

# The Republican.

## Advanced manufacturing has potential to revolutionize region: Guest viewpoint

By Jim McGovern

New England has a proud history of pushing the limits. Whether in the field of education, government, business or manufacturing, our six states have revolutionized society throughout history. Today, we are poised on the threshold of another revolution – in [advanced manufacturing](#).

But what are we going to make in five years... in ten years? Will our advancements be in biotechnology, medical devices, green technology, or something else? How can we position our region to be the leader in these specialized areas? A recent report produced by The New England Council and Deloitte Consulting, "[Advanced to Advantageous: The Case for New England's Manufacturing Revolution](#)," details our strengths and the challenges we must overcome to capitalize on our region's competitive advantages in these fields. According to the report, the Massachusetts Second Congressional District is home to two regions in greater New England that are particularly competitive in advanced manufacturing sectors - the I-91 Corridor and the Blackstone Valley Corridor.

Having visited many manufacturers located in these regions of my district, I am constantly reminded of the significant differences between the manufacturing of yesterday and the manufacturing of today. When talking about manufacturing, many reference the manufacturing of one hundred

years ago, replete with low-skilled, poorly paying, dirty and dangerous jobs. Manufacturing jobs of today are highly skilled, exciting, safe and well-paying. But there simply aren't enough skilled workers to meet the demand that has been created by the growth in advanced manufacturing.

I am encouraged by collaborative efforts within Massachusetts to strengthen and modernize our manufacturing base. The [Massachusetts Manufacturing Extension Partnership](#) (MassMEP), in particular, has been an important resource for manufacturers looking to identify and overcome strategic, operational, and workforce challenges. MassMEP has placed a special focus on developing a next-generation workforce through training opportunities, apprenticeship programs, and collaborations with colleges and universities in Massachusetts.

Additionally, our Regional Employment Boards and Community Colleges play a critical role in training and re-training the workers necessary to fill these jobs. Within our education system, vocational and technical education programs are creating pathways for students into advanced manufacturing. Programs such as [Connecting Activities](#), a Massachusetts Department of Elementary and Secondary Education program, links education, business and workforce development partners through paid internships. These internships provide students with valuable work experience and enable employers to determine if a student is the correct fit. But the competition among employers for highly skilled workers is fierce. In fact, employers across city, and even state, lines are competing for the same small pool of skilled workers. If we are going to get serious about the future of advanced manufacturing in our region, we must work collaboratively across state lines to develop a skilled workforce.

According to the report, there were approximately 18,000 unfilled advanced manufacturing jobs in New England in 2011 and 2012. Working together, New England can develop the workforce necessary to fill those jobs and expand our workforce – potentially reversing the flow of jobs overseas. That's why I was pleased to see that the Advanced to Advantageous report recommended that New England pursue a federally supported advanced manufacturing hub under the [National Network for Manufacturing Innovation](#) (NNMI) in

order to address industry challenges and train the workforces necessary to fill these jobs.

In January 2013, the White House's National Science and Technology Council released the "[National Network for Manufacturing Innovation: A preliminary Design](#)" report. Prepared by the federal Interagency Advance Manufacturing National Program Office after a nationwide outreach effort, this report laid the groundwork for President Obama's creation of a nationwide NNMI to scale up advanced manufacturing technologies and processes. On December 16, 2014, the President signed the [Revitalize American Manufacturing Act](#) into law, creating NNMI. As co-chair of the Northeast Midwest Congressional Coalition, which focuses on strengthening manufacturing in our region, I strongly believe that a regional advanced manufacturing center would increase regional cohesion and improve interstate partnerships between government, educators, and industry.

Despite the great recession, advanced manufacturing in industry clusters such as aerospace, defense, precision machining, medical devices and biotechnology has flourished. As we have done throughout history, New England has the opportunity to be revolutionary once again. It is time for our region to capitalize on our competitive advantage. It is time for advanced manufacturing to take its place in our storied history of revolutions.

