

Governor's Manufacturing Advisory Council

Recommendations to encourage growth in Pennsylvania's manufacturing sector



TEAM
Pennsylvania
FOUNDATION

2012 | An Advisory Council of Team Pennsylvania Foundation

Table of Contents

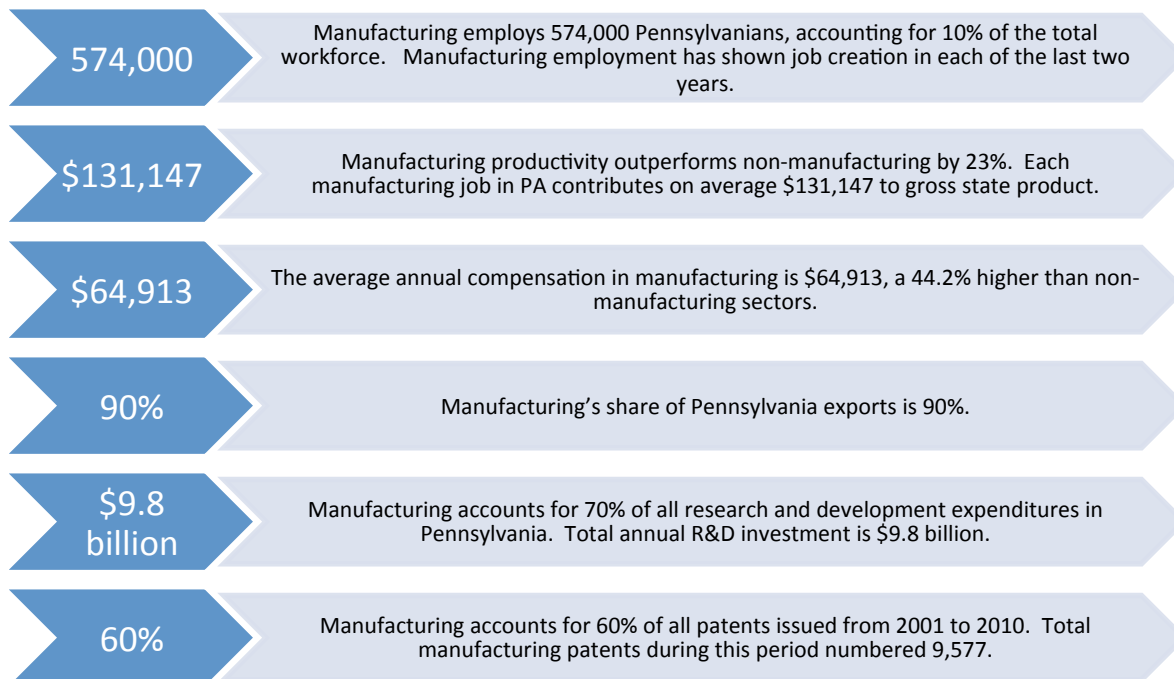
<i>Table of Contents</i>	2
<i>The State of Manufacturing in Pennsylvania</i>	3
<i>Structure & Process</i>	5
Council Background.....	5
Advisory Council Membership.....	6
National Governor’s Association (NGA) Policy Academy.....	9
<i>Recommendations</i>	10
Talent & Workforce.....	10
Opening New Markets (International, Domestic and Emerging Energy).....	15
Making Government Work Better for Manufacturers.....	18
Innovation.....	21
Access to Capital.....	24
<i>Appendix A Proposed Legislation Related to Recommendations</i>	26
Regulatory Climate.....	26
Infrastructure.....	26
Workforce Development.....	27
<i>Acknowledgements</i>	29

The State of Manufacturing in Pennsylvania

Following the challenges brought by the Great Recession, the manufacturing sector in Pennsylvania is undergoing a renaissance. With gross state product (GSP) now reaching \$71 billion, manufacturers in Pennsylvania account for over 12% of the total output in the commonwealth¹. Pennsylvania remains the 6th largest manufacturing state in the United States (utilizing GSP as a benchmark). Pennsylvania outranks other historically industrial states including Michigan, Indiana, New York and New Jersey². Pennsylvania is now producing more products than at any time in its history. For each of the last two years manufacturing employment has increased significantly and in 2011 alone 12,100 new jobs were created³. While employment continues to grow, the sector continues to experience measurable leaps in productivity driven by technology adoption and process innovation. Manufacturing productivity outpaces all other sectors with a staggering 259% increase over the last 40 years⁴.

With nearly 15,000 manufacturing establishments across the commonwealth, the outlook is bright for continued growth. Pennsylvania firms are building upon a proud heritage in manufacturing and have demonstrated new and creative approaches of integrating innovation into both products and processes. Recognizing the dynamics of the global marketplace, Pennsylvania hosts scores of multinational facilities exporting at record levels around the world accounting for more than 90% of all Pennsylvania exports.

Other key facts which underscore the importance of manufacturing in Pennsylvania include^{1,3}:



¹ National Association of Manufacturers; www.nam.org/statedata.org; and www.mfgdata@nam.org

² The Information Technology and Innovation Foundation (ITIF); www.itif.org

³ PA Department of Labor and Industry, Center for Workforce Information and Analysis

⁴ Pennsylvania's True Commonwealth – The State of Manufacturing, Challenges and Opportunities, February 2011

One of Pennsylvania's greatest strengths is its diversity of manufacturing. Unlike in most other states, no one sector accounts for more than five percent (5%) of the total number of firms⁴. Some of the commonwealth's predominant sectors include transportation, metal machining and fabrication, glass, chemicals and plastics. These industry sectors continue to be well positioned to support growth in emerging markets such as energy, including renewable and natural gas, as well as medical devices and life sciences.

Diversity in the establishment size of Pennsylvania companies also provides strength and stability. Ninety-eight percent (98%) of all manufacturing firms in the commonwealth employ fewer than 500 employees, accounting for 75% of the total manufacturing workforce⁵. In contrast, 23 Fortune 500 companies are headquartered in the commonwealth, including at least 10 that are primarily focused on the manufacturing sector.⁶ The investment and capacity of these firms, whether large or small, is leveraged and supported by an extensive network of supply chains within the commonwealth.

