



Council on Competitiveness Bioeconomy Initiative

Working Session 2 Meeting Summary

Win the Market — Demand and Global Competitive Advantage

Virtual Working Session | Thursday, September 24, 2026

EMBARGOED DRAFT

This is a working draft and has not yet been reviewed or vetted by participants or speakers. It is intended to capture the substance of the discussion as accurately as possible, but may contain errors or may not fully reflect the intent or context of individual comments. Please do not circulate or cite this document.

TABLE OF CONTENTS

OPENING REMARKS.....	2
The Hon. Deborah L. Wince-Smith, President and CEO, Council on Competitiveness	2
THREE PERSPECTIVES ON WINNING THE MARKET	3
Ms. Veronica Breckenridge, Managing Partner, First Bight Ventures	3
Mr. Mark Warner, Founder, Warner Industrial Advisors; Consultant, Liberation Labs	4
Dr. Mehmood Khan, CEO, Hevolution Foundation; Chair Emeritus, Council on Competitiveness	4
WHAT THE GROUP IDENTIFIED.....	6
1. Bring the entire value chain together earlier.....	6
2. Establish clear national priorities for products and supply chains	6
3. Make government a sophisticated first customer, not a perpetual customer	7
4. Reform federal procurement to open markets to new products	7
5. Reconnect science and technology to the public narrative.....	7
6. Develop stronger demand signals through procurement, policy, and market mechanisms	8
7. Make national laboratories more accessible to industry and startups.....	8
8. Connect universities, national laboratories, and industry more effectively.....	8
9. Compete for talent, research capacity, and scientific leadership	9
10. Build international partnerships while strengthening domestic capacity	9
11. Address regulatory structures that can prevent demand from developing.....	10
POTENTIAL AREAS FOR FURTHER DEVELOPMENT	10
WHAT'S NEXT	12

The Council on Competitiveness convened the second of six working sessions for its Bioeconomy Initiative on Thursday, September 24, bringing together leaders from industry and investment, universities and national laboratories, and regional innovation ecosystems and organizations focused on biotechnology and biomanufacturing. Building on the first session's focus on accelerating commercialization and scale-up, the second discussion turned to the demand side of the equation: how the United States can create durable market demand for bio-based products, translate technological capability into commercially valuable products, and compete with global competitors for investment, talent, manufacturing capacity, and market share.

OPENING REMARKS

[The Hon. Deborah L. Wince-Smith, President and CEO, Council on Competitiveness](#)

The Hon. Deborah L. Wince-Smith, President and CEO of the Council on Competitiveness, opened the second working session by introducing the importance of expanding demand and expanding markets for bio-based products.

She highlighted the interconnected relationship among demand, capital, and cost: uncertain demand can discourage investment, while insufficient investment limits domestic capacity and scale, keeping costs higher. Conversely, credible demand can unlock investment, create capacity, improve economics, and open larger markets.

Ms. Wince-Smith also distinguished between creating demand and creating a market. Government procurement, commercial commitments, and other demand-side tools can help reduce early investment risk, but the ultimate objective, she said, is for U.S. bio-based products to compete and grow on their own merits in domestic and global markets.

This economic competitiveness requires identifying where bio-based products can deliver genuine customer value and understanding the barriers that can prevent customers from switching from incumbent products, including quality, reliability, specifications, qualification requirements, and supply-chain risk. Ms. Wince-Smith encouraged participants to focus on where the strongest market opportunities lie, what would drive major customers to switch, which demand signals could change investment decisions, and what policy or market barriers are preventing commercially viable products from scaling.

THREE PERSPECTIVES ON WINNING THE MARKET

Ms. Veronica Breckenridge, Managing Partner, First Bight Ventures

Ms. Veronica Breckenridge identified three major opportunities for building demand and commercial momentum in the bioeconomy.

First, she argued that the industrial biotechnology community needs to move beyond treating biology and chemistry as separate disciplines. Industrial companies ultimately need to deliver products that meet customer needs, regardless of whether those products are produced through biological conversion, chemical conversion, fermentation, or a combination of approaches. She suggested that the bioeconomy should therefore be understood less as a distinct category of "bio" products and more as a new way of producing chemicals, materials, nutrients, and other products with improved performance or economics.

This convergence has implications for both technology development and market strategy. Companies should focus on the value delivered to customers rather than on the underlying production technology.

