December 15, 2025

The Honorable Howard Lutnick
Secretary of Commerce
U.S. Department of Commerce
1401 Constitution Ave NW
Washington, D.C. 20230

Re: Strategic Policy Recommendations to Secure U.S. Leadership in Next-Generation Industrial & Resource Technologies

ETTAC Recommendation 2025-6

Dear Mr. Secretary,

The Environmental Technologies Trade Advisory Committee (ETTAC) is a federally established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect exports of environmental technology, goods and services. This includes small to large businesses, trade associations and thought leaders. In this capacity, the ETTAC appreciates the opportunity to provide these comments and recommendations to help achieve policy goals that lead to more competitive U.S. environmental technology, goods and services providers and create opportunities for their success in international markets that contribute to better balanced trade.

The United States' export competitiveness flows from its technological leadership and the strength of its innovation. As such, competing in critical new and emerging technology areas will require a coherent strategy that ties domestic innovation and manufacturing capacity building to market creation and development abroad, through Commerce and interagency coordination. We strongly support the Department's focus on restoring U.S. manufacturing competitiveness, advancing strategic sectors, reducing structural trade deficits, and strengthening national security. The Administration's recent actions-including reciprocal trade negotiations, tariff enforcement, and reassessment of federal incentives-signal an assertive industrial posture aligned with the priorities outlined here.

Today, the U.S. stands at another decisive moment. Multiple breakthrough technologies are emerging that can simultaneously solve domestic infrastructure challenges, secure supply chain resilience, and position U.S. firms for export dominance. These include water systems that protect industrial productivity, PFAS and emerging contaminant destruction, domestic alternatives to critical mineral imports, advanced battery chemistries, and waste-to-value platforms that unlock new revenue streams. These developments warrant a national strategy that moves beyond compliance to accelerated innovation, deployment, and export positioning.

The Strategic Opportunity and the Risk of Delay

The U.S. faces a convergence of challenges that demand faster commercialization pathways if U.S. environmental technology providers are to compete globally:

- Environmental and industrial contaminants, including PFAS, threaten public health, industrial water reliability, and long-term infrastructure resilience.
- Critical mineral supply chains —including tungsten, lithium, cobalt, nickel, and rare earth elements—remain dominated by foreign actors, exposing U.S. industries to volatility and geopolitical leverage.[1]
- Water scarcity and quality issues constrain industrial growth, community resilience, and resource availability.
- Underutilized waste-to-value opportunities limit domestic energy production, resource recovery, and manufacturing competitiveness.
- Meeting air quality, emissions control and odor reduction regulations and requirements as global power generation demand accelerates

Meanwhile, global competitors —including China, the European Union, and Japan—are moving rapidly and decisively. Their large-scale industrial investments, procurement programs, and export-linked technology strategies (summarized in Appendix A) represent a coordinated race for leadership in sectors where U.S. companies have strong technical advantages but lack equivalent deployment support.

If the U.S. does not match this pace, we risk losing markets where we presently hold technological leadership-along with the associated jobs, trade surpluses, and national security benefits.

Representative Technology Areas of Strategic Importance

The following sectors represent the foundation of next-generation industrial competitiveness and offer immediate opportunities for U.S. leadership if supported through targeted policy actions.

PFAS Remediation and Destruction
U.S. innovators have developed advanced capture and destruction solutions-including selective extraction, mechanochemical and ultrasound systems, plasma reactors, hydrothermal and supercritical water oxidation, and next-generation electrochemical processes. These technologies can permanently eliminate PFAS and other persistent contaminants but lack coordinated validation, procurement pathways, and early-deployment financing. These are high-value export opportunities directly aligned with the Administration's emphasis on trade competitiveness and reciprocal market access.

Advanced Battery Energy Storage
Domestic progress in sodium, advanced lithium, and alternative chemistries offer a pathway to high-performance storage without reliance on foreign-controlled mineral supply chains. The Department's strategic tariff measures have helped level the playing field; coupling trade enforcement with proactive domestic deployment and manufacturing incentives will secure long-term U.S. competitiveness.

[1] ETTAC Recommendations on Bolstering Critical Minerals

Waste-to-Value and Industrial Resource Recovery
Leading U.S. companies are demonstrating pathways to recover metals from industrial scrap, electronics, and wastewater, generate fuels and heat from residuals, and use circular principles to convert "waste" into economic assets. These systems reduce landfill burden, enhance energy resilience, and build new export markets for U.S. firms.

Air Quality and Emissions Control
The United States has been a leader in developing and implementing clean air technologies driven by the 1990 Clean Air Act to control pollutants to reduce acid rain and hazardous air pollutants and protect the ozone layer. Promoting the U.S. technology leverage in the air quality and emissions control manufacturing sector opens up global markets for exporting U.S. products and technology, lowers the risk of a trade disadvantage from foreign competition and directly creates a new, high-value domestic industry for job growth.