While the recession was especially hard on the manufacturing sector, there are strong indicators that manufacturing is leading the commonwealth's economic recovery. Taken as a whole, Pennsylvania firms have shown steady growth in both sales and in jobs since 2010. Exports continue to increase, with state export assistance programs recognized among the best in the nation. Additionally, there is a growing momentum in "reshoring" work, the relocation of work which had previously been outsourced to locations and facilities outside of the United States.

Manufacturing leaders continue to note a growing skills gap as they attempt to build their internal staff capacity for increased customer orders and new product demand. Likewise there are complaints of limited access to capital as leaders need to finance the inventory necessary to ramp up production to meet greater customer demand. While both limited available workers and limited available capital are real issues, these are also encouraging signs that manufacturing is on an upward trend and is leading Pennsylvania out of the recession.

⁵ PA Department of Labor and Industry, Center for Workforce Information and Analysis

⁶ 2012 Fortune 500 List – Fortune Magazine

Structure & Process

Council Background

Recognizing the challenges and opportunities in Pennsylvania's economy and with a keen awareness that manufacturing has led the commonwealth's growth since the days of the Industrial Revolution, Governor Tom Corbett announced the formation of a special task force to examine this industry's current and future state. The Governor's Manufacturing Advisory Council was created as a body of 24 manufacturing leaders and experts from all corners of the commonwealth. Governor Corbett appointed as Council Co-Chairs DCED Secretary C. Alan Walker and Mr. Carlos M. Cardoso, Chairman, President and CEO of Kennametal, Inc. Governor Corbett requested that Team Pennsylvania Foundation, the commonwealth's non-profit partner, manage and oversee the Council process from a private sector perspective without using tax dollars. With the support of the National Governor's Association (NGA) Advanced Manufacturing Policy Academy staff leadership team, Council members identified an agenda for each of the six meetings. They also gathered the information required to inform and guide their final recommendations. Full-day meetings were scheduled each month from January to June 2012. Subject matter experts were called upon to provide input and guidance, while the National Institute of Standards and Technology and the federal Manufacturing Extension Partnership (MEP) were brought in by Team Pennsylvania Foundation to assist in facilitating and supporting the process.

The general topics analyzed during the six primary sessions of the Council include:

- January 11, 2012 Manufacturing Overview – State and Federal
- February 17, 2012 Talent and Workforce Development
- March 12, 2012 Opening New Markets – Domestic and International
- April 11, 2012 Making Government Work for Manufacturers
- May 15, 2012 Innovation and Access to Capital
- June 12, 2012 Summary of Findings: Challenges, Opportunities, and Next Steps

The pages that follow capture the findings and recommendations of the Governor's Manufacturing Advisory Council.

Advisory Council Membership

The council consisted of 24 members from a diverse cross-section of manufacturing interests including heavy machinery, minerals, pharmaceuticals, plastics, steel and textiles.

Tom Corbett, Governor, Chair

C. Alan Walker, Co-Chair, Secretary, Department of Community & Economic Development

Secretary Walker brings over 30 years of experience in the private sector as President and CEO of Bradford Energy Company, Inc. to his role as Secretary of the commonwealth's lead community and economic development agency.

Carlos M. Cardoso, Co-Chair, Chairman, President and CEO, Kennametal Inc., Latrobe

Kennametal has engineered innovative tooling and solutions for extreme wear environments for more than 70 years using complex metallurgy and materials science in tungsten carbide, high-speed steels and other materials.

www.kennametal.com

Samuel "Pat" Black, President & CEO, Erie Management Group, LLC., Erie

Erie Management Group, LLC was founded with a goal of encouraging new growth from entrepreneurs nationwide and bringing jobs back to the Erie region.

www.eriemg.com

David Barenfeld, President & CEO, Ellwood Group Inc., Ellwood City

Ellwood Group Inc. produces engineered, heavy metal sections for capital specialty equipment manufacturers in the United States and around the world.

www.elwd.com

Greg Booth, CEO, Zippo Manufacturing Company, Bradford

Zippo Manufacturing Company is the maker of the iconic Zippo lighter. The Bradford-based company was founded in 1932 and is still owned by descendants of Zippo lighter inventor George G. Blaisdell.

www.zippo.com

Heather Chandler, President, Sealstrip Corporation, Gilbertsville

Sealstrip Corporation provides flexible packagers with re-sealable and easy open packaging solutions that are essential to compete in today's market.

www.sealstrip.com

Frank Epifano, CFO, sanofi pasteur, Swiftwater

sanofi pasteur, the vaccines division of sanofi-aventis Group, is the largest company in the world devoted entirely to human vaccines.

www.sanofipasteur.us

Janis Herschkowitz, President, PRL Industries, Cornwall

PRL Inc. provides complete turnkey capabilities for high specification castings.

www.prlinc.com

Jeff Kelly, CEO, Hamill Manufacturing Company, Trafford

Hammill Manufacturing specializes in precision machining, welding, and fabrication of complex components which has established them as a well respected company in a variety of industries including defense, power generation, glass, steel, semi-conductor, aerospace, and transportation.

www.hamillmfg.com

Todd Kennedy, President & CEO, McClarin Plastics, Hanover

McClarin Plastics, Inc. is a premier plastic manufacturer of large thermoformed plastic and fiberglass reinforced plastic components providing production throughout the Midwest and East Coast.

www.mcclarinplastics.com

Leroy “Tighe” King, Chairman & CEO, Perform Group LLC, York

Perform Group, LLC is proud to be a leader in providing high quality performance apparel primarily for the global markets of dance and gymnastics. Although Perform Group’s brands can be found around the world, many of the garments are designed, manufactured and marketed in York, Pennsylvania.

www.performgroupllc.com

Daniel Langdon, President, East Penn Manufacturing Co., Inc., Lyon Station

East Penn Manufacturing makes thousands of different sizes and types of lead-acid batteries, battery accessories, and wire & cable products for virtually any application.

www.dekabatteries.com

Michael McLanahan, Chairman & CEO, McLanahan Corporation, Holidaysburg

McLanahan Corporation offers a wide range of equipment and systems to process raw and synthetic materials including crushings, washing, classifying, screening, dewatering, sorting, mixing, etc.

