

## Pennsylvania Manufacturing Advisory Council: A Survey of Manufacturers

This report summarizes what the [Pennsylvania Manufacturing Advisory Council](#) learned from focus group conversations with manufacturing leaders conducted during the winter of 2021-22 and a survey of manufacturers conducted during the spring of 2022. This engagement with manufacturers sought to identify what Pennsylvania manufacturers see as the sector's greatest challenges and opportunities.

The Pennsylvania Manufacturing Advisory Council (the Council) was created by public and private partners under the guidance of the Pennsylvania Department of Community and Economic Development (DCED). The Council seeks to organize the voice of manufacturing, elevate the issues and opportunities facing Pennsylvania's manufacturers, and make actionable policy recommendations. The Council's primary objective for 2021-2022 is to develop a Playbook for Manufacturing Competitiveness that provides state leaders with focused recommendations on how to build a better Pennsylvania by improving its manufacturing economy. The target audience for the playbook is the next Governor of Pennsylvania, his cabinet members, and General Assembly members seeking to guide the state's economic future. The Playbook will be released in Summer 2022 and will be accessible at: [www.pamanufacturingcouncil.com/playbook](http://www.pamanufacturingcouncil.com/playbook).

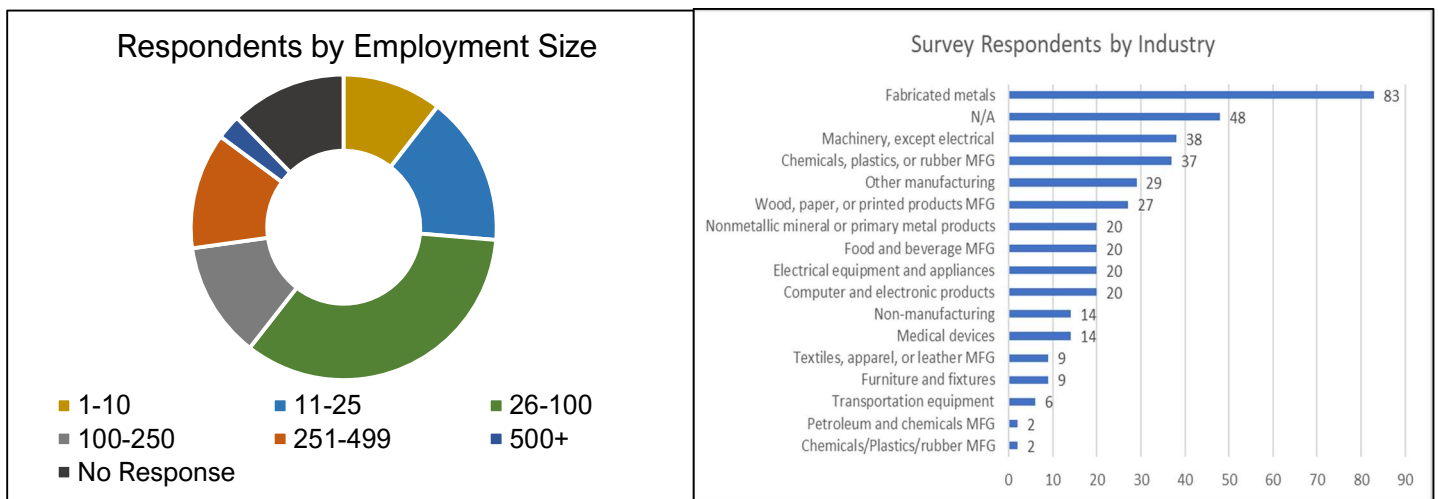
The findings from the focus groups and survey serve as the foundation for a Playbook for Manufacturing Competitiveness. To gather industry input, the Council hosted focus groups with the help of 13 different host partners and developed a survey for deployment through two key economic development partners – the statewide Industrial Resource Center Network (the IRCs) and the statewide Ben Franklin Technology Partners Network (the BFTPs). More than 150 manufacturers, representing the diversity of the Commonwealth's regions and manufacturing subsectors participated in the focus group sessions between December 2021 and February 2022. These focus groups provided initial insights on the most pressing issues for manufacturers and helped to shape public policy priorities. To better understand those priorities, the Council developed a survey aimed at gaining insights about which strategies might help enhance manufacturing competitiveness.

In April 2022, the IRCs and BFTPs led an outreach effort that garnered responses from nearly 400 manufacturers across the Commonwealth to gather insights about the challenges and opportunities surfaced by the focus group discussions. The survey

explored four key topic areas raised as critical to the future of manufacturing: supply chain, workforce, technology adoption, and business environment. Each topic area sought to highlight specific challenges to manufacturing, as well as opportunities to improve the sector and support its resurgence as a prominent driver of growth and innovation in Pennsylvania. The survey questionnaire is available from the Pennsylvania Manufacturing Advisory Council website.

