the digital transformation of our manufacturing industries though the adoption of Industry 4.0 technologies. In addition, exciting opportunities are evolving in emerging industries including electronic vehicles, offshore wind power, and bioscience.

In the near term, there is still a significant amount of uncertainty in many manufacturing sectors, but most Connecticut manufacturers are more focused on the opportunities ahead than the risks. Innovation, determination and optimism are alive and well in our manufacturing ecosystem, which will serve us well as we emerge from these unprecedented times.

Colin Cooper
Chief Manufacturing Officer, State of Connecticut



INTRODUCTION

The 2020 Connecticut Manufacturing Report, produced by CBIA and affiliates CONNSTEP and ReadyCT—and made possible through the generous support of Stanley Black & Decker—reviews the state of the sector, explores the outlook for the next 12 months, growth factors, key initiatives, hiring and investment trends, and the impact of state and federal policies.

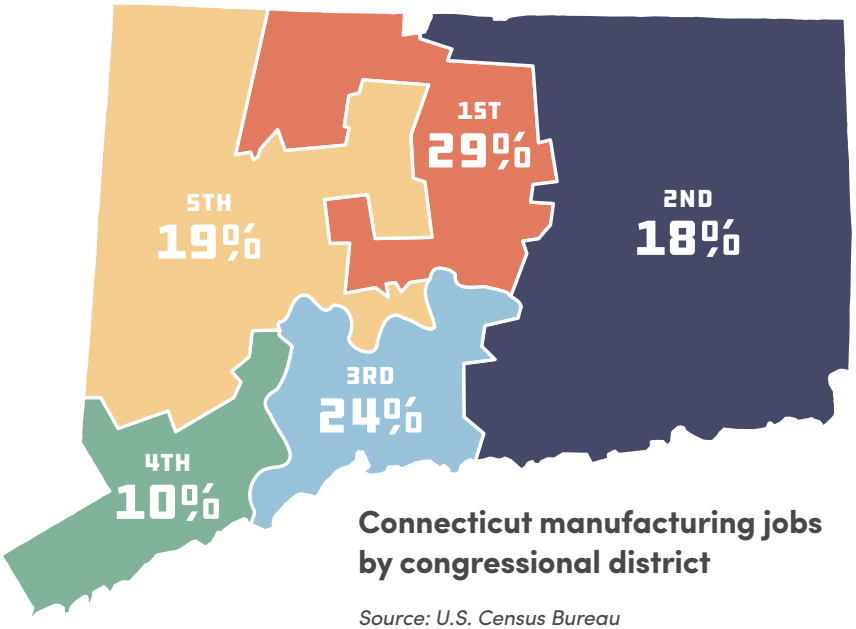
It also captures how the state's manufacturing community is navigating an extraordinarily challenging and unprecedented period, with the world looking very different today than it did when this report was published last year.

As of mid-October, more than 61,700 state residents have contracted COVID-19 and over 4,500 have died. There have been almost eight million cases nationwide and the national death toll exceeds 216,000—20% of the global figure.

While Connecticut has responded to the pandemic better than most states, businesses are operating at reduced capacity, global demand for many products is sagging, employees are struggling with health and childcare concerns, and new operating costs abound as disaster relief loans are exhausted.

While most Connecticut manufacturers' doors remain open, the crisis is taking its toll.

More than 56% of surveyed manufacturers report they had to lay off, furlough, or reduce employee hours as a result of the pandemic. The sector lost 11,700 jobs in March and April—7% of the pre-pandemic workforce, while 17% of all jobs were lost in the same period.



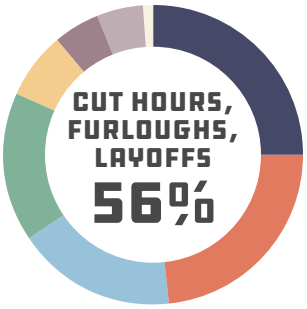
Connecticut manufacturing jobs by congressional district

Source: U.S. Census Bureau

Through September 2020, 43% of those manufacturing workers had returned to work, with the state recovering 61% of the overall 291,300 jobs lost in the first two months of the pandemic.

Connecticut's GDP contracted 31.1.% in the second quarter of 2020, ranked 23rd in the country, weathering the pandemic slightly better than the New England region overall, which declined 32.3%. U.S. GDP fell 31.4% in the second quarter.

How COVID-19 restrictions impacted workforce decisions



- Made no changes (25%)
- Reduced employee hours (23%)
- Furloughed employees (17%)
- Laid off employees (16%)
- Hired additional employees (7%)
- Increased employee hours (5%)
- Other (5%)
- Not applicable (1%)

Source: CBIA July 2020 Connecticut manufacturing survey

When the state's initial COVID-19 restrictions went into effect in mid-March, manufacturing was declared essential, allowing the sector—a critical component of the state's economy—to remain in operation.

State and federal relief programs, including the Payroll Protection Program and the paid leave benefits enacted in the Coronavirus Aid, Relief, and Economic Security Act and the Families First Coronavirus Response Act, also played major roles helping deflect greater economic damage.

The resiliency, innovative spirit, and unselfishness of Connecticut manufacturers also must be emphasized. In the early weeks of the pandemic, with COVID-19 cases and hospitalizations surging and personal protective equipment and medical supplies in short supply, manufacturers responded.

Manufacturers across the state pivoted, retooling production lines to make PPE, surgical gowns, ventilators, hospital beds, and other desperately needed supplies. Small and large businesses donated resources, products, services, and millions of dollars to relief efforts. The state's bioscience sector went into overdrive in the search for treatments and a vaccine.

The sector will play a key role as businesses lead the state's recovery.

Our producers are navigating a slow return to normal in a significantly weakened economy, grappling not only with supply chain interruptions and the cost of government regulations and mandates—including potentially devastating increases in unemployment insurance and workers compensation—but the widespread uncertainty about the pandemic's long-term health and economic impacts.

Add to this the national political landscape and projected multi-billion dollar state budget deficits, it's a safe bet they are not getting much sleep.