www.mclanahan.com

Louay Mishu, Plant Manager, Family Care, Proctor & Gamble, Mehoopany

Multi-national manufacturer of product ranges including personal care, household cleaning, laundry detergents, prescription drugs, and disposable nappies.

www.pg.com

Scott Meuser, Chairman & CEO, Pride Mobility Products Corp., Exeter

Pride Mobility Products® Corporation is the world’s leading designer and manufacturer of personal mobility products, including the iconic Jazzy® brand of power chairs, and the Quantum Rehab® division, offering the highest-performing complex rehab technology in the industry.

www.pridemobility.com

Michael Pearson, President, Union Packaging, Yeadon

Union Packaging LLC (UP), located in Yeadon, PA, is a leading paperboard manufacturer dedicated to making FDA compliant folding cartons in the Quick Service Restaurant market utilizing flexographic printing capabilities as well as high speed folding/gluing machines.

www.unionpkg.com

Jim Rutkowski Jr., Vice President, Industrial Sales & Manufacturing Inc., Erie

Industrial Sales & Mfg., Inc.(ISM), located in Erie PA, is a manufacturer and leading supplier of quality machined, fabricated and assembled components for a wide variety of industrial and other markets.

www.ismerie.com

David Simpson, President, Diamond Manufacturing, Wyoming

North America’s leading & largest perforator, since 1915 Diamond Manufacturing has been providing original equipment manufacturers (OEMs), job shops, and architectural firms with quality perforated material.

www.diamondman.com

Mike Williams, Senior Vice President, United States Steel, Pittsburgh

U. S. Steel, headquartered in Pittsburgh is the largest fully integrated steel producer in the United States. The company manufactures a wide range of value-added steel sheet and tubular products for the automotive, appliance, container, industrial machinery, construction, and oil and gas industries.

www.uss.com

Helen Yost, President, The Rowland Company, Philadelphia

Since 1732, The Rowland Company is a specialty distributor/fabricator of industrial power transmission components. Typically, the products used in these applications are brakes, clutches, couplings, universal joints, gear boxes, variable speed drives, friction material, crane electrification, and other related items.

www.rowland2.com

Ralph Pontillo, President, Manufacturer and Business Association, Erie

Founded in 1905, the Manufacturer & Business Association is a not-for-profit employers' association whose focus is to help businesses succeed. They partner with more than 4,500 businesses in Pennsylvania, New York and Ohio, providing a host of membership benefits including: HR Planning and Consulting, Legal Services/Hotline, Training/Development, Energy Management/Supply, Surveys, Employee Benefits, and Computer Training.

www.mbausa.org

David Taylor, Executive Director, Pennsylvania Manufacturer's Association (PMA), Harrisburg

PMA is the leading voice for manufacturing in the commonwealth. With nearly a century of service to the manufacturing community, PMA continues to fight for their members in the effort to build a more competitive and prosperous Pennsylvania.

www.pamanufacturers.org

Darlene Robbins, President, N.E. PA Manufacturer's and Employers Association, Pottsville

The Northeast Pennsylvania Manufacturers and Employers Association (formerly MAMP - the Manufacturers Association of Mid-Eastern Pennsylvania) is a private, non-profit, membership-based organization that currently serves more than 290 member companies in Carbon, Lackawanna, Luzerne, Northumberland, and Schuylkill Counties.

www.maeaweb.biz

Jack Pfunder, President and CEO, Manufacturer's Resource Center (MRC), Bethlehem

MRC is a non-profit affiliate of Lehigh University, founded in 1988 and is one of the Network of seven Industrial Resource Centers (IRCs) in Pennsylvania and one of over 60 centers nationwide that comprise the National Institute of Standards and Technology Manufacturing Extension Partnerships (NIST-MEP) that assist small and mid-sized manufacturers. MRC serves SMEs in a five county area (Lehigh, Northampton, Berks, Schuylkill, and Carbon) to grow and remain competitive utilizing state-of-the-art technologies and current business practices.

www.mrcpa.org

National Governor's Association (NGA) Policy Academy

In October of 2011, Pennsylvania was one of seven states selected to participate in a program designed to spur even greater innovation and entrepreneurship in advanced manufacturing. Sponsored by the National Governors Association (NGA), it brought leaders from Pennsylvania's public and private sectors to receive feedback and discuss best practices in developing and implementing successful economic development strategies for the manufacturing industry.



Participating states received guidance and technical assistance from NGA staff, experts from MEP, the State Science and Technology Institute, as well as consultants from the private sector, research organizations and academia. The strategies and policies developed by the selected states are intended to serve as ideas and best practices for all states.

The U.S. Department of Commerce NIST Manufacturing Extension Partnership Program (MEP) and the U.S. Department of Commerce Economic Development Administration (EDA) provide funding for the Academy.

NGA Policy Academy Core Team Members

Joe Houldin, CEO, DVIRC, Philadelphia

Lisa Hughes, Director of Policy, DCED, Harrisburg

Eric Kratz, Policy Specialist, Department of Labor & Industry, Harrisburg

Tom Palisin, Executive Director, Technology Investment Office, DCED, Harrisburg

John Sider, Statewide Coordinator, Ben Franklin Technology Partners, Harrisburg

Matt Zieger, President & CEO, Team Pennsylvania Foundation, Harrisburg

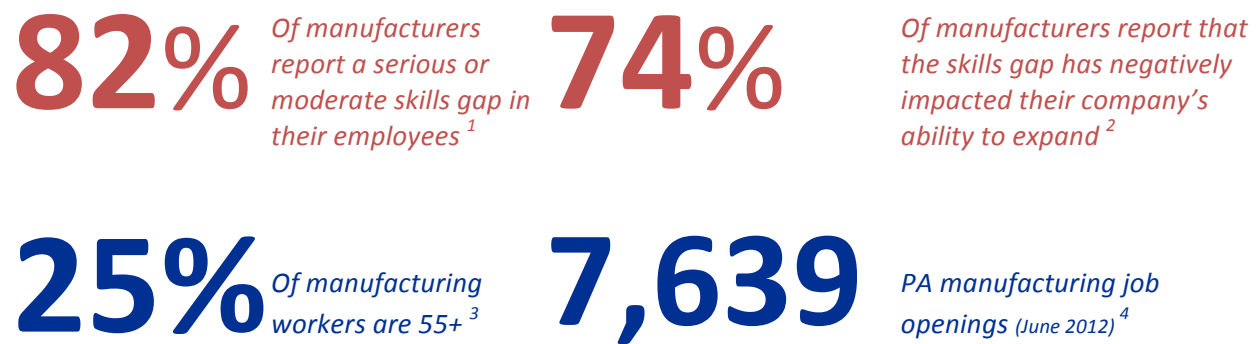
Recommendations

Talent & Workforce

Manufacturers today face global competition for market share, research, ideas, and talent. Although manufacturing employment in Pennsylvania has been on the decline for years, this past year showed a tremendous growth of 12,100 workers, bringing the commonwealth's total manufacturing workforce to 574,600. The low number of new workers entering the industry, coupled with the growth in manufacturing, has left a staggering gap of available skilled workers.