***Jim McGovern** is a member of the United States House of Representatives, representing Massachusetts's 2nd congressional district.*

LINK:[http://www.masslive.com/opinion/index.ssf/2015/05/guest\\_viewpoint\\_11.html#comments](http://www.masslive.com/opinion/index.ssf/2015/05/guest_viewpoint_11.html#comments)

LINK to Upton Daily (also published there): <http://uptondaily.com/2015/05/14/congressman-jim-mcgovern-new-england-has-the-opportunity-to-be-revolutionary-once-again-in-advanced-manufacturing/>

# The Providence Journal

By John Hailer and James Brett

May 18, 2015 2:01AM

## **John Hailer and James Brett: Manufacturing needs workers**

New England's manufacturing sector is often viewed as a dwindling, weakened force that is much more a piece of our past than a relevant component of our present economy.

But the reality is manufacturing is still a strong sector for the region: it just looks different. Last year, Rhode Island exported \$1.68 billion in manufactured goods, and manufacturing remains a critical piece of the local economy.

Despite this success, it will take a partnership among New England policymakers, business leaders and academia to fully realize the opportunities presented by modern, high-tech advanced manufacturing.

Today it's the knowledge economy that drives so much wealth and has become the key to a new industrial age. This is an opportunity for all of the New England states and citizens at all income levels. But we will only reap the benefits by making the correct investments and taking the proper actions.

The use of highly precise components, product customization and complex designs are pushing the need for better technology and a more highly skilled workforce. Already, nearly 60 percent of the more than 640,000 manufacturing jobs region-wide are categorized as "advanced."

That means New England is uniquely positioned to enhance the industry's success since the most common requirements of emerging and growing technologies are right in our wheelhouse. Consider where our region's manufacturing strengths lie: aerospace and defense, medical devices and biotechnology, semiconductors and complex electronics. We also have region-wide capabilities in software, artificial intelligence, robotics and advanced materials, which further strengthen these core industry clusters.

But we face challenges that must be addressed. On top of New England's high cost of doing business, we have a shortage of qualified labor. There is also a general lack of awareness of the employment opportunities in advanced manufacturing.

Small and medium-sized manufacturers also struggle to scale effectively and adopt emerging technologies at the rate demanded by their larger colleagues and competitors. We have the ability to provide vital technical assistance, and we should do so.

Every challenge we face also represents an opportunity to be harnessed. And we can accomplish that with a comprehensive plan.

The New England Council, in partnership with Deloitte Consulting LLP, recently published a study that assesses the state of advanced manufacturing in the region and offers several key recommendations to best position New England to grow its advanced manufacturing sector for future generations of middle-class workers. Indeed, this report acts as a roadmap for New England's sustained industry advantage.

The first step: industry partnerships and apprenticeships. Our region must expand collaboration between industry and educational institutions so that students are not only ready to work, but can generate new ideas and spur innovation. We also need more connective tissue in the education pathway. This means a fully integrated system beginning in high school that carries through higher educational institutions, technical and vocational education, internships and work experience. An entire silo of our education system ought to be dedicated to creating the manufacturing workforce of the future.

Additionally, we must develop the programs and support necessary to help small and medium-sized entrepreneurs and manufacturers grow to scale.

New England policymakers must play a leadership role in aligning public policy with the needs of this industry. An important step would be to secure a federally-supported National Network for Manufacturing Innovation (NNMI) institute in our region, a "teaching factory" that would serve as a resource for industry here and nationwide.

Lastly, the report calls for building a better brand. Even when we call it advanced, "manufacturing" sounds old and tired. The truth is we are at the cusp of a real "maker revolution." And that far better reflects the high pay, critical thinking, advanced technologies and innovative designs that define it.

Our region is at a real turning point and it is critical that stakeholders from industry, academia, and government heed this call to action and respond appropriately. If we are to cement New England's ongoing legacy as a preeminent leader in manufacturing, it will take a collaborative effort from Newport to Bangor.