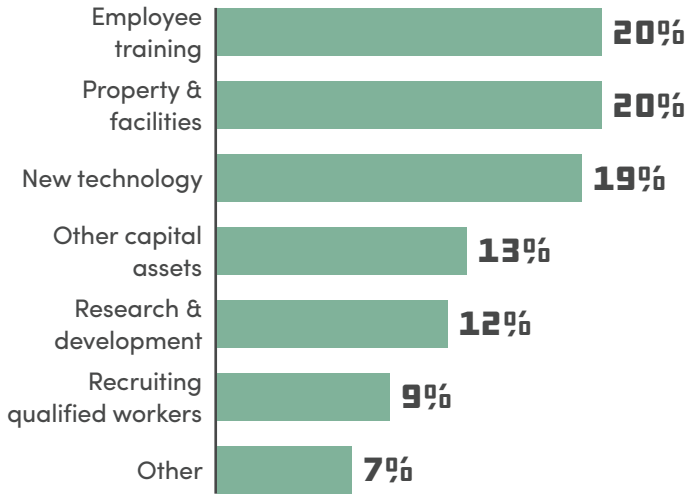
The information and data shared in this report came from multiple sources, including a comprehensive July 8-29 CBIA survey of Connecticut manufacturers, numerous state and federal agencies, and interviews with private and public sector manufacturing leaders and officials.

Given the critical part manufacturers play in Connecticut's economic ecosystem, the key takeaways and policy priorities highlighted in this report are ones their partners in the state legislature and government agencies should understand and embrace.

KEY TAKEAWAYS

- More than half (56%) of manufacturers had to lay off, furlough, or reduce employee hours as a result of the pandemic
- Manufacturers implemented additional, voluntary health and safety precautions to protect employees and prevent workplace transmission of the coronavirus
- 85% of surveyed manufacturers applied for a federal PPP loan, with 97% of those applications successful
- Less than half (46%) expect to return a profit in 2020, down 30 percentage points from 2019.
- Only 18% of respondents said their businesses were growing, while 82% said they were either contracting or holding steady.
- More than half expect employment levels to remain stable over the next six months, with 20% forecasting growth and 23% a decline
- The outlook for both the state and national economies is soft—only 10% expect the Connecticut economy to expand next year, with 32% forecasting national growth

Where does your company currently make its greatest investment?



Source: CBIA July 2020 Connecticut manufacturing survey

PORTRAIT OF THE MANUFACTURER

Connecticut manufacturers are typically small, experienced employers. Almost 72% of those who responded to CBIA's July survey employ fewer than 50 workers; 87% have less than 100 employees.

The average age of those surveyed companies is 53 years, with almost 93% having been in operation for more than 20 years. Only five respondents have been in business for less than 10 years, and 23 are more than 100 years old.

Almost one quarter (24%) of surveyed firms are privately held, 20% are incorporated, 20% are S corporations, 7% are limited liability corporations, 2% are publicly held, and 1% are foreign-owned. Twenty percent are family-owned businesses, 7% are owned by women, 5% by veterans, and 1% are minority-owned.

According to U.S. Census Bureau data, aerospace and transportation are responsible for the largest percentage of Connecticut's manufacturing workforce, responsible for 29% of industry employment.

Chemical manufacturers represent 18% of total manufacturing employment, followed by fabricated

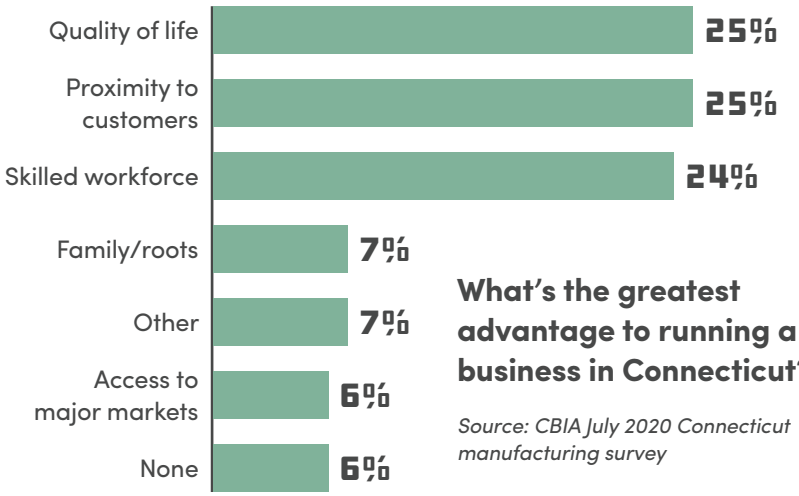
metal products (15%), computer and electronic parts (7%), machinery (7%), food, beverage, and tobacco products (6%), electrical equipment and appliances (5%), plastics and rubber products (2%), and motor vehicles and parts (2%).

Connecticut manufacturers are both loyal and local. Ninety-seven percent of surveyed companies have their primary facility in Connecticut, and 86% of the state's manufacturers make their products here.

They invest in their people, first and foremost. Employee recruitment, training, and retainment are where they make their greatest investments, followed by property and facilities, technology, and research and development.

As of August 2020, the state's 3,965 manufacturers employ 154,700 workers—10% of Connecticut's workforce—and pay an annual total of $17.33 billion in wages and benefits. That's an average of $98,150, well above the state's $74,561 yearly per capita income.

Manufacturing contributed $26.74 billion to the state's economic output last year, 11% of Connecticut's annual gross domestic product, including over $15 billion in exports and more than $15.2 billion in defense contracts.



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

Source: CBIA July 2020 Connecticut manufacturing survey

Connecticut manufacturers pay more than $368 million annually in state corporate and sales and use taxes and invest almost $1.5 billion in capital expenditures each year.

Most critically—the sector drives other parts of the state's economy, creating up to five additional jobs for every manufacturing job and generating $2.74 in additional economic activity for every dollar spent.

COMPETITIVE LANDSCAPE

While Connecticut has been home to most of these producers for decades, their presence should not be taken for granted.

When asked about the greatest advantage to running a business in Connecticut, manufacturers responded that quality of life (25%), proximity to customers (25%), and a skilled workforce (24%) are primarily what keep them here.

Excluding the coronavirus pandemic, the increasing cost of complying with state regulations and mandates is the main factor hampering the growth of the manufacturing sector, cited by 23% of survey respondents.

Twenty percent said the difficulty finding skilled labor was the primary obstacle, followed by the state's high cost of living (16%), the uncertainty and unpredictability of legislative decision-making (15%), and high business taxes (13%).

Small manufacturers, those with fewer than 100 employees, were more likely to view the state's business climate

negatively—perhaps a reflection of 2019 legislative actions, including the paid family and medical leave mandate, expanding the sales tax to PPE and safety apparel, and reducing the pass-through entity tax credit. The latter costs small businesses $53 million annually.