BRIDGING THE SKILLS GAP TO BUILD THE FUTURE

Sources: 1, 2: Deloitte and The Manufacturing Institute Sept 2011 Report "Boiling point? The skills gap in U.S. manufacturing"; 3. US Department of Labor; 4. PA L&I Online Job Postings



Based on detailed data analysis, a review of local, state, and national reports, and the experiences of the Council members themselves, the most pressing problem now and for the near-term is finding people with the education and skills to fill the high-quality manufacturing positions currently available. Of equal importance is addressing the need for our future-manufacturing workforce to develop the leaders of tomorrow, a long-neglected issue, which has impacted the current talent crisis.

Recommendation Highlights:

- ✓ Develop an "Adopt a School" Program led by the manufacturing community
- ✓ Industry-led standardization of skill needs and curriculum
- ✓ Better connect job seekers with job openings in manufacturing sector
- ✓ Expand and better support career and technical education in Pennsylvania
- ✓ Support proven strategies to increase workforce pipeline for manufacturers
- ✓ Create measures and support systems for educators and school districts

Detailed Summary of Talent & Workforce Recommendations:

- 1. Develop an “Adopt a School” Program led by the Manufacturing community:** *Establish a public-private partnership that will organize engaged manufacturers and school leaders to partner in support of educational pathways to manufacturing careers. Through a strategic, inclusive process these partnerships will be built upon best practices and be certified and supported by the public-private partnership to ensure high standards, drive participant success and improve engagement with community-based manufacturers.*

The following actions should be undertaken to support this recommendation:

- 1.1. Develop and implement a campaign, led by the Governor, to update the image of a career in manufacturing in Pennsylvania. Focus on dispelling the myths surrounding these careers by marketing the story of high-wage, high-tech, challenging, and secure careers.
- 1.2. Replicate proven programs within the Adopt a School Program including competitions and direct partnerships that increase training capabilities with initiatives like YES (Your Employability Skills) or BotsIQ. YES is a 120 hour, 1 credit elective high school program that is widely viewed as a best practice model among the manufacturing council members. With YES being approved under the Educational Improvement Tax Credit (EITC) program, and meeting the the PA Department of Education’s Chapter 4 Academic standards, it is already being offered in a total of 26 school districts with a cumulative enrollment of 4,133 students with 1,161 program graduates. YES curriculum was developed by the manufacturing sector, which has led to more than 500 companies offering preferred interviews to YES graduates.
- 1.3. Support career exploration and exposure to challenging, high-wage manufacturing careers through company tours, job shadowing and role models/mentors/speakers in manufacturing careers while highlighting younger workers.
- 1.4. Develop work-based learning activities including apprenticeships, internships and co-ops.
- 1.5. Connect with teachers to update and improve curricula through engagement with manufacturers. Employing strategies such as inviting teachers in the workplace can help teachers understand industry needs and opportunities.
- 1.6. Seek private sector resource commitments including funding, donation of space and equipment, employee volunteering, and utilizing company facilities for training and educational purposes.

- 2. Industry-led standardization of skill needs and curriculum:** *Manufacturers should work with the education and workforce development community in Pennsylvania to define and communicate common standards and credentials that best meet their needs. The intent would be to simplify the marketplace for both training institutions seeking to meet the needs of manufacturers and potential employees working to improve the value of their skills and employability in the manufacturing sector.*

The following actions should be undertaken to support this recommendation:

- 2.1. Evaluate and consider adoption of common standards and credentials. This evaluation should include review of the National Association of Manufacturing Skill Standard, and any other viable standards identified.
- 2.2. Advance a unified manufacturing curriculum across education and training systems driven by the manufacturing community, support partners such as the Industrial Resource Centers, Pennsylvania's Manufacturers Associations, Community Colleges and policy leaders in the Departments of Education and Labor and Industry.

- 3. Better connect job seekers with job openings in manufacturing sector:** *The commonwealth must better leverage available tools and data collection systems to create a process that accelerates the matching of the qualified labor pool with available manufacturing openings.*

The following actions should be undertaken to support this recommendation:

- 3.1. Require skills assessment for unemployment compensation recipients. This effort, in conjunction with improvements to the commonwealth's job matching system, will enable the matching of individuals' skills with current manufacturing job openings.
- 3.2. Assist employers to assess and communicate the skill needs of available jobs through the O*Net classification system. A standardization of job descriptions will improve efficiency of data-driven matching of qualified applicants with job openings.
- 3.3. To encourage a drug-free workplace, the commonwealth should consider implementing a "fast track" for applicants passing voluntary drug testing in order to receive public support for training.