Second, Ms. Breckenridge identified growing consumer interest in health, wellness, nutrition, and quality of life as a potential demand-side tailwind. Rather than relying primarily on sustainability as the reason consumers should adopt bio-based products, she recommended connecting bio-based products to concrete consumer benefits and emerging needs. Nutraceuticals, nutritional ingredients, and other products that address health and wellness trends may provide opportunities where consumers have a clear reason to adopt a new product.

The broader point was that industry needs to make the value proposition personal and understandable. Consumers may not care whether a product was produced biologically; they care if it works better.

The third opportunity is the growing national focus on supply-chain resilience and the defense industrial base. Semiconductors, critical minerals, artificial intelligence, data centers, and other strategic industries all depend on chemicals and materials. Where those inputs are vulnerable to foreign supply disruptions, domestic production of alternative sources could create both economic and national-security value.

Ms. Breckenridge suggested that government demand, including potential offtake agreements, could help de-risk first-of-a-kind production facilities, arguing that once a first commercial facility demonstrates viable economics and demand, private capital may be more willing to finance subsequent facilities. Public capital does not need to finance the entire industry. Rather, it can target the highest-risk stage of commercialization to unlock private capital.

Mr. Mark Warner, Founder, Warner Industrial Advisors; Consultant, Liberation Labs

With his opening remarks, Mr. Mark Warner grounded the discussion in a specific example of how market demand, product functionality, and commercial economics can align. Drawing on his experience with Liberation Bioindustries, which he co-founded and continues to advise, Mr. Warner highlighted dairy-type proteins, particularly whey, as a case where technological readiness intersects with a clear customer need. Conventional whey prices have risen substantially, creating an opportunity for alternative production pathways. Precision-fermented whey could compete not simply because it is bio-based, but because it can offer functionality that conventional whey cannot. He pointed to clear, protein-containing beverages as one example: precision-fermented whey can remain clear when mixed into water, while conventional whey can clump.

The broader lesson, Mr. Warner argued, is that market development starts with understanding what customers need and what they are willing to buy. Companies should lead with tangible value, whether that is product performance, functionality, convenience, price, or another meaningful advantage. Sustainability, often championed as a benefit of bio-based products, may ultimately reinforce that value proposition, he noted, but it is not the primary reason customers buy.

The key takeaway is the bioeconomy must identify applications where biological production creates a genuine competitive advantage, rather than relying on policy support or sustainability claims to compensate for weak product economics.

Dr. Mehmood Khan, CEO, Hevolution Foundation; Chair Emeritus, Council on Competitiveness

Dr. Mehmood Khan broadened the discussion from individual products and consumers to the global competitive environment. He argued that biotechnology, biosciences, and life sciences are already areas of substantial global demand and investment. His focus was less on developing the market and more on whether the United States will retain sufficient talent, capital, manufacturing capability, and institutional capacity to capture that demand.

He pointed to increasing international competition for scientific talent and investment. He described examples of researchers and institutions moving or expanding outside the United States because of the scale of support available elsewhere. The concern extends beyond graduate students and early-career researchers to highly accomplished scientists and research leaders. Nobel Prize-winning chemist Omar Yaghi, for example, left the University of California, Berkeley, in July 2026 to lead a new artificial intelligence research institute at Tsinghua University in Beijing, China.

Dr. Khan also noted that the United States is competing for increasingly mobile pools of global capital. Sovereign wealth funds, pension funds, and other large pools of capital are becoming

more active participants in technology and industrial investment. Countries are increasingly seeking to deploy these resources directly into strategic industries and manufacturing capacity.

This creates a competitive challenge for the United States: companies that rely on foreign capital may also face pressure to locate production, intellectual property, and future growth in the jurisdictions supplying that capital.

Mr. Warner reinforced this concern, noting that a substantial majority of Liberation Bioindustries' funding had come from outside the United States. The resulting investment relationships can create incentives for companies to build outside the United States even when their underlying technology and business are American.

Dr. Khan also supported what Ms. Breckenridge and Mr. Warner had previously noted, agreeing that private capital alone is unlikely to finance every stage of the transition from scientific discovery to industrial production. Historically, major U.S. industrial capabilities have developed through public-private partnerships in which government helped de-risk infrastructure, technology, or workforce development while private companies focused on commercial execution.

One potential approach, Dr. Khan suggested, is to separate the capital costs of shared or strategic infrastructure from the individual company's operating economics. If public or blended capital can absorb some of the infrastructure risk, the commercial economics of the remaining business may become more attractive to private investors.