When asked whether they approve of the state legislature's handling of the economy and job creation, 51% of surveyed manufacturers said they either disapprove or strongly disapprove. Thirty percent were neutral and 19% said they approved.

Almost two-thirds of (63%) believe the state's business climate is declining, with 30% describing it as static, and 7% saying it is improving.

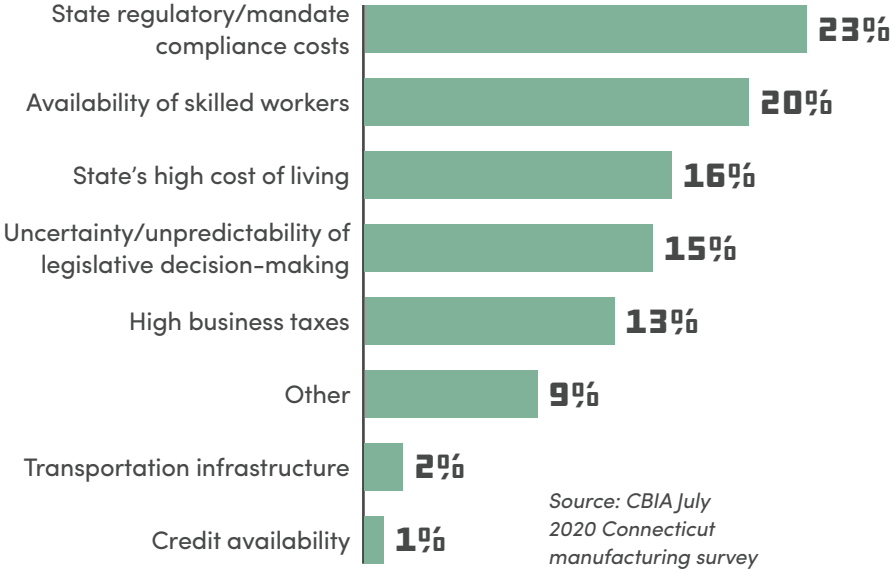
"After thirteen years [as CEO] it is clear that striving to create jobs and grow the economy of our state is not a priority," responded the chief executive of a major manufacturing company. "Actually, it is very sad for those that the legislators say they are trying to help.

"We will now blame the impacts of COVID-19 for the economic problems, which is only partially true. The state's finances are simply unsustainable and we will end up declaring bankruptcy at some point over the next decade.

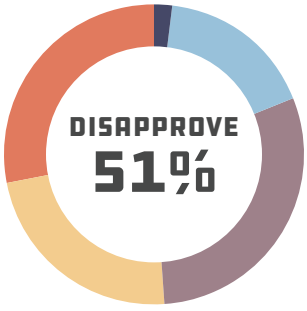
"For growth we need to increase employment and productivity. However, our working age population is declining and we do not encourage investment, so the math simply does not work."

Nearly half of all companies say they have been approached by another state about relocating or are independently considering a move.

Excluding the pandemic, what's the main factor hampering your ability to grow in Connecticut?



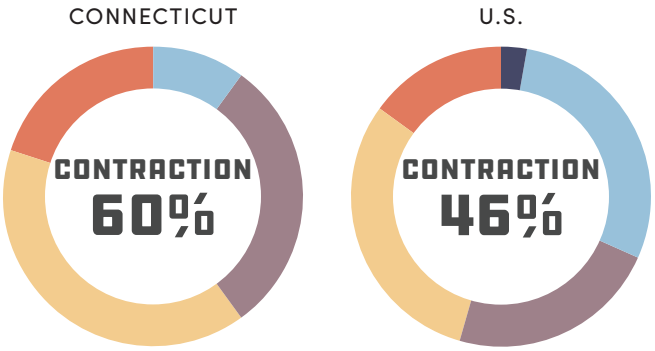
Source: CBIA July 2020 Connecticut manufacturing survey



General Assembly ratings: Economy & job creation

- Strongly approve (2%)
- Somewhat approve (17%)
- Neutral (30%)
- Somewhat disapprove (23%)
- Strongly disapprove (28%)

Source: CBIA July 2020 Connecticut manufacturing survey



Manufacturing growth outlook

- Strong growth (0%, 3%)
- Moderate growth (10%, 29%)
- Static (30%, 23%)
- Moderate contraction (40%, 31%)
- Strong contraction (20%, 15%)

Source: CBIA July 2020 Connecticut manufacturing survey

As for states that have proactively solicited Connecticut manufacturers, South Carolina tops the list, followed by Florida, North Carolina, and Texas. Many manufacturers report solicitations from multiple states.

According to survey respondents, business friendliness and lower taxes were the top reasons for considering a move (76%), followed by proximity to customers (14%) and cost of labor (10%).

Asked about their outlook for the Connecticut economy, 60% expect a contraction over the next 12 months, including 20% who project a strong decline in growth. Only 10% see the state's economy growing in the next year and 30% expect economic conditions to remain static.

Their expectations for the national economy are more optimistic, with 32% expecting growth, 46% a contraction, and 23% predicting static conditions.

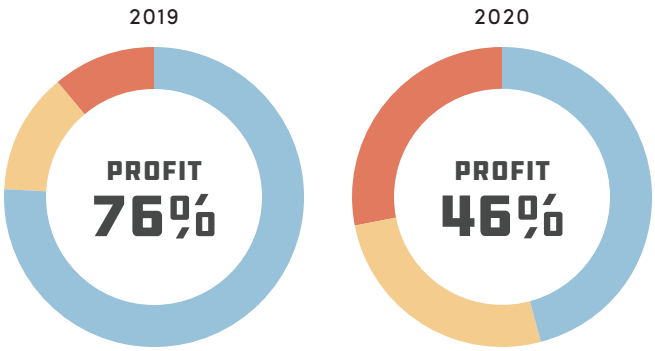
COVID-19'S ECONOMIC IMPACT

Although now a distant memory, 2019 was a strong year for most Connecticut manufacturers, with 76% of surveyed firms reporting a profit last year, up slightly from 75% in 2018. Thirteen percent reported breaking even, and 11% posted losses.

More than half (53%) pointed to a strong national economy and increased sales as the reason for their profits, while 41% credited their own strategic decisions. Approximately 5% identified federal government spending and contracts as the reason for their growth.

While roughly half of those who lost money in 2019 pointed simply to decreased sales, nearly 30% reported that input prices, mainly labor and materials, were the key factors driving losses.

Manufacturing profitability sector



- Profit (76%, 46%)
- Break even (13%, 26%)
- Loss (11%, 28%)

Source: CBIA July 2020 Connecticut manufacturing survey

Despite the COVID-19 crisis and lockdowns crippling the world at the end of the first quarter and well into the second, nearly 53% of respondents said they still managed to turn a profit for the first half of the year.

However, as of July, only 18% said their businesses were still growing, while 82% said they were either contracting or holding steady.

Only 46% of Connecticut manufacturers now anticipate a profit for 2020 (versus 76% in 2019), while 28% are forecasting losses, compared with 11% last year. Twenty-six percent expect to break even this year.

The aerospace sector, which accounts for the largest percentage of manufacturing employment, is taking an outsized hit this year because of the dramatic decline in commercial air travel.

A number of those who responded to CBIA's July survey are part of the supply chain for larger companies.

"We manufacture aircraft parts and worked through the toughest months until July 2020," noted one manufacturer. "We put almost all our employees on unemployment due to being impacted by no flights flying and we have seen an 80% decrease in our work load."

Those who make consumer products also struggled, with lockdowns and restrictions in place across the country. Noted one producer: "Our largest customer was closed for 10 weeks. And the closing of retail shops and malls negatively affected our company as our products are often sold through traditional brick and mortar."

Many manufacturers pivoted, retooling production lines to make PPE, surgical gowns, ventilators, hospital beds, and other urgently needed supplies.

"We repurposed one factory and started making PPE," said one manufacturer. "We are trying to sustain this business by creating a new company division."

Others changed up their business models. One Connecticut brewery, forced to close its taproom, offset some of the revenue losses by moving to curbside takeout.

Pandemic-driven changes in consumer behavior are also causing significant disruptions, as another survey respondent explained: "We are a cosmetic raw material supplier to the major cosmetic manufacturers and with people working from home, not going out, and the face mask requirement, there was a big drop in cosmetic sales."

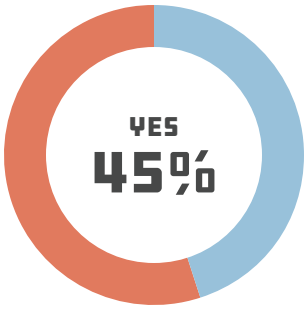
Less than half (45%) of surveyed manufacturers introduced a new product in the last 12 months, while 40% said they plan on introducing a new product in the coming year. One-quarter (25%) are unsure about their new product plans and 35% will not launch a new product.

Seventy-nine percent of those rolling out new products in the coming year will manufacture them in Connecticut, 13% will locate partial production here, 4% will produce elsewhere, and 3% are uncertain.

OPERATING THROUGH COVID-19

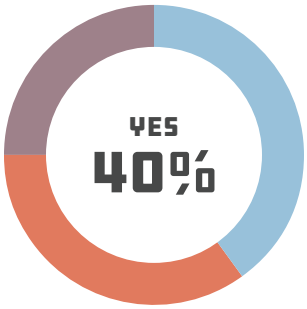
Most Connecticut manufacturers' doors stayed open throughout the pandemic. Nonetheless, operating through significant disruptions and restrictions has been incredibly difficult.

It is clear from responses to the July survey that the pandemic is taking its toll on employees and employers



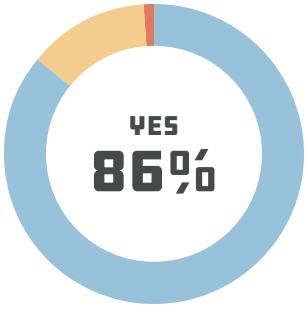
Did your company introduce a new product in the past 12 months?

- Yes (45%)
- No (55%)



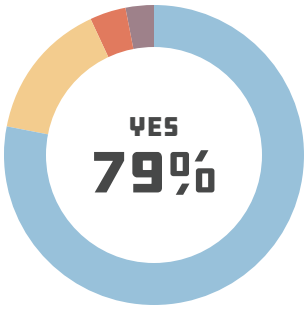
Will you introduce a new product in the next 12 months?

- Yes (40%)
- No (35%)
- Unsure (25%)



Are your products manufactured in Connecticut?

- Yes (86%)
- Partially (13%)
- No (1%)



Will your new products be made in Connecticut?

- Yes (79%)
- Partially (15%)
- No (4%)
- Unsure (3%)

Source: CBIA July 2020 Connecticut manufacturing survey

alike—from the daily grind of complying with health and safety guidelines, to the ongoing issues with childcare and the growing uncertainty about the future.

"This pandemic has created a significant stress on all our employees," noted one respondent. "From stresses of working from home, educating their children full-time while working from home, concerns for their health and well-being and that of their family, travel restrictions and state shutdowns, and the looming uncertainty of when it may end.

"While we have not had any COVID-19 cases with employees, we have had to address many other health issues arising from the stress and duress of daily living in this new normal."

Economic weakness and reduced demand have impacted the revenues of almost two-thirds of companies (65%), while new health and safety protocols, employee concerns, and supply chain interruptions have driven up costs and challenged production.

While some manufacturers capitalized on new opportunities and hired additional workers to meet pandemic-related demand, most (56%) reported having to reduce employee hours, execute layoffs, or furlough employees.

State and federal emergency relief programs helped mitigate further workforce losses.

Eighty-five percent of surveyed manufacturers applied for a PPP loan and 97% of those applications were approved. Of those who received PPP funding, 91% said they met their employee retention goals, 5% were unsure, and 4% were unsuccessful.

Of those who did not apply for a PPP loan, 54% said they did not require government financing, 24% were ineligible, and 16% either applied for other federal programs or were wary about applying. Five percent accessed private financing sources.

Only 18% of surveyed firms applied for state pandemic assistance, including the Recovery Bridge Loan program administered by the Department of Economic and Community Development.

As for working remotely during the pandemic, 55% of companies said at least some of their employees were able to work offsite. For those respondents, an average 23% of their workforce clocked in from home during the initial months of the pandemic.

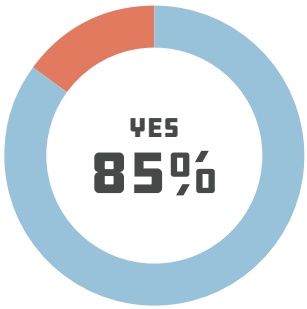
At the time of the survey, manufacturers reported an average of 13% of their workforce was still remote, and 9% anticipated that employees would continue working remotely.

Many also staggered shifts to reduce the number of onsite employees or created cohorts within their facilities to separate teams during the workday.

In addition to complying with Connecticut's COVID-19 guidelines—including mandatory masks or face coverings, social distancing, cleaning and sanitation protocols, and capacity limits—manufacturers implemented additional health and safety measures.

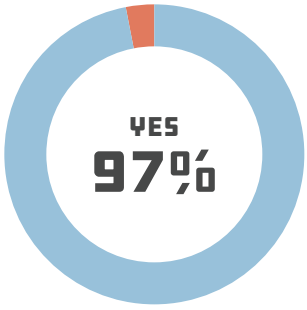
Forty-three percent of survey respondents carry out temperature checks for employees and customers, 27% conduct regular health screening checks, 10% test workers for COVID-19, while 20% adopted other measures, including air quality monitors, improved ventilation, and sophisticated air purification systems.

With a nascent recovery underway, 37% of manufacturers report they are having difficulty getting employees to return to work, citing the $600 temporary weekly federal unemployment benefit, health concerns related to potential exposure to COVID-19, and childcare issues as the primary factors.



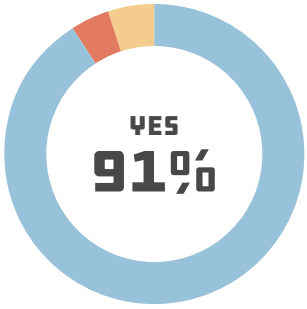
Did you apply for a PPP loan?

- Yes (85%)
- No (15%)



Was your application successful?

- Yes (97%)
- No (3%)



Did the loan allow you to meet your employee retention goals?

- Yes (91%)
- No (4%)
- Unsure (5%)

Source: CBIA July 2020 Connecticut manufacturing survey

WORKFORCE & HIRING

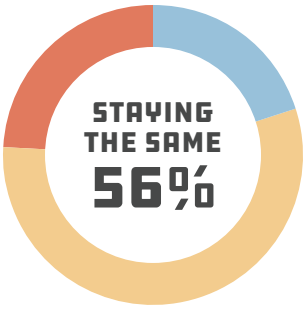
While uncertainty around the coronavirus pandemic and ongoing concerns with the direction of the state's economy are largely responsible for that trend, Connecticut continues to face a critical shortage of skilled workers, compounded by a shrinking labor force, population loss, retirements, and the state's high cost of living.

That shortage is felt most acutely in manufacturing. It's a significant concern, particularly as the state's skilled workforce is seen as a major competitive advantage—and manufacturers tell us the difficulty finding talent is also one of the primary obstacles to growth.

Connecticut is one of the oldest states by average age. Manufacturers say 41% of their workers are 40 years old or younger, while 25% of managers are 40 years old or younger, with 11% of the current workforce expected to retire between 2021 and 2024.

Only 20% of surveyed manufacturers expect to increase their workforce over the next six months. More than half (56%) say employment levels will remain stable and 24% expect a decrease.

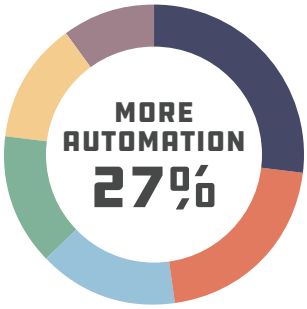
Manufacturers also expect to make operational and workforce changes in the post-COVID environment, with 27% adopting more automation, 21% increasing employment levels, 15% expanding remote work, 14% employing fewer workers, and 13% relying more on part-time and temporary employees.



Is your workforce...

- Growing (20%)
- Staying the same (56%)
- Declining (24%)

Source: CBIA July 2020 Connecticut manufacturing survey



What post-COVID workforce changes do you anticipate making?

- More automation (27%)
- Add jobs (21%)
- Expand remote work (15%)
- Fewer jobs (14%)
- More part-time, temporary employees (13%)
- Other (10%)

Source: CBIA July 2020 Connecticut manufacturing survey

Forty-eight percent of manufacturers report challenges finding and retaining young workers. Just 25% say they have no trouble finding and retaining young workers, 22% have issues only with attracting younger workers, and 4% only with retaining them.

The main obstacles for finding qualified young workers include a lack of skills or expertise (40%), proper work ethic (28%), competition from other employers offering higher wages and/or more expansive benefits (16%), and the state's high cost of living (10%).

State government has placed a growing emphasis on workforce development, including driving the consolidation of many of the different initiatives across Connecticut to better leverage resources and opportunities.

'WORKFORCE DEVELOPMENT STARTS IN KINDERGARTEN'

The head of the state's new workforce development office said Connecticut must begin its workforce development efforts early if it's going to meet the manufacturing industry's demand for thousands of skilled workers.

"Workforce development starts in kindergarten," said Kelli-Marie Vallieres, director of the new office tasked with coordinating Connecticut's various workforce development programs.

"Students are the product of the system and we have to produce a product that industry needs."

Vallieres was an established leader in Connecticut manufacturing when Gov. Ned Lamont tapped her this summer to serve as executive director of the new Workforce Development Unit within the Department of Economic and Community Development.

The new office will coordinate workforce development policy, including training, education, and worker placement.

Vallieres continues serving as vice chair of the Governor's Workforce Council, a position she's held since October 2019.

In the short time since she began, Vallieres has immersed herself in her new job.

"We're getting a lot of momentum about introducing workforce development into our curriculum," she said.

She envisions a curriculum that not only teaches math, science, reading, and writing but provides students with concrete examples of how those lessons are used in various professions.

"We want to expose children to the world of work by middle school, then build out career pathways by high school," she said.

Vallieres also oversaw the council's recent completion of a strategic plan for next year, which will guide her office's efforts.

The plan puts industry at the center as the customer and the student as the product for that customer.

"We're undergoing a solid detailed process to implement this plan," she said. "Some things are a multiyear initiative, some are intermediate, and some short term."

One of the first steps is getting state agencies to work together on workforce development efforts, which will happen through better data management, then breaking down barriers to entry into the workforce, she said.