- 4. Expand and better support career and technical education in Pennsylvania:** *Secondary technical education has become a critical supplier of high skill, technical talent for high wage careers in the manufacturing sector and must be supported in order to sustain the future growth of the sector.*

The following actions should be undertaken to support this recommendation:

- 4.1. Ensure funding formula is not punitive to school districts for students participating in career and technical education. For example, explore other state models such as the Kansas model of providing additional state funding for each student attending a career and technology center.
 - 4.2. Improve the vocational technical education system's approach, governance, and funding structure to reflect the needs of today's manufacturers.
 - 4.3. Support extension and expansion of the Educational Improvement Tax Credit to provide an additional source of funding for career and technical education organizations. Allocation of EITC credits should be based on filling existing skill gaps, and high-value high-cost training programs such as machinist training. These high-cost training programs are often the first to be cut during budget reductions even though they are in high demand.
 - 4.4. Improve use of data to forecast, identify and communicate job opportunities to assist both institutions and students' decision-making and planning.
 - 4.5. Encourage teachers to learn alongside manufacturers through a structure similar to the previous School to Work programs. This would allow teachers to receive continuing education credits while experiencing manufacturing careers first-hand.
- 5. Support proven strategies to increase workforce pipeline for manufacturers:** *Expand proven models to invest in developing a consistently qualified and highly skilled workforce. The council believes such a workforce is essential to retaining and expanding manufacturing operations in the state.*
- 5.1. Expand and replicate programs such as the existing **PATHWAYS** for Career Success (formerly known as the 2+2+2 career pathway model) and others that have proven delivery of a skilled, technical workforce.
- 6. Create measures and support systems for educators and districts tied to effectiveness:** *The manufacturing community understands the importance of a world-class public education system in Pennsylvania and believes transparency, standards, and fair evaluation are critical to the future of the manufacturing workforce in Pennsylvania.*

The following actions should be undertaken to support this recommendation:

- 6.1. Implement a transparent scorecard for schools that measures academic effectiveness.
- 6.2. Implement a system to evaluate and provide targeted support to educators with the ultimate goal of increasing teacher effectiveness.

Opening New Markets (International, Domestic and Emerging Energy)

Manufacturers today realize that global competition requires them to constantly innovate through developing new products and entering new markets. The pace of the global economy has led to rapid market shifts which can strand companies that are too dependent on one product or one customer. Depending on the industry and product, the best opportunity for new growth may be across the globe, across the state line, or across the river. Before they can take advantage of new opportunities, many small- and medium-sized manufacturers must overcome barriers such as a lack of capacity, internal market expertise or simple market access due to poor infrastructure or lack of technology.

\$31.2 Billion

Value of Goods Exported from Pennsylvania Manufacturers in 2010 (Source: US Department of Commerce)

Domestic energy production poses a unique multi-faceted opportunity for many Pennsylvania manufacturers. In particular, the shale gas plays have created a unique series of new market opportunities that may provide more growth potential than just a stable low-cost energy. Local sources of raw materials for plastics and petrochemical related

industries, and a growing new customer base of energy related industries provide opportunities for manufacturers from nearly all industries. Manufacturers are also the largest consumers of energy, which accounts for one of, and in some cases the, largest operating expenses. The energy used in manufacturing processes is used to produce products that fuel economic growth and job creation. Pennsylvania's natural gas reserves offer great potential, but there are several barriers for small- and medium-sized manufacturers to enter that market. Action is needed both at the public and private levels to seize new market opportunities as well as leverage the opportunities from the natural gas boom.

Recommendation Highlights:

- ✓ **Develop a Statewide Pennsylvania Energy Plan**
- ✓ **Increase use of existing state services in export & technical assistance through improved marketing and private sector engagement**
- ✓ **Invest in infrastructure improvements to ensure cost-effective market access for manufacturers**

Detailed Summary of Recommendations for Opening New Markets:

- 7. Develop a Statewide Pennsylvania Energy Plan:** *Developing and implementing a strong statewide energy plan will provide a roadmap for energy independence and economic competitiveness that is critical to growth in the manufacturing sector.*

The following actions should be undertaken to support this recommendation:

- 7.1. Include policies that are balanced and inclusive of diverse sources of energy; recognizing both a market-based approach as well as government's role in long-term planning while ensuring reliable energy for manufacturers in both rural and urban locations.
- 7.2. Promote the state's energy resources with a focus on job creation and competitiveness for Pennsylvania-based businesses. A goal should be to have Pennsylvania energy costs be the lowest and most stable in the United States.
- 7.3. In partnership with the natural gas industry, develop combined heat and power (CHP) projects to benefit manufacturers.
- 7.4. Explore legislation to create a shale gas power authority (i.e. Recharge NY) to coordinate policy and regulation.
- 7.5. Coordinate natural gas supply chain development activities and encourage partnerships with producers, associations, economic development entities, and government to increase use of Pennsylvania-based suppliers.
- 7.6. Invest in maintaining and modernizing Pennsylvania's energy infrastructure.
- 7.7. For consistency and cost-effective compliance, any state energy-related mandates should not exceed federal mandates.

- 8. Increase use of existing state services in export & technical assistance through improved marketing and private sector engagement:** *Existing high quality state programs and services that support manufacturing are often underutilized. Through improved marketing and private sector engagement the goal will be to increase utilization of those existing high quality programs.*

The following actions should be undertaken to support this recommendation:

- 8.1. Develop an online export portal to better connect companies, address export and technical concerns, and offer a hotline to make resources easily accessible.
- 8.2. Expand promotion and use of the commonwealth's existing Regional Export Network and Industrial Resource Centers to connect more small manufacturers to both domestic and international market opportunities.
- 8.3. Simplify the process for manufacturers to access public support for new market orientation and access, including both technical and financial assistance.

- 9. Invest in infrastructure improvements to ensure cost-effective market access for manufacturers:**
Manufacturers significantly rely on public infrastructure to develop and transport products. That infrastructure provides them either a competitive advantage or disadvantage. Investment in critical infrastructure improvements provides manufacturers more stability and opportunity for growth.

The following actions should be undertaken to support this recommendation:

- 9.1. Prepare Pennsylvania's infrastructure to handle the increased freight capacity expected as improvements to the Panama Canal shift global shipping routes toward East Coast ports.
- 9.2. Reduce cost of production and shipping by improving infrastructure particularly in rural Pennsylvania. Deferred maintenance of transportation infrastructure including roads, freight rail, bridges, ports, locks, and airports has led to a competitive disadvantage for manufacturing firms in many areas of the commonwealth.
- 9.3. Explore public-private partnership models to finance needed infrastructure improvements.

Making Government Work Better for Manufacturers

Manufacturing is one of the leading contributors to Pennsylvania's Gross State Product and employment, at 12.1% and 10% respectively. The average Pennsylvania manufacturing employee's wages is more than 44% higher than the average across all other nonfarm sectors of Pennsylvania's economy. Recognizing the extraordinary economic value that a thriving manufacturing sector brings to the commonwealth, the council believes the industry deserves a fair, streamlined, predictable, and supportive relationship with state government. Pennsylvania has a reputation for high business taxes and a complicated tax structure. In addition to the extremely competitive operational demands of manufacturing, a company has to invest significant time in dealing with state tax issues, regulatory and other requirements that take valuable time away from growing their businesses. For specific legislation currently introduced in the general assembly that has council support see Appendix A.