Dr. Khan also argued that the United States needs to connect its strength in artificial intelligence more directly to scientific and industrial challenges. AI can serve as an enabling tool for solving chemistry, biology, environmental, manufacturing, and other complex problems. The opportunity is to create a more coherent framework for applying these capabilities to specific industrial and national challenges rather than treating AI primarily as a standalone technology sector.

Finally, Dr. Khan noted the importance of international partnerships. The United States, Europe, the United Kingdom, Australia, and other partners possess complementary capabilities in science, capital, and markets. As other countries increasingly organize themselves into coalitions, the United States may need to consider how to strengthen its own partnerships and ecosystems.

WHAT THE GROUP IDENTIFIED

The discussion that followed the opening perspectives reinforced a central theme: demand depends on whether the United States can develop products that deliver value, create credible early markets, finance first-of-a-kind production, connect the relevant players across the value chain, and provide the institutional infrastructure needed to move products into the market.

Several themes emerged.

1. Bring the entire value chain together earlier

Dr. Jonathan McIntyre, Founding Partner of Nodl Advisors and a Distinguished Fellow of the Council on Competitiveness, suggested that large industrial companies could play a greater role in validating and supporting startups earlier in their development.

Dr. Lee Ellen Drechsler, Senior Vice President of Corporate Research and Development at Procter and Gamble, reinforced this point. She described efforts to bring together startups, agricultural producers, manufacturers, and other participants across the value chain much earlier in the development process. The goal is to ensure that the technology, feedstock, manufacturing pathway, customer, and final product are considered together rather than sequentially. This approach can distribute risk among participants and provide startups with commercial validation that may make them more attractive to investors.

The discussion suggests an opportunity to develop incentives, partnership structures, or other mechanisms that encourage large companies to engage with startups, national laboratories, and universities earlier.

2. Establish clear national priorities for products and supply chains

Dr. Yongqin Jiao, Deputy Division Leader for Science and Technology at Lawrence Livermore National Laboratory, built on Ms. Breckenridge's earlier points, recommending a more targeted approach to commercialization and demand creation. Dr. Jiao suggested identifying a limited number of product classes, perhaps ten, that are strategically important to national security and supply-chain resilience, and concentrating resources on developing and scaling them. A government-defined list could provide a common target for national laboratories, universities, companies, and technology developers, aligning otherwise fragmented efforts around specific market needs and creating a clearer demand signal for emerging technologies.

Ms. Melissa Roberts Chapman, President and Regional Innovation Officer of the KC BioHub, offered a related perspective from pharmaceutical and animal-health supply chains. She argued that industrial policy should focus more precisely on supply-chain chokepoints where the United States has an underlying advantage in feedstocks or starting materials. She pointed to excipients and other materials that could potentially be produced from U.S. agricultural

feedstocks as examples of areas where a more targeted approach could strengthen domestic supply chains.

3. Make government a sophisticated first customer, not a perpetual customer

Dr. Jiao proposed a useful distinction for government involvement in market development. Rather than becoming a permanent customer or subsidy source, government could serve as a sophisticated first customer by establishing performance requirements, creating credible demand, and, where appropriate, committing to purchases at reasonable prices. This approach could help emerging companies demonstrate a market, attract private investment, and move through the first commercial deployment. The USDA Certified Biobased Product label was cited as one example of a government-backed mechanism that can create confidence and help customers identify qualifying products.

The broader principle is that government can potentially accelerate markets through standards, specifications, procurement, and purchasing commitments while leaving long-term commercial markets to private customers.

4. Reform federal procurement to open markets to new products

Mr. Mike O'Donnell, Director of the Center for Industrial Research and Service (CIRAS) at Iowa State University, noted that federal procurement specifications in oil, grease, and chemical markets can rely on legacy specifications, including specifications associated with National Stock Numbers in the Department of War procurement system. Where specifications are tied to legacy formulations rather than performance requirements, new formulations may be unable to compete even when they can meet or exceed the required performance.

A potential response would be to transition appropriate legacy specifications toward performance-based specifications and establish testing infrastructure capable of qualifying alternative formulations. This could create an early-customer pathway for strategically important bio-based products without requiring government to prescribe a particular technology.