"The data management systems are old and don't talk to each other, so making data-driven decisions is difficult to do across departments," Valllieres said.

"We have a system that integrates some data but it's not intuitive.

"But there's work going on, things happening to improve systems, including a big focus on our data management system."

She said state agencies are partnering in the workforce development effort and "starting to put their arms around the magnitude of this and working to make improvements to the system."

The state must also address equity and access to workforce development for underserved populations, she said.

"There's a lot of work to be done to remove those barriers and a lot of funding that needs to go into these programs," she said.

"We must also address the equity gap for underserved populations."

"Students in underserved populations in some cases don't have people in their lives who have meaningful jobs."

Vallieres also stressed the need for workforce development for adult populations, including the underemployed and underskilled who need to be reskilled.

Vallieres singled out child care as an example of a barrier.

"The child care system was broken before the pandemic," she said. "It discourages people to engage in work because everything they make goes to child care. That's even if they can find child care."

Vallieres points to her own experience as a young working mother.

"After I had my second child I was making $50 a week after childcare," she said. "You ask yourself, 'Is it really worth it?'"

Vallieres likes to quote West Hartford business leader Ari Santiago when discussing the differences between manufacturing 40 years ago and today.

"Ari says, 'We used to think of manufacturing as dark, dingy and dirty. Today, it's clean, lean, and green,'" she said. "Also, 'You used to have to use your brawn. Now you have to use your brain.'"

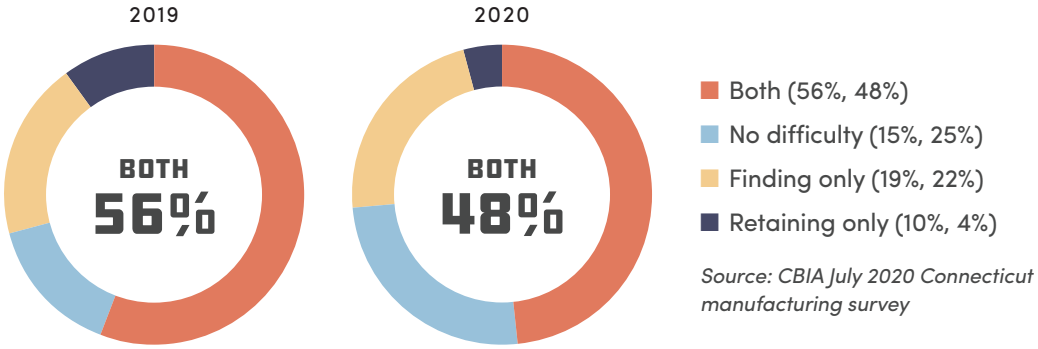
That's because the lines that separate IT, computer science, and manufacturing are disappearing, Vallieres said.

"Running those machines is running computers, plus you have the quality control aspect that's computerized and statistical," she said. "It makes it exciting.

"The next industrial revolution is going to revolve around artificial intelligence and smart factories, and we won't lose jobs, we'll improve the quality of them.

"That's why we need to start focusing on the children in school today. They will be our workforce of the future."

Is it difficult to find and/or retain young workers?



Source: CBIA July 2020 Connecticut manufacturing survey

For instance, in July, the Lamont administration established the Connecticut Workforce Unit, appointing manufacturing CEO Kelli-Marie Vallieres [see page 15] to lead the office, which will work with private and public sector stakeholders on a statewide workforce development plan.

REBUILDING CONNECTICUT

Pandemic aside, manufacturers have a laundry list of factors inhibiting growth and job creation in Connecticut.

When forced to pick just one, it was a near toss-up between the scarcity of skilled labor, onerous and expensive regulations, the high cost of living in the state, uncertainty and unpredictability of legislative decision-making, and tax burden.

Manufacturers were asked what additional assistance the state government could provide to help companies rebuild. Their responses were illuminating, as they spoke more to the conditions that hampered Connecticut's recovery from the last recession than the pandemic.

Those structural conditions remain and clearly concern manufacturers. For instance, 39% called for cutting government spending and lowering taxes, 25% wanted additional financial recovery assistance, 15% called for an easing of restrictions and shutdowns, 14% cited less government interference in the private sector, and 9% pushed for policies that will support and improve economic growth.

"The state has been fairly good thus far in proactive responses to the virus, even though some have been quite painful for many businesses," responded one manufacturer. "They are necessary for public health and well-being as the numbers are beginning to show in Connecticut versus other more careless states.

"For the longer term, state spending and unfunded liabilities must be strongly dealt with to reduce the tax and regulatory burdens on businesses so that a better environment for recovery is created."

Said another: "Being closed was a huge challenge. In the event we have to close again, that is where we will need help. As for helping small businesses, the only way to help is to support them. Buy local, support Connecticut."

We also asked manufacturing leaders to identify the top policy priority for lawmakers in the General Assembly's 2021 session.

Forty-three percent called for prioritizing state spending controls (including pension reforms), 27% supported lower taxes or tax reforms, 14% identified business-friendly policies, 12% called for better COVID-19 safety compliance guidance and training, and 5% want more policies driving economic growth and job creation.

Connecticut policymakers must better understand the obstacles to growth faced by the state's manufacturing sector and demonstrate support for this critical component of our economy.

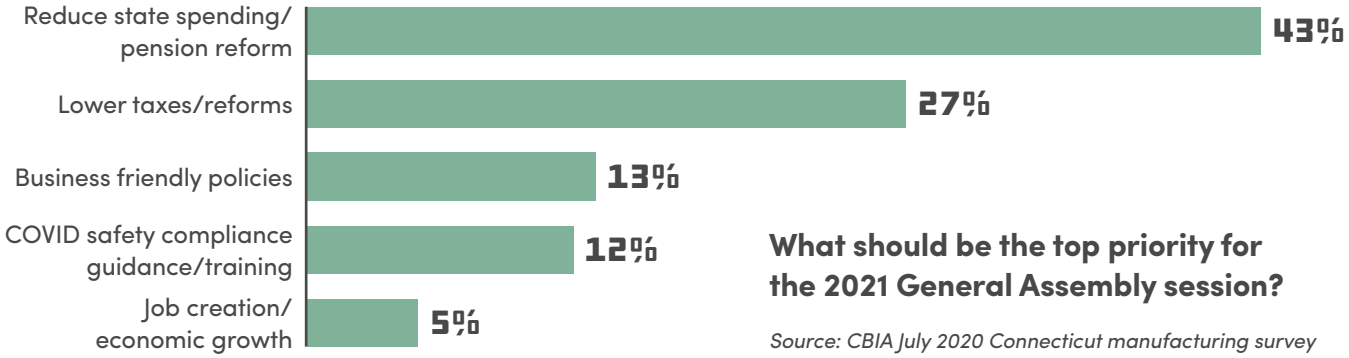
The task ahead is a daunting one. Rebuilding Connecticut's economy is a challenge unlike any we have faced in modern times, one that can only be met by dramatically reshaping the relationship between job creators and government.

As Connecticut charts its economic recovery, it's clear the state needs a new way of thinking, a truly collaborative approach between the public and private sectors that focuses on nurturing businesses and promoting and driving job and economic growth.

Connecticut can rebuild its economy and get people back to work.

Let's seize the moment to capitalize on the state's many strengths and not only restore our economy, but make it more vibrant and robust than ever.

It's time to support policies that will help manufacturers—particularly small manufacturers—manage the high cost of navigating COVID-19 restrictions, create and retain jobs, and lead the state's economic recovery and growth for the benefit of all.



What should be the top priority for the 2021 General Assembly session?

Source: CBIA July 2020 Connecticut manufacturing survey

POLICY RECOMMENDATIONS

WORKFORCE DEVELOPMENT

- **Tailor** workforce development programs to prioritize high-value, in-demand industries—such as aerospace, software engineering, medical devices, biopharma, and fintech—and focus on defined pathways for educational and career development
- **Streamline** the professional licensing process, remove barriers for apprenticeship training requirements, and recognize equivalent out-of-state licenses for those moving here to increase workforce strength
- **Expand** the state's manufacturing apprenticeship tax credit program to include small manufacturers and repeal the state sales tax on employer training programs

URBAN RENEWAL

- **Drive** much-needed investments in our cities and towns by overhauling environmental remediation statutes and regulations, streamlining permitting, cutting red tape, and conforming state rules with federal standards

INFRASTRUCTURE INVESTMENT

- **Support** a bipartisan transportation funding plan that provides the necessary resources to rebuild and modernize Connecticut's infrastructure while protecting Special Transportation Fund revenues
- **Leverage** public-private partnerships to speed planning and completion of priority transportation projects, additional infrastructure projects such as critical bioscience laboratory space, and revitalize and grow the economies of our cities

SMALL BUSINESS RELIEF

- **Repeal** the 6.35% state sales tax on employment training and safety apparel, including personal protective equipment
- **Restore** the pass-through entity tax credit to its original 93%—the 2019 reduction costs small businesses $53 million annually
- **Restore** the R&D tax credit to attract entrepreneurs, foster startup businesses, and promote private sector investment

TAXPAYER ROI

- **Deliver** greater value to taxpayers by expanding the use of nonprofit organizations to deliver state services, implementing broad-based technology solutions, cutting duplicative state functions, and eliminating overtime and mileage in pension calculations
- **Restore** the long-term financial sustainability of the state's Unemployment Trust Fund through the adoption of benefit reforms already implemented as best practices by neighboring states

These policy recommendations form the framework of CBIA's Rebuilding Connecticut pledge. As of mid-October, more than 120 state elected officials and candidates have signed the pledge, which is also supported by over 95 businesses and organizations from around the state. Learn more at rebuildct.com.

REBUILDING CONNECTICUT

KEY STAKEHOLDERS

ADVANCECT

AdvanceCT is a nonprofit organization that works to engage, retain, and recruit businesses and advance overall economic competitiveness in Connecticut.

Through its close partnership with the Department of Economic and Community Development, AdvanceCT is enhancing Connecticut's ability to retain and recruit companies by taking a highly strategic approach to business development and business engagement.

Originally established in 1993 as the Connecticut Economic Resource Center, Inc., the economic development entity changed its name to AdvanceCT in 2020.

Manufacturing has a long history of driving economic activity in our state, and AdvanceCT will continue to nurture this thriving sector in our transformed efforts.

With the support of the Lamont administration, AdvanceCT's repurposed mission is to spur economic development in close partnership with the public and private sectors.

AdvanceCT has attracted some of Connecticut's most important business leaders to its board of directors, a reflection of the private sector's sense of urgency to address Connecticut's economic and business competitiveness.

AdvanceCT is collaborating with numerous stakeholders to develop a strategic plan for Connecticut's economic future, including ensuring Connecticut has a properly trained workforce, today and in the future.

Visit advancect.org

CONNECTICUT DEPARTMENT OF ECONOMIC & COMMUNITY DEVELOPMENT

Manufacturing is an important economic driver for the state of Connecticut and a key area of focus for the Department of Economic and Community Development.

DECD works closely with the sector to address challenges and opportunities facing manufacturers of all sizes. Over the next 12 months, the chief manufacturing officer will focus on:

- Initiating the Connecticut Defense Manufacturing Community Consortium focused on the digital transformation of the defense supply base and commencing the Digital Model Initiative which includes pilot programs for 6 defense suppliers, the development of the playbook with best practices and lessons learned, and curriculum and certification development around Model Based Definition.

- Restarting the Manufacturing Voucher Program utilizing the $5 million in MAA funds (critical as we look to emerge from COVID-19 and the associated recession) and then securing multi-year funding for the Manufacturing Innovation Fund to support programs around apprenticeship, incumbent worker training, outreach efforts to the K-12 student population, and grants for technology adoption, efficiency gains, and capacity expansion.
- Developing and implementing initiatives around emerging technologies including offshore wind power and electric vehicles.
- Supporting initiatives developed by the Governor's Workforce Council, including development of regional sector partnerships and career pathways and efforts to ensure access for all our residents to workforce opportunities.
- Other areas that will receive focus include: Access to capital for small manufacturers and select regulatory reform.

Visit ct.gov/decd

CONNECTICUT DEPARTMENT OF EDUCATION

The Connecticut State Department of Education continues to work closely with the Office of Apprenticeship Training to design rigorous, multiple, and flexible pathways and programs of study to provide students with the skills demanded by industry for a high-skill, high-wage, and in-demand career in manufacturing and STEM fields.

To assist in creating partnerships between business/industry and educators that enhance student career preparedness, CSDE has partnered with the Connecticut Science Center and ReadyCT to establish a STEM Externship Cohort. This cohort provides Connecticut Career and Technical Education educators, school counselors, and members of STEM business and industries opportunities to meet, collaborate on instruction, and develop externship experiences.