Sources: 1. U.S. Bureau of Economic Analysis, 2. Tax Foundation 2012 State Business Tax Climate Index



Recommendation Highlights:

- ✓ Use tax reform to encourage investment, innovation, and job creation
- ✓ Improve commonwealth communication and processes to maximize regulatory compliance while reducing cost burden
- ✓ Workforce Cost Competitiveness

Detailed Summary of Government Recommendations:

10. Use tax reform to encourage investment, drive innovation, and support job creation in the manufacturing sector: *Business taxes should be reduced and structured to encourage manufacturers to make investments that lead to sustained profitable growth and new job creation such as; new equipment, research and new product development, energy efficiency, innovation, and incumbent worker training. Regulations should be fair, consistent, and focused on maximizing compliance.*

Reduce undue tax burden on manufacturing sector:

- 10.1.1. Continue the Governor's Capital Stock and Franchise Tax (CSFT) phase-out schedule
- 10.1.2. Reduce Corporate Net Income (CNI) tax rate
- 10.1.3. To aid in retention of family-owned manufacturing firms across times of succession, the commonwealth should reform the Inheritance Tax to allow for family-owned manufacturing firms to transfer business assets to other family members.

Use tax policy to encourage investment and innovation in manufacturing firms:

- 10.1.4. Increase and make permanent the Research and Development (R&D) tax credit. Allow credit to cover process as well as product R&D.
- 10.1.5. Create tax-free or reduced-tax Manufacturing Reinvestment Accounts (MRAs) to encourage reinvestment and growth for small firms. Similar to an IRA, these would encourage manufacturing firms to save earned income in a pre-tax account to be used for an approved reinvestment activity such as R&D, new equipment, or training.
- 10.1.6. Uncap Net Operating Loss carryforwards, as the current structure places a comparably high tax burden on high-growth firms and cyclical manufacturers.
- 10.1.7. Adopt the single-sales factor and other policies that encourage manufacturers to invest in fixed assets and employment in Pennsylvania.
- 10.1.8. Support tax credits and other policies that encourage apprenticeship programs.
- 10.1.9. Expand educational improvement tax credit (EITC) for use in accredited technical education/community colleges.

Recommended Regulatory Relief:

- 10.1.10. State regulations should closely mirror and not exceed Federal policy. The added costs of compliance due to lack of coordination of these two standards hinder investment and growth.
- 10.1.11. Simplify and standardize permitting and regulatory processes to both maximize compliance while lessening the cost of compliance.
- 10.1.12. Increase use and marketing of pollution prevention and compliance assistance

services through DEP and their partners, which provide valuable technical assistance to many manufacturers as they seek to comply with environmental regulations.

- 10.1.13. Implement regulatory review and include sunset provisions on all new regulations to ensure periodic review and evaluation for performance.

11. Improve and streamline communication between manufacturers and regulators to improve compliance while lessening cost to comply: *The commonwealth should continue to streamline and more clearly communicate the actions required of manufacturers to best comply with state regulation. The processes and information required are often overly complex and poorly communicated. This lack of clarity too often causes an undue burden of cost to maintain maximum compliance for both the employer and the commonwealth. Manufacturers seek consistency and predictability within the current system.*

The following actions should be undertaken to support this recommendation:

- 11.1. Institute training for consultants and companies on complex regulations with the goal of increasing compliance while reducing costs for all parties.
- 11.2. Provide agency support and guidance for small manufacturers to increase regulatory compliance. See recommendation 10.1.12.
- 11.3. Develop systems that communicate permit approval timelines while completing permit decision in a timely and consistent fashion.
- 11.4. Develop online “one stop shop” that simplifies employer interactions with state government.
- 11.5. Provide an easily accessible online list of regulations relevant to businesses.
- 11.6. Provide an easily accessible electronic application and educational resource for all state business permits with the goal of maximizing compliance while reducing cost for all parties.

12. Allow for greater workforce cost competitiveness:

- 12.1. In order for Pennsylvania’s workforce to remain competitive in the manufacturing world, workers in Pennsylvania should be allowed the maximum freedom of choice regarding labor union membership and representation.

Innovation

Innovation, simply defined, is the act of doing or creating something new. This concept is the foundation of a profitable and growing manufacturing company and key to success of this industry. To remain profitable in a constantly changing marketplace, Pennsylvania manufacturers must continuously leverage and improve their unique capabilities and demonstrate their advantages over competitors. This constant change, rapid adoption of new technologies and continuous development of new or improved products is a necessary fight for survival among a world full of competition.

The next big growth opportunity for any manufacturing firm may mean undergoing a significant transition under extraordinary time and cost pressures. Retraining employees, retooling equipment, and deploying new research or new technologies, can be expensive, challenging, and time consuming.

In 2010, Georgia Tech researchers studied the difference over three years between proactive companies that embraced innovation and reactive companies that were not engaging in consistent innovation practices. Three-year findings include:

	Innovative Companies	Reactive Companies
% Showing Sales Growth	84%	4%
% Showing Profit Margin Growth	96%	13%
% Showing Employment Growth	63%	1%

Companies saw more growth from innovation through new products and processes than with low cost, quick delivery, quality, and responding to customer demands. Innovation is not just about developing the new, it is fundamental to ensure success in both new and existing processes and products within both new and existing markets.