### Survey Respondents

In total, 398 manufacturers responded to the survey, representing more than 20 subsectors across 51 counties. Respondent attributes, including employment size, subsector, and geography, appear in the charts below:



### Top Takeaways from Manufacturer Focus Groups and Survey

Finding, hiring, and retaining employees emerged as the most common issue raised by focus group participants. Survey respondents reinforced the prominence of that concern. A full 90% of manufacturers surveyed indicated they were currently hiring workers.

Many manufacturers in Pennsylvania are embracing advanced manufacturing to compete and are ready to invest in the factory of the future. About 7 companies of every 8 responding (87%) reported that they are currently investing in or plan to invest in automation. The greatest obstacle to adopting technology and innovation is the complexity of integrating new technologies into current business practices (53%), followed by limited available capital (45%) and worker skills gaps (44%).

When asked more broadly about why they want to leverage technology and innovation in their enterprise, companies responded that they view technology as their best

opportunity to increase workforce productivity (55%), automate repetitive or unsafe tasks (44%), lower overall production costs (34%), and improve systems management (31%). It is clear from these responses that automation is being used to address the worker shortage, but it is focused on enhancing—not eliminating—jobs by making them safer, more interesting, and as a result, more desirable.

Manufacturers want stronger connections with other manufacturers in the same region. A sizable share of manufacturers was willing to consider purchasing from in-state suppliers, but most respondents (59%) reported they would do so only if costs were the same or less.

Pennsylvania has an extensive set of incentives, some of which may be useful to ameliorate the challenges manufacturers are currently facing. However, only one in three companies see incentives as helpful while the remainder see the state's economic development incentives as too complicated to be useful or simply not sufficiently relevant to be worth using. Furthermore, manufacturers noted that, in general, regulatory restrictions are not onerous, but a vocal minority (about 25 percent of firms) see local land use permitting and environmental regulations defying the logic of business, and these are often the firms that are seeking to expand or grow.

### Supply Chain

Supply chain disruptions are a high-profile challenge, causing delays in available goods and unpredictable input price fluctuations (primarily increases), much of which cannot be passed on to end customers. In response, manufacturers are seeking out in-state suppliers – most commonly relying on referrals from colleagues, intelligence gathered on competitors or industry word-of-mouth to find potential supply chain partners. Other methods frequently used to identify possible suppliers are general internet searches, common knowledge, or general reputation within the industry. Survey respondents expressed that there are several measures that the Commonwealth could take to help them more readily identify potential in-state suppliers – including providing more information about in-state manufacturers, facilitating supplier-buyer connections through networking events, and assisting companies with pre-qualifying or performing due diligence on prospective Pennsylvania-based suppliers.

However, while manufacturers were, in general, quick to say in focus groups that they are eager to “buy Pennsylvania,” the survey responses did not fully align with this sentiment. While 25% of survey respondents indicated that they would increase purchases from in-state suppliers even if the supplier charged more than their current out-of-state provider, 59% suggested that they would buy in-state only if the costs are the same or less than they are currently paying. Furthermore, another 16% of

respondents suggested that they buy from the lowest-cost provider who can meet their quality needs regardless of where the supplier is located.

As a final indicator that many manufacturers may not be as eager to source their inputs within Pennsylvania as some might hope, “financial incentives” was the far-and-away most popular response among a choice of options various actions or initiatives that would help them make in-state purchasing decisions. This focus on the costs are highlighted by the fact that 65% of respondents indicated that financial incentives to purchase from in-state suppliers would be “very helpful” in their decision to source domestically. Another 29% said those incentives would be “somewhat helpful.”

### Workforce

Manufacturers across the state are in the middle of a talent crisis resulting from long-term demographic changes and the limited success of long-term talent planning. Nearly all respondents (90%) need workers immediately, and many frequently say that they are having difficulty finding qualified talent.

In response to the immediate and urgent need for workers, manufacturers indicate they are more willing to employ workers with foundational skills and provide on-the-job training. When asked what level of training best meets their new-hire needs, 62% of respondents indicated their most immediate hiring need required short-term “boot camp” style general workforce readiness programs. Another 15% indicated that they are currently seeking workers that have certifications requiring 6-12 months of advanced training. Only 11% of respondents indicated that their most immediate hiring need required certification, education, or formal training more than 12 months (including staff with bachelors’ degrees).

To address on-the-job training issues and new hire training needs, the great majority of respondents (75%) are using in-house training experts or experienced workers as their most common resource to meet their training needs. About 8% indicated that their most common training resource was an external trainer (such as local community college, local business or economic development group, private commercial trainer, or workforce development board).

With the growing labor shortage and changing workforce demographics, manufacturers are increasingly recognizing the need to expand their talent pool by proactively reaching out to traditionally underserved demographics and embracing diverse and inclusive hiring- and retention-focused human resource practices. For example, 61% of respondents reported increasing their efforts to hire or retain women, and 51% increased their efforts to hire or retain people of color (i.e., those who are non-white or non-English speaking).

When asked which two possible government efforts would have the most dramatic positive effect on their ability to attract and retain workers, about half (51%) of respondents suggested making unemployment benefits less attractive. About 42% of respondents recommended first-year incentives to supplement pay for new hires. One-third (34%) of respondents said a statewide effort to improve manufacturing's image would have a meaningful impact on their ability to attract workers and the same percentage suggested providing unique benefits for manufacturing workers – such as lower taxes – would have been useful. Nearly one-quarter (23%) of employer respondents suggested that providing boot-camp or accelerated customized training for unemployment individuals would have a dramatic effect on their ability to attract and retain workers.

Frequently, business leaders talked about the need for a campaign to improve the image of manufacturing as a career option for young adults that offers a family sustaining wages and an interesting career path. When asked who should coordinate such a campaign, respondents overwhelmingly (74%) asserted that the campaign should be led by the private sector – either by small groups of manufacturers or a statewide manufacturers' association. Only 16% suggested that the government lead the charge.

### Technology Adoption

Most manufacturers recognize that technology and innovation are invaluable for improving operating efficiency and facilitating company growth. Across survey respondents, 87% are investing in or plan to invest in automation. When asked to explain their reasons for do so, most suggested that the investment was being driven by the need to address the talent and workforce shortage (17%), improve product quality or value (16%), automate highly-repetitive tasks (addressing an important aspect of the workforce challenge) (14%), meet growing product demand (13%) and reduce production costs (12%).

When asked why they are considering advanced manufacturing technologies more broadly, beyond just automation (to include other “Industry 4.0” technologies), manufacturers reported seeing opportunities to increase productivity (55%), automate repetitive and potentially unsafe tasks (44%), lower operating costs (34%), improve systems management (31%) and develop new products (22%).

Unfortunately, manufacturers face significant challenges in implementing new technologies. When asked to identify their barriers for technology implementation and integration, the top obstacle was the complexity of integrating new technologies into current business practices (53%), followed by limited available capital (45%) and worker skills gaps (44%). Of the worker skills gap, the most significant is operators, where

nearly 30 percent of companies identified the lack of skills among operators as an obstacle to adopting technology, compared to management (15%), maintenance (13%), or engineers (6%).

### Business Environment

A welcoming business environment can attract global investment and foster growth in businesses of all sizes. Encouragingly, most companies (59%) reported that Pennsylvania's regulatory environment was either neutral or did not hinder growth at all. However, a notable subset (25%) suggested that regulations were a slight hindrance. Nearly 13% stated that regulatory constraints were a significant hinderance to their growth.

Seventeen percent (17%) of respondents identified specific regulatory issues they felt negatively affected their growth. Among this group, the most common issues cited were permitting and permit-related regulations, environmental restrictions, and taxes. The topic of "slow government response" came up frequently in focus group discussions and was also cited by respondents with issue in their surveys.

Pennsylvania has many incentive programs to assist manufacturers across the business life cycle – from brand awareness and attraction to Pennsylvania through initial launch, expansion, and modernization. Company feedback regarding the efficiency, effectiveness, and value of those incentives was a "mixed bag," with 31% of respondents reporting a pleasant, helpful experience with Pennsylvania's incentives while 40% indicated that their pursuit of incentives was time-consuming, inefficient, and led to a dead end. Many companies (22%) were not aware of any incentives relating to their business, even though focus group conveners and survey hosts knew of many they could pursue for them. The word "confusing" emerged frequently throughout focus groups and in free-form survey comments when incentives were mentioned.

When asked a single, salient closing question about the two greatest uncertainties going forward, manufacturers consistently referenced the issue of attracting qualified workers to meet production requirements above all other topics. Two-thirds (66%) of all respondents to the survey worried about finding workers – a frequency nearly double that of the next concern. Slightly more than one-third (37%) identified increased input costs due to inflation. Next, rising health care costs caught the attention of 24% of respondents while supply chain uncertainty was noted by 18% of respondents and access to capital needed for growth was identified by 10% of responding manufacturers. All other issues, including uncertainty about COVID-19 resurgence, received fewer than 10% of the responses.