Per Public Act No. 19-68: An Act Establishing the Connecticut Apprenticeship and Education Committee, the Manufacturing Committee transitioned and is now the Connecticut Apprenticeship Committee. The law required the committee to analyze whether current apprenticeship training programs available to Connecticut residents are meeting workforce needs. Also, the committee will expand the Introducing Students to Manufacturing: Best Practices Guide and Program Resources to introduce middle school and high school students, their parents or guardians, guidance counselors and school counselors to other careers (e.g., insurance, healthcare, financial technology, biotechnology, STEM, construction trades, and hospitality industries).

On July 1, 2020, the U.S. Department of Education approved Connecticut's Strengthening Career and Technical Education for the 21st Century Act (Perkins V) State Plan. This plan was created in partnership with the Perkins V leadership group and Connecticut stakeholders. The plan ensures the CSDE meets the needs of all learners and includes: (1) CSDE goals and levels of performance of CTE activities, (2) evidence-based and innovative strategies and activities to improve and modernize CTE and align workforce skills with labor market needs, and (3) a strategic vision and goals for preparing an educated and skilled Connecticut workforce.

Visit ct.gov/sde

CONNECTICUT COLLEGE OF TECHNOLOGY & REGIONAL CENTER FOR NEXT GENERATION MANUFACTURING

The Connecticut College of Technology and its Regional Center for Next Generation Manufacturing address the need for highly skilled workers in the advanced manufacturing workplace by building programs that provide resources to educators and students interested in learning new skills and competencies in advanced manufacturing technology.

RCNGM is one of three Centers of Excellence in Manufacturing across the nation funded by the National Science Foundation and is administered by Tunxis Community College in Farmington. COT is a consortium of all 12 Connecticut public community colleges, 10 public and private universities, the Connecticut Technical High School system, as well as comprehensive high schools.

COT's Site Coordinators Council provides statewide leadership for the implementation of a nationally recognized and award winning, stackable credential model that provides credit certificates and associate's degrees that both prepare students for employment as well as transfer seamlessly to bachelor's degree programs in engineering science and technology studies.

In 2021, COT-RCNGM seeks to provide Connecticut high school teachers and community college faculty with professional development opportunities that include workshops on smart manufacturing and professional and technical skills including virtual reality and mechatronics.

In addition, outreach activities for inner city high school students will continue to be offered after school and on Saturdays. In collaboration with industry partners, Industry-driven entrepreneurial projects for current COT students will be offered as well as internships and apprenticeship experiences.

COT-RCNGM will continue to create and identify virtual resources and best practice models that can be used in engineering and technology programs across the U.S. by high school and community college educators and as a result produce technicians and engineers for the advanced manufacturing workforce.

Finally, COT-RCNGM will continue to partner with industry and professional associations to produce and disseminate outreach materials that market high-tech manufacturing careers.

Visit nextgenmfg.org

CONNECTICUT DEPARTMENT OF LABOR

As demand for highly-skilled workers increase and career exploration cannot occur only in the schools, it is vital for employers and industry to engage in strengthening the connection between educators, students, careers and the community.

This collaboration will ensure students have exposure to the necessary career ready skills for their chosen occupation/career field.

Business and industry can offer job shadowing, mentoring, work-based learning and apprenticeship program opportunities that are crucial to career development.

By accelerating necessary training and cultivating talent, these employer led program designs provide screened, well-prepared workers new to an industry by receiving a combination of industry-based formalized training and classroom instruction for potentially acquiring and retaining new employees.

Visit ctdol.state.ct.us

CONNECTICUT TECHNICAL HIGH SCHOOL SYSTEM

The Connecticut Technical Education and Career System understands the urgency to build a skilled manufacturing workforce, and is committed to supporting the labor needs of Connecticut employers.

Students in grades 9-12 can choose from five manufacturing programs: Automated Manufacturing, Mechanical Design and Engineering, Mechatronics, Precision Machining, and Welding and Metal Fabrication. Additionally, adult learners can participate in full-time manufacturing programs or part-time apprenticeship and extension related-instruction courses.

This year, CTECS aligned its manufacturing curriculum to the National Institute for Metalworking Skills skill standards. Tooling U-SME training was offered and became a virtual learning resource, a necessity during the COVID-19 pandemic. Adult apprenticeship and extension course offerings expanded to include welding, CNC machining and MasterCam, and for the first time were offered in an online format.

In the 2019-20 academic year, 186 grade 11 and 12 manufacturing students were employed by a manufacturer participating in Work-Based Learning, a program designed for students to gain hands-on experience and create a skilled-labor pipeline. CTECS actively looks to partner with industry and grow this number.

Working with Connecticut's community colleges, CTECS helps facilitate incumbent worker training, and continues to support the development of articulation agreements to create manufacturing pathways.

Visit cttech.org

CONNECTICUT MANUFACTURERS' COLLABORATIVE

Connecting the major manufacturing organizations in Connecticut and the broader universe of manufacturing-focused agencies, institutions, and government officials across the state, the Connecticut Manufacturers' Collaborative has quickly demonstrated its value.

Established in 2018, the CMC originated and led the effort with the Lamont administration and the legislature to create the chief manufacturing officer position within the Department of Economic and Community Development.

That position has already proven to be an invaluable asset for the manufacturing community and policymakers alike.

With the onset of COVID-19 in early 2020, the state deemed all manufacturing in Connecticut essential, keeping operations running during the pandemic. The designation created an immediate and urgent need for effective and continuous information flow among manufacturers, the administration, and the legislature.

The CMC initiated video conference calls three times per week, which provided manufacturers with the latest on state and federal developments and informed policymakers about immediate manufacturing challenges and needs, while ensuring there was a regular opportunity to have questions asked and answered.

As administrators of the CMC, CBIA and its CONNSTEP affiliate, provide a wealth of online resources for manufacturers and worked closely with state and federal emergency management officials on behalf of the CMC to facilitate the production and distribution of personal protective equipment to hospitals, small businesses, and nonprofit organizations.

Looking ahead, the major underlying challenges facing the sector remain key CMC priorities: an aging workforce, technology innovation, upskilling incumbent workers, attracting more young people into manufacturing, and creating a more comprehensive, vertically coordinated education system to train the manufacturing workforce of the future.

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