Recommendation Highlights:

- ✓ **Develop a Pennsylvania Innovation Marketplace**
- ✓ **Improve collaboration between business, government, and trade organizations focused on business innovation and growth**

Detailed Summary of Innovation Recommendations:

13. Develop an Innovation Marketplace: *The Innovation Marketplace should be an online portal and process that drives connections between manufacturers and innovative technology and business opportunities. It would provide the tools needed to speed growth through innovation and capture the high level of resources available within Pennsylvania.*

Specifically this tool and process should:

- 13.1. Launch an online portal that facilitates access to innovation opportunities by: offering a searchable database of technology and new products available from Pennsylvania universities, research labs, government labs and private companies; allow manufacturers to publish requests for technical needs or post their new product ideas to seek investors, partners or customers; allow manufacturers to post capabilities to entrepreneurs and existing firms seeking production capacity.
- 13.2. Invest in improving practical connections between the existing research capacity of our higher education institutions and the needs of our manufacturing industries. The council recommends the Carnegie Mellon University model as a highly effective practice of commercializing research into new companies, processes, and products.
- 13.3. Develop CEO growth forums that allow for peer-to-peer mentoring and collaboration.
- 13.4. Provide connection support for partnerships between Pennsylvania companies to develop new products and new processes, business models, new materials, etc.

14. Improve collaboration between business, government, universities, and trade organizations focused on business innovation and growth: *Developing more cohesive collaboration between public and private organizations to focus on manufacturing growth through process and product innovation would improve effectiveness and use of resources. A clear delineation and communication of which partner solves what business challenge would be invaluable to Pennsylvania's manufacturers to save time and provide more accessibility to resources and expertise.*

Activities to improve collaboration include:

- 14.1. Establish a point of contact in state government that helps connect manufacturers with existing public and private resources to help solve growth challenges.
- 14.2. Invest in improving the manufacturing sector's knowledge, awareness and understanding of available external expertise and innovation programs.
- 14.3. Focus activities and resources to leverage peer-to-peer sharing with the goal of increasing innovation, productivity, and growth.
- 14.4. Focus on CEO-learning activities on how to manage a successful innovation firm.
- 14.5. Encouraging universities to focus their existing engineering and physical science research and technical capabilities on the needs of the manufacturing sector, including breaking down barriers to technology transfer between manufacturing and universities.

Access to Capital

Manufacturers need access to capital across all stages of the business lifecycle to achieve and sustain a healthy financial position. Access to capital is critical to ensure stability and flexibility to meet ever-changing market demands. Accessing capital is a complex business growth strategy for companies and requires detailed analysis to match the most appropriate type of capital to individual business needs.

Sources: MEP/NIST Small Manufacturers Capital Access Inventory and Needs Assessment, November 2011

78%

Of small manufacturers negatively affected by lack of access to capital.

45%

Of small manufacturers accessed debt capital in 2010 (most frequently accessed capital type).

Recommendation Highlights:

- ✓ Provide greater access to information, tools, and training on capital types, access, and use tailored to unique needs of manufacturers.

Detailed Summary of Recommendations:

15. Provide greater access to information, tools, and training on capital types, access, and use tailored to unique needs of manufacturers: *Improvements in access to information that provide support for companies to engage in innovation, make critical business investments, and understand the best approaches to access capital all expand the opportunity for manufacturers to grow and prosper.*

Specific actions, with special emphasis on small manufacturers, include:

- 15.1. Increase promotion and use of state programs that support manufacturers in innovation and growth including Industrial Resource Centers (innovation engineering, tech scouting tools) and Ben Franklin Technology Partners (innovation adoption and vouchers).
- 15.2. Launch educational campaigns for manufacturers on innovation strategies, processes, and tools.
- 15.3. Launch educational campaigns for credit institutions about the needs of the manufacturing sector, e.g., PNC and National Penn Banks' partnership with the Industrial Resource Centers to make referrals and exchange information to support small manufacturing lending.
- 15.4. Create a user-friendly "road map" of capital access for all levels of the business life cycle, including a portal to advertise venture funds.

- 15.5. Improve access to working capital. Explore redeploying the underwriting of loan guarantee programs. The Michigan Economic Development Corporation for underwriting of manufacturing loans is a current successful model. The Michigan programs offer several innovative tools to help increase the availability of working for manufactures: a loan guarantee program for lenders (similar to a loan loss reserve fund), a collateral support program where shortfalls exist at small manufacturers, and a loan participation program where a portion of the loan is purchased and offers more flexible terms.

Appendix A

Proposed Legislation Related to Recommendations

Regulatory Climate

The Governor's Manufacturing Advisory Council (GMAC) recommends that Pennsylvania implement a common sense approach to regulatory overreach to ensure requirements that achieve limited benefit while imposing significant cost are not implemented. As a best practice, the GMAC supports the development of legislation that encourages environmental laws, regulations and policies to be based on sound science, while supporting flexibility to meet conservation needs. Also, regulatory requirements should include a cost/benefit analysis detailing the impact it may have on manufacturing, jobs and economic viability.

The following proposed legislation relates to regulatory reform:

House Bill 1349

Amends Regulatory Review Act requiring an impact statement for any proposed regulation that may have an adverse impact on small business, providing guidelines for regulatory flexibility analysis. This Act should be amended to include all industry and employers.

House Bill 2022

The Pennsylvania Business Permitting Portal Act establishes the Pennsylvania Business Permitting Portal to provide a single online access point to aid existing and potential business owners in completing the necessary permit applications associated with establishing and operating a business in Pennsylvania. It provides for functions of the portal and requires the Department of Community and Economic Development to work with other agencies to determine whether their permits can be obtained through the portal. It establishes the Pennsylvania Business Permitting Portal Advisory Board and provides for its composition and duties.

Additionally, the GMAC suggests the General Assembly and/or Governor develop policy or legislation rewarding corporations that implement aggressive sustainability programs that decrease energy use and cut waste by incorporating pollution prevention and sustainability measures through a tax credit or incentive program. The GMAC recommends the Department of Environmental Protection create a "one stop" business assistance office to help offer guidance and advice on regulatory requirements and make the permit applications process more user-friendly and customer service oriented.

Infrastructure

The Commonwealth of Pennsylvania has a complex transportation and infrastructure system that helps manufacturers not only transport products across state and global borders, but also ensures employees get to work each day. The wear and tear to our dated infrastructure certainly has an effect on supply chain and logistics. It is important Pennsylvania's infrastructure can support the demand to get products safely to customers. With the fifth largest highway system in the United States, three ports including the second largest in-land port in the nation, and the most used lock and dam system by the Army Corps of Engineers on the Allegheny, Monongahela, and Ohio Rivers, safety and efficiency need to be a priority. Many Pennsylvania manufacturers can help solve this issue by supporting the Pennsylvania economy while providing a cost-cutting solution for the commonwealth at the same time.