5. Reconnect science and technology to the public narrative

Dr. Michael Wolf argued that competitiveness also has an important communications dimension. The challenge is to make the bioeconomy and broader science-and-technology agenda understandable and relevant to the public, not simply to policymakers and industry. Dr. Khan similarly argued that the United States should do more to recognize and celebrate scientific achievement and STEM leadership. The discussion suggested that a stronger public narrative around science, engineering, manufacturing, and innovation could help create broader support for investment and participation in the bioeconomy.

6. Develop stronger demand signals through procurement, policy, and market mechanisms

Roger Wyse offered several additional market-development mechanisms in the chat, including:

- Purchase agreements and mandates across government agencies.
- Measures to mitigate cost-of-goods differences between bio-based and incumbent products.
- Investment in science and technology that can reduce production costs.
- Mechanisms to benchmark and monetize the benefits of bio-based products.
- Tools to de-risk customer adoption and conversion.
- State and federal policies that create market signals, with low-carbon fuel standards and sustainable aviation fuel offered as examples.
- Consumer education and communications.

Taken together, these ideas point to a broader market-development framework in which government and industry can address different portions of market risk rather than relying on a single policy instrument.

7. Make national laboratories more accessible to industry and startups

National laboratories emerged as a potentially important bridge between discovery, technology development, and commercial application. The national laboratories can potentially help companies overcome technical hurdles without competing directly with the companies themselves. Dr. Mehmood Khan described the national laboratories as a major U.S. scientific asset and argued that their capabilities span traditional disciplinary boundaries between biology, chemistry, engineering, computation, and materials science.

Dr. Cody Madsen, Staff Scientist at Lawrence Livermore National Laboratory, described a potential model in which national laboratories serve as ecosystem hubs connecting startups, larger industrial companies, computational capabilities, and specialized scientific infrastructure. The discussion suggested an opportunity to make the "front door" to the national laboratories easier for companies to navigate and to establish clearer pathways for startups and larger industrial companies to access facilities, expertise, and partnership opportunities.

8. Connect universities, national laboratories, and industry more effectively

Dr. Jeffrey Gold, President of the University of Nebraska System, noted the United States has extensive capabilities across universities, national laboratories, and industry, but those capabilities are often separated by institutional, regulatory, and administrative barriers. He pointed to lengthy processes for establishing partnerships, licensing intellectual property, and negotiating agreements.

One potential response would be to develop more standardized partnership agreements and templates that allow institutions to move from an initial request to active collaboration much more quickly. The goal would be to create a system in which a company or researcher with a significant technical problem can identify the relevant expertise and begin working with it in days or weeks rather than months.

Participants also noted that some large federal programs now require national laboratory and industry partnerships, but that the academic-to-industry connections needed to support those models are not always in place.

9. Compete for talent, research capacity, and scientific leadership

The discussion highlighted that market competitiveness ultimately depends on maintaining the scientific and engineering capabilities needed to generate the next generation of products. Dr. Khan and others raised concerns about the international competition for scientific talent and research investment.

Dr. Gold noted the importance of both basic and applied research as the "seed corn" of future commercial activity.

Maj. Gen. (Ret.) Paul Friedrichs, M.D., pointed to the scale of research investment occurring in China and argued that the United States needs to recognize the competitive implications of differences in the cost and support available for knowledge creation.

The chat included calls for a more strategic approach to federal research investment, including support for the FAIR Act. This legislation aims to accelerate the approval of life-saving therapies and early-stage clinical trials by cutting administrative red tape, keeping the U.S. competitive in medical innovation. Participants noted that this should be part of a broader national research strategy directly linked to economic growth, health, workforce availability, and national security.

10. Build international partnerships while strengthening domestic capacity

Participants noted that U.S. competitiveness depends on combining domestic capabilities with strategic international partnerships, as China, Europe, the United Kingdom, and sovereign wealth funds bring together capital, scientific talent, manufacturing infrastructure, and market access. At the same time, reliance on foreign capital can encourage companies to locate manufacturing and other economic activity abroad. The challenge is to engage international partners while maintaining a sufficiently competitive domestic environment to keep investment, production, intellectual property, and economic value connected to the United States.

11. Address regulatory structures that can prevent demand from developing

Near the close of the discussion, Dr. Khan introduced another dimension of market development: regulation.