***John Hailer is chairman of the New England Council, and president and CEO for Natixis Global Asset Management in the Americas and Asia. James Brett is the New England Council's president and CEO.***

LINK: <http://www.providencejournal.com/article/20150518/opinion/150519420?template=printart>

# Burlington Free Press

## Vermont manufacturing at a pivotal point

JOHN BURTON Free Press contributor 12:12 a.m. EDT June 4, 2015

As part of my role on the Vermont Manufacturing Extension Center advisory board, I recently had the privilege of attending an event releasing the latest New England Council Advanced Manufacturing Report.

Advanced manufacturers use innovative technologies and highly integrated, tightly controlled processes to produce exceptional products. They embrace cutting edge materials and tools coming from the emerging nanotechnology, chemistry and biology fields. The integration of high precision, advanced materials and information technologies along with an exceptional workforce allows an advanced manufacturer to excel in the marketplace.

The earlier report was prepared in 2009. The good news is that advanced manufacturing is thriving. This success is due to our great combination of regional education, research and established manufacturing firms. New England has a competitive advantage in advanced manufacturing over any other region in the world. However, we are also at an inflection point and there are signs that our advantage is eroding.

This change is mostly due to an increasing worker skills gap. Most advanced manufacturing firms reported that they have a growing problem with unfilled positions because of a lack of qualified candidates. Advanced manufacturing firms in New England would grow quickly if these open positions could be filled.

Key Vermont statistics in the report show that the density of advanced manufacturing jobs compared to all manufacturing jobs in Vermont has increased by 8 percent since 2009. During this same time frame, traditional Vermont manufacturing jobs are down by 0.6 percent, whereas advanced manufacturing jobs in Vermont grew by 46 percent. This growth helped move Vermont up a notch so it now ranks fourth out of the six New England states in percentage of advanced manufacturing jobs.

Despite solid growth, a coordinated regional effort is needed to make progress on the increasing skills gap. We need to dispel old myths about manufacturing careers and educate teachers, guidance staff and parents that advanced manufacturing provides a

well-paid, challenging career path. Key to this effort are events like Vermont Manufacturing Day in October, which brings schools, kids and parents to see “behind the manufacturing walls” and educates them about the exciting careers available in advanced manufacturing.

There are highly localized “islands of excellence” such as the Burlington area that we need to better leverage to scale throughout the region. One way to close the gap is to provide better educational pathways for students through increased industry partnerships and apprenticeships.

The manufacturing industry needs to rebrand itself to spark the interest of bright students by catching their imagination through early involvement such as the “maker” movement. Recasting advanced manufacturing as the “science of business” may dispel the old myths of the dark, dirty and dead-end manufacturing jobs of the past.

Advanced manufacturers recovered from the economic downturn twice as fast as traditional manufacturing, which is still down about 13 percent from before 2008. Old-style precision manufacturing is shrinking and the report predicts dramatic changes in the next five years. Advanced manufacturing is key to the survival of manufacturing as it can turn a 10 percent regional cost disadvantage into a 6 percent advantage due to our skilled workforce that provides the highest value-add per employee than anywhere on the planet.

Small Vermont manufacturers need to scale up to remain competitive and afford the large capital costs for advanced manufacturing tools and techniques such as fully digital design, additive manufacturing, advanced sensors and robotics. Improved alignment with industry and government policy can also help to reduce costs, streamline regulations and support growth. If we are to grow our way out of the Vermont state budget problems, we need to do everything possible to assist advanced manufacturing to grow high paying jobs in our region.

John Burton is a co-founder of NPI, a technology management company in South Burlington. Contact him via [www.npi.net](http://www.npi.net).

LINK: <http://www.burlingtonfreepress.com/story/news/local/2015/06/04/vermont-manufacturing-pivotal-point/28425847/>

# Hartford Courant.

## Gas Supply Vital To State's Manufacturing

By GARY GREENBERG

Connecticut manufacturers need low cost energy, which gas provides

Often when commentators talk about our economy, they focus on innovative sectors like technology and life sciences, and more traditional businesses such as insurance and financial services. But manufacturing right here in Connecticut shouldn't be overlooked.

Manufacturing has its roots in New England and continues to play a significant role in providing good jobs and wages to employees throughout our state. A recent report issued by The New England Council, "Advanced to Advantageous: The Case for New England's Manufacturing Revolution," highlights both the resiliency and the great economic opportunity that advanced manufacturing offers to our economy.

Our company, Birken Manufacturing, specializes in jet engine components. We employ more than 110 people. Our workers are highly trained and skilled and we provide competitive wages and benefits. Companies like ours play an important role in the state's economy and we will continue to do so.

That said, the road ahead does have challenges for us. Among our challenges is the high cost of energy in New England. Fortunately, this is an issue that can be addressed.

We understand that lowering the costs of doing business in Connecticut is not only a responsibility of state government, but also the duty of each individual company. There are opportunities out there that will assist us in lowering costs if we take advantage of these very innovative programs. As an example, Birken has embarked on a Comprehensive Energy Project through the Connecticut Energy Efficiency Fund made available by Eversource (formerly Connecticut Light & Power). Through this project we will lower our power costs, switch from oil to natural gas for heating and provide better lighting for our employees. Eversource will rebate approximately 25 percent of our total cost at the project's completion. Our investment will be recouped by annual utility savings within five years.

However, we alone can only do so much. We need a partnership with the state government going forward. Increased use of affordable, cleaner-burning natural gas is central to Connecticut's 2013 Comprehensive Energy Strategy, which outlines a plan for addressing the shifting energy landscape through the year 2050. That strategic plan includes a seven-year effort to expand access to natural gas across Connecticut with a goal of providing nearly 300,000 Connecticut homes, businesses and other facilities with a natural gas option that they currently cannot obtain. The key to this strategy is assuring that affordable natural gas is available in our state.

The good news is that just a few hundred miles away sits one of the world's largest known supplies of natural gas — Pennsylvania's Marcellus shale gas formation. The challenge is building the pipeline needed to bring this gas to our state. Pipeline siting, approval and construction can take years, but we are fortunate that we have pipeline projects, such as the Constitution Pipeline proposal in New York, that are well along in the approval process. The Constitution Pipeline has received its Federal Energy Regulatory Commission approval and has secured the vast majority of its right of way. It is awaiting final approval from the state of New York. With sign-off from New York, the

privately financed Constitution Pipeline could be up and running within a year.

Reducing energy costs is critical to assuring a robust and growing manufacturing sector. Jobs that pay well, provide benefits and a good economic future for workers and their families can be secured if our leaders have the political will to support expanding our pipeline capacity. Moving companies out of the state is not the answer. Our skilled workforce may not follow. Our roots in know-how and technical capability should not be short-changed. There is a clear path for us to partner with our government to keep our state competitive.

Access to Pennsylvania's natural gas will limit our reliance on foreign, more expensive sources, will provide a clean source of energy to Connecticut and will bolster and protect our state's manufacturing businesses. We need to make sure that Pennsylvania's natural gas supply can make its way to New England. Businesses and families are depending on it.

*Gary Greenberg is the president of Birken Manufacturing in Bloomfield.*

LINK: <http://www.courant.com/opinion/op-ed/hc-op-greenberg-manufacturing-ct-energy-saving-plan-0616-20150615-story.html>

# Hartford Courant.

## Built On Manufacturing, Connecticut Still Has Room To Grow

By JAMES T. BRETT, CHRIS MURPHY

August 15, 2015

Connecticut is home to thousands of manufacturing companies and 160,000 manufacturing jobs. From household names like UTC, Sikorsky, Pratt & Whitney and Electric Boat to pioneering smaller companies throughout the supply chain, Connecticut is a state built on manufacturing.