The following proposed legislation relates to infrastructure:

House Bill 3

Amends Title 74 (Transportation) adding a chapter providing for public-private transportation partnerships and making a related repeal.

Workforce Development

If we create a more competitive business climate that promotes growth through attraction and retention, we must have a ready-skilled workforce that can fill the jobs that will be created. Currently in the U.S., there are 600,000 high-paying unfilled manufacturing jobs because there are not enough skilled workers to fill the positions. The GMAC believes manufacturers need to be part of the solution by communicating what they need to have in a skilled worker. A skilled and efficient workforce positions us to be competitive in the global economy. We suggest the GMAC work with the Governor and General Assembly to develop legislation that encourages a skilled ready workforce and the GMAC supports the JOBS First PA initiative, specifically, the Keystone Works program, outlined by Governor Corbett in his recent budget address.

The following proposed legislation relates to workforce development:

House Bill 1539

The Keystone Works Program Act establishes a program under the purview of the Department of Labor and Industry. The program shall permit a claimant to be matched with a participating business, which will then provide skill enhancement for up to 24 hours per week for up to six weeks. Upon completion of the six-week period, claimants must be considered for employment by the business. A business shall not be required to compensate claimants involved with the program. The bill outlines other duties of the department. The bill also provides eight weeks of training with an employer to displaced workers while continuing to receive unemployment compensation (UC), by outlining comprehensive eligibility standards, establishing guidelines, providing for the arrangement of workers compensation payments, providing for incentive payments to employers and placing a five-year moratorium on the program. This act provides for voluntary nature of the program, duty of CareerLink locations and to further detail definitions.

House Bill 2319

Amends the Tax Reform Code in educational improvement tax credit, to further provide for definitions by including "career and technical school" as part of the definition of "public school."

Senate Bill 1460

Amends Tax Reform Code adding a new article establishing industry partnership tax credits for cash contributions to industry partnerships. Provides a taxpayer may claim the tax credit against any qualified tax liability in an amount equal to 75 percent of any cash contribution to an industry partnership. Further provides the total amount of credits approved by the Department of Labor & Industry may not exceed \$7.5 million in any taxable year. No taxpayer may receive more than \$37,500 in tax credits for any taxable year and the total amount of credits resulting from contributions to certain industry partnerships shall be limited to \$375,000 per industry partnership in any taxable year. Requires the department, in consultation with the Department of Revenue, to prescribe guidelines for determining whether contributions qualify for the credits. Also provides for carryover, carryback, refund and assignment; time limitations; pass-through entity; and report to the General Assembly. In addition, the department shall not approve an industry partnership tax credit for taxable years ending after December 31, 2016.

Acknowledgements

The council would like to thank the following individuals for their contributions and support throughout the process of compiling the report and recommendations:

Bob Bengel, Business Growth Specialist, NWIRC
 Christina Beall, Executive Assistant, Team Pennsylvania Foundation
 Haley Book, Executive Assistant, Department of Environmental Protection
 Lauren Bryson, Director, PA Industrial Resource Center Network
 John Callahan, Deputy Director of Policy and Planning, Office of the Governor
 Jennifer Cleghorn, Director of Education, Team Pennsylvania Foundation
 Emily DeRocco, President, The Manufacturing Institute / Senior Vice President, National Association of Manufacturers
 Scott Dunkelberger, Director, Center for Business Financing, DCED
 Stephen Ezell, Senior Analyst, Information Technology & Innovation Foundation
 Honorable Julia Hearthway, Secretary, Department of Labor & Industry
 Patrick Henderson, Energy Executive, Office of the Governor
 Ned Hill, Dean, Levin College of Urban Affairs, Cleveland State University
 Joe Houldin, CEO, Delaware Valley Industrial Resource Center
 Lisa Hughes, Policy Director, DCED
 Ash Khare, Special Assistant to the Secretary, DCED
 Markus Kohl, Director of the Office of Program Integration, Department of Environmental Protection
 Eric Kratz, Executive Policy Specialist, Department of Labor and Industry
 Joe Lane, Vice President of Enterprise Development, Ben Franklin Technology Partners of NEPA
 John Lloyd, President & CEO, MANTEC
 James Mentzer, Director of Communications, Team Pennsylvania Foundation
 Larry Michael, Assistant Vice President, Workforce Development & Special Projects, Pennsylvania College of Technology
 Lindsay Michael, International Initiatives Manager, Team Pennsylvania Foundation
 Petra Mitchell, President & CEO, Catalyst Connection
 Honorable Glenn Moyer, Secretary, Department of Banking
 Sue Mukherjee, Director, Bureau of Workforce Information & Analysis
 Wilfred Muskens, Deputy Secretary, Office of International Business Development, DCED
 Tom Palisin, Executive Director, Technology Investment Office, DCED
 Zack Rimmele, Director of Strategy & Development, Team Pennsylvania Foundation
 Honorable Barry Schoch, Secretary, Department of Transportation
 Scott Sheely, Executive Director, Lancaster Workforce Investment Board
 John Sider, Managing Director of Statewide Initiatives, Ben Franklin Technology Partners
 Martin Simon, Program Director, Economic, Human Services & Workforce Division, National Governor's Association
 Mike Simpson, Director of System Operations, National Institute of Standards & Technology
 Matthew Stem, Assistant Superintendent of Lancaster School District
 John J. "Ski" Sygielski, President, Harrisburg Area Community College
 Stephen Tang, President, University City Science Center
 Katie Thiemann, Relationship Manager, Team Pennsylvania Foundation
 Honorable Ron Tomalis, Secretary, Department of Education
 Marty Toomajian, Senior Vice President/President, Battelle
 Honorable Mike Turzai, Majority Leader, House of Representatives
 Ryan Unger, Director of Policy & Programs, Team Pennsylvania Foundation
 Jeff Vrabel, Partner, ParenteBeard
 Erica Clayton Wright, Public Affairs Manager, Kennametal, Inc.
 Tim West, Plant Manager, Excel Corporation
 Karen Winner Sed, President & CEO, Winner International
 Gary Yakimov, Manager, Policy Initiatives, National Institute of Standards & Technology
 Matthew Zieger, President & CEO, Team Pennsylvania Foundation