The pathway from discovery to market includes not only science, development, manufacturing, and customers, but also a regulatory pathway that allows products to reach those customers. Dr. Khan argued that regulatory structures designed primarily around treating established diseases may not adequately accommodate technologies aimed at prevention. He pointed to diabetes as a particularly stark example: although preventive therapies exist, there is currently no drug approved specifically for the prevention of diabetes, in part because the regulatory framework is oriented toward treatment rather than disease prevention. He suggested that without a workable pathway for preventive technologies, scientific advances may never reach consumers.

Ms. Wince-Smith identified this as a potential area for further work, suggesting that the Council explore whether existing regulatory frameworks could be amended or expanded to better accommodate prevention-oriented technologies. She cited emerging efforts to identify biomarkers of diseases such as Alzheimer's well before symptoms appear as an example of technologies that could challenge traditional treatment-focused approval pathways.

This discussion pointed to a broader issue: demand cannot develop if products cannot reach the market through a workable regulatory pathway.

POTENTIAL AREAS FOR FURTHER DEVELOPMENT

The discussion identified several potential demand-side interventions that could help create markets for U.S. bio-based products, accelerate commercialization, and strengthen the ability of U.S. companies to compete globally.

1. **Develop a demand-driven strategy focused on priority markets and products where the United States can compete globally.** Identify a limited set of high-value product categories and supply chains where biological production can deliver clear customer value and where U.S. feedstocks, energy, technology, manufacturing capabilities, intellectual property, or other advantages create a credible path to global competitiveness. Focus commercialization efforts on real products and real customers, prioritizing areas with identifiable demand, compelling value propositions, and pathways to competitive economics. Align research, infrastructure, investment, and demand-development efforts around these strategic priorities.
2. **Create credible early demand to unlock private investment.** Explore purchase agreements, commercial offtake commitments, performance-based procurement, strategic government purchasing, and other mechanisms that can reduce first-market

risk and give companies greater confidence to invest in new production capacity. The objective should be to help promising products reach commercial scale and attract private capital, not to create permanent dependence on government support. Because demand, capital, cost, and scale are mutually reinforcing, interventions should be evaluated in part by their ability to turn credible demand into investment, production, and competitive U.S. markets.

3. **Make procurement a stronger market accelerator.** Use existing programs, including USDA BioPreferred, more strategically to help customers identify and adopt bio-based alternatives across a broader range of applications. Review legacy specifications and identify opportunities to shift appropriate procurement requirements toward performance-based standards. Strengthen testing, qualification, and validation infrastructure so that new products can compete on performance rather than simply conforming to incumbent specifications.
4. **Integrate bioeconomy market development with national security and international strategy.** Examine how existing authorities, including the Defense Production Act and related mechanisms, could support strategically important biological inputs and products where supply-chain vulnerabilities intersect with national security. At the same time, identify opportunities to work with allies and partners that possess complementary scientific, capital, manufacturing, or market capabilities, while ensuring that the United States remains an attractive location for investment, talent, intellectual property, and production.
5. **Reduce the barriers to customer adoption.** Even when a bio-based product offers compelling economics or performance, customers may face switching costs related to quality and consistency, specifications, qualification requirements, reliability of supply, operational changes, and supply-chain risk. Accelerating testing, certification, standards development, customer validation, insurance options, and other market infrastructure could give customers greater confidence in new products and make it easier for emerging companies to enter established markets.
6. **Strengthen early engagement between customers, startups, and the broader value chain.** Develop mechanisms that encourage large industrial companies to engage with startups and universities earlier in the development process. Early corporate engagement can help validate technologies against actual customer requirements, align suppliers and downstream customers, identify commercialization barriers, and distribute risk across the value chain.
7. **Build the broader case for bioeconomy competitiveness.** Develop a public narrative that connects scientific and technological leadership to economic growth, national security, health, resilience, and quality of life. Making these connections more tangible can help build broader understanding of why U.S. leadership in the bioeconomy matters

and why sustained investment in commercialization and market development is important.

WHAT'S NEXT

The discussion reinforced that the challenge facing the U.S. bioeconomy is connecting science, technology, manufacturing, customers, capital, infrastructure, talent, regulation, and policy into a system capable of producing competitive products at scale.

Participants are encouraged to provide additional examples, case studies, and specific recommendations, with particular emphasis on identifying:

- What should be done?
- Who should do it?
- What existing authority, program, institution, or partnership could be used?
- What barrier would the action remove?
- How would it reduce time to market, improve economics, create demand, or strengthen U.S. competitive advantage?

To do so, you may use this survