NATIONAL STRATEGY FOR ADVANCED MANUFACTURING

Executive Summary

Manufacturing is an engine of America's economic strength and national security. It plays a vital role in almost every sector of the United States economy, from aerospace to biopharmaceuticals and beyond. Advances in manufacturing enable the economy to continuously grow as new technologies and innovations increase productivity, enable next-generation products, support our capability to address the climate crisis, and create new, high-quality, and higher-paying jobs.

The United States remains a leader in advanced technologies; however, production and employment in several high-technology manufacturing industries have fallen sharply in the 21st century. To address global competition, the Biden-Harris Administration has taken steps to revitalize the manufacturing sector, increase the resilience of U.S. supply chains and national security, invest in R&D, and train Americans for jobs of the future.

This Strategy presents **a vision for United States leadership in Advanced Manufacturing** that will grow the economy, create jobs, enhance environmental sustainability, address climate change, strengthen supply chains, ensure national security, and improve healthcare.

Three interrelated goals are set to achieve the stated vision:

(1) Develop and implement advanced manufacturing technologies

(2) Grow the advanced manufacturing workforce

(3) Build resilience into manufacturing supply chains and ecosystems

To achieve these goals, 11 strategic objectives and 37 technical and program recommendations are identified for the next four years.

This Congressionally-mandated strategy seeks to improve U.S. Government coordination and provide long-term guidance for Federal programs and activities in support of U.S. manufacturing competitiveness, including advanced manufacturing research and development. Public input from over 700 individuals and organizations from across the country informed the strategy.

National Goals	Objectives	National Priorities
Advanced Manufacturing Technologies	Enable Clean and Sustainable Manufacturing to Support Decarbonization	Decarbonization of Manufacturing Processes
		Clean Energy Manufacturing Technologies
		Sustainable Manufacturing and Recycling
	Accelerate Manufacturing for Microelectronics and Semiconductors	Nanomanufacturing of Semiconductors and Electronics
		Semiconductor Materials, Design, and Fabrication
		Semiconductor Packaging and Heterogeneous Design
	Implement Advanced Manufacturing in Support of the Bioeconomy	Biomanufacturing
		Agriculture, Forest, and Food Processing
		Biomass Processing and Conversion
		Pharmaceuticals and Healthcare Products
	Develop Innovative Materials and Processing Technologies	High-Performance Materials Design and Processing
		Additive Manufacturing
		Critical Materials
		In-Space Manufacturing
	Lead the Future of Smart Manufacturing	Digital Manufacturing
		Artificial Intelligence in Manufacturing
		Human-Centered Technology Adoption
		Cybersecurity in Manufacturing
Advanced Manufacturing Workforce	Expand and Diversify the Advanced Manufacturing Talent Pool	Promote Awareness of Advanced Manufacturing Careers
		Engage Underrepresented Communities
		Address Social and Structural Barriers for Underserved Groups
	Develop, Scale, and Promote Advanced Manufacturing Education and Training	Incorporate Advanced Manufacturing into Foundational STEM Education
		Modernize Career Technical Education for Advanced Manufacturing
		Expand and Disseminate New Learning Technologies and Practices
	Strengthen Connections Between Employers and Educational Organizations	Expand Work-Based Learning and Apprenticeships
		Promote Industry-Recognized Credentials and Certifications
Manufacturing Supply Chains and Ecosystems	Enhance Supply Chain Interconnections	Foster Collaboration within Supply Chains
		Advance Innovation for Digital Transformation of Supply Chains
	Expand Efforts to Reduce Manufacturing Supply Chain Vulnerabilities	Trace Information and Products Along Supply Chains
		Increase Visibility into Supply Chains
		Improve Supply Chain Risk Management
		Stimulate Supply Chain Agility
	Strengthen and Revitalize Advanced Manufacturing Ecosystems	Promote New Business Formation and Growth
		Support Small and Medium-sized Manufacturers
		Assist Technology Transition
		Build and Strengthen Regional Manufacturing Networks
		Improve Public Private Partnerships

SUBCOMMITTEE ON ADVANCED MANUFACTURING
COMMITTEE ON TECHNOLOGY of the
NATIONAL SCIENCE AND TECHNOLOGY COUNCIL

This is a summary of the U.S. National Strategy for Advanced Manufacturing, released by the White House on October 7, 2022. The full report can be downloaded from the link or the QR code.

https://www.whitehouse.gov/wp-content/uploads/2022/10/National-Strategy-for-Advanced-Manufacturing-10072022.pdf