Policy Recommendations to Accelerate U.S. Leadership

Strengthening Domestic Innovation System to Support Export Competitiveness

- Federal Procurement as an Innovation Driver
    - Establish a "First Deployment" federal procurement program prioritizing emerging U.S.-developed environmental and industrial technologies.
    - Integrate qualifying technologies into GSA schedules to ensure predictable early-market demand.
- Streamline Technology Validation and Certification
    - Create or expand existing programs to enable a cross-agency industrial technology validation program to standardize performance testing and readiness-to-proceed validation in coordination with EPA, DOE, DoD, and other agencies.
    - Allow acceptance of qualified third-party testing data to accelerate domestic adoption and global export acceptance.
- Pilot-to-Deployment Financing
    - Expand Economic Development Administration and Commerce programs to co-fund demonstration sites in PFAS destruction, advanced batteries, waste-to-value, and water technologies.
    - Provide targeted cost-share support for first commercial deployments in strategic sectors most susceptible to foreign competition.
- Private Capital Mobilization and Foreign Direct Investment
    - Create a Strategic Industrial Technology FDI Initiative to attract global manufacturers and technology partners to U.S. sites.
    - Align with SelectUSA to target high-growth areas such as sodium-ion batteries, critical-mineral alternatives, and advanced waste-to-value manufacturing facilities.
- Regulatory Alignment to Accelerate Innovation
    - Harmonize performance standards with current technological capabilities, allowing standards to tighten as technologies advance.
    - Shorten permitting timelines for verified industrial technologies.
    - Foster knowledge-sharing among permitting agencies to streamline permitting.

Link Innovation Capacity to Trade and Export Support

- Trade and Export Enablement
    - Strengthen U.S. participation in multilateral bank procurements and global infrastructure projects.
    - Integrate U.S. technology showcases into trade missions and commercial diplomacy initiatives.

- Regulatory Assistance and Harmonization to Ease Export
    - Negotiate Mutual Recognition Agreements for industrial-tech validation and knowledge sharing with key trading partners.
    - Harmonize federal and state performance standards with current technological capabilities, allowing standards to tighten as technologies advance.
    - Empower the Commercial Law Development Program to support regulatory development and create new export market opportunities for advanced environmental technologies.

- Strategic Industry Engagement
    - Enhance interagency coordination to support resource recovery, aerospace, semiconductors, water systems, and advanced manufacturing.
    - Align export, manufacturing, and industrial-investment strategies directly with industry-defined priorities.
    - Prioritize action to increase the growth and competitiveness of the U.S. environmental technologies manufacturing sector e.g. emissions control, air quality, and odor reduction equipment and systems.

Conclusion: Positioning the U.S. to Lead

Transitioning from a compliance-driven to an enablement-driven innovation strategy is essential to securing U.S. leadership in the next generation of industrial and environmental technologies. The payoff is clear: high-value manufacturing jobs, reduced supply chain vulnerabilities, stronger trade performance, and durable national security advantages.

With timely action, paired with the Administration's assertive trade measures, the Department of Commerce can position the United States to lead the development, deployment, and global export of technologies that will define economic strength and national resilience for decades.

We appreciate your leadership and stand ready to support this effort.

Sincerely,

Clare Schulzki

Clare Schulzki
ETTAC Chair

cc: DOE Secretary Chris Wright
EPA Administrator Lee Zeldin

Appendix A: International Industrial Technology Strategies - Policy Briefing

It has been reported that global competitors are pursuing large-scale industrial strategies combining public investment, procurement, and regulatory support to accelerate leadership in advanced manufacturing and environmental technologies:

- China controls more than 70% of global clean-technology manufacturing investment, leads in battery production including sodium-ion, and dominates rare-earth supply chains. Policies supporting “new quality productive forces” emphasize high-value manufacturing and rapid commercialization.
- European Union is deploying the €40B Innovation Fund (2020–2030) to scale first-of-a-kind industrial demonstrations. More than €12B has already been awarded across 210 projects focused on energy, materials, industrial decarbonization, and advanced manufacturing.
- Japan has launched the ¥20T (≈$130B) Green Transformation (GX) initiative to accelerate commercialization of advanced energy, water, and waste technologies. NEDO programs and Tokyo Metropolitan Government subsidies further support domestic deployment and foreign investment.
- Other nations are expanding subsidies, public procurement programs, export incentives, and accelerated permitting to advance next-generation industrial manufacturing and resource recovery.

Collectively, these strategic efforts underscore a rapidly intensifying global race in which industrial policy-not market forces alone-determines long-term competitiveness. Matching this pace is essential for the United States to secure its position as a net exporter of advanced environmental and industrial technologies.