As the economy continues its recovery, it is important that we recognize the critical role manufacturing plays in our state's growth.

Although many people still picture the smokestacks and crowded factory floors of the past as "manufacturing," today's industry is a far cry from that. Indeed, the four D's of manufacturing's past — dirty, dark, dangerous and declining — are being replaced by the four A's — advanced, advantaged, added-value and accelerating.

Connecticut manufacturers are second to none, which is why we must do everything we can to foster growth in this important sector.

A new report by the New England Council and Deloitte highlights the great potential for economic growth in the advanced manufacturing sector. This report, "Advanced to Advantageous: The Case for New England's Manufacturing Revolution," assesses where we are and where we are going as a region before laying out a blueprint to achieving continued success.

So first, where are we?

In New England, nearly 60 percent of our manufacturing jobs can be classified as advanced, including a whopping 72 percent in Connecticut. Advanced manufacturing pumps \$19.4 billion into the state's economy, and Connecticut is a leader in the aerospace, defense, medical device and biotechnology sectors, among others.

This is encouraging, but in a globalized economy, we must do more to strengthen this leadership.

Some of the challenges — such as the education skills gap and small business creation and growth — require a comprehensive plan of action.

"Advanced to Advantageous" lays out a plan for Connecticut and the entire New England region. Each recommendation emphasizes the critical importance of collaboration — between industry partners, higher education institutions, state governments and states.

**First, we need an educational pathway** that encourages a lifetime of learning — and credit for that learning at every step of the way.

**Second, we must expand industry partnerships** and apprenticeships and get younger generations excited about manufacturing. The "Connecticut. Dream It. Do It." initiative is a promising example of how to bring advanced manufacturing to middle and high school students so they gain a better understanding of the rewards of working in the field.

Additionally, the Connecticut College of Technology's Regional Center for Next Generation Manufacturing is making it easier for students to transition from two-year to four-year colleges while retaining credit for their previous coursework and experience.

**Third, we need to build a better brand** for manufacturing. Today's manufacturing is not that of the 1950s and 1960s. It is better viewed as part of the "maker movement," boasting high pay, a safe working environment, critical thinking, and advanced technologies and designs.

**Fourth, Connecticut and all of New England** would benefit immensely from hosting one of the advanced manufacturing centers under President Obama's National Networking for Manufacturing Innovation. We will continue concerted efforts already underway across the region to apply for and secure one of these hubs in New England.

**Fifth, we must support start-ups** and small businesses and ensure that state policies foster growth in advanced manufacturing. Connecticut and New England are blessed to have the Connecticut Center for Advanced Technology in our backyard as a resource for companies looking to implement innovative solutions, increase efficiencies and improve workforce development. It is a regional leader and a true model of success.

A recent discussion of the report at the University of Hartford drew dozens of manufacturers, state government officials, representatives from higher education and others excited about the prospects for Connecticut's manufacturing revolution, including Hartford's congressman, John Larson, who spoke passionately about the need for collaboration.

We are heartened to see the enthusiasm for the jobs of today's manufacturing here in our state and are committed to spreading the word about the reality of Connecticut's manufacturing base.

Connecticut succeeds when advanced manufacturing flourishes. By working together to tackle the most pressing challenges facing the industry, we can ensure that the same innovation and prosperity that manufacturing brought 200 years ago with the Industrial Revolution continues well into the future for New England families and communities.

*James T. Brett is president and CEO of The New England Council, a regional business association. Chris Murphy is Connecticut's junior U.S. senator.*

LINK: <http://www.courant.com/opinion/op-ed/hc-op-sen-murphy-bright-future-for-connecticut-advanced-manufacturing-20150814-story.html>

LINK to New Haven Register version: <http://www.nhregister.com/opinion/20150817/sen-chris-murphy-james-t-brett-built-on-manufacturing-connecticut-still-has-room-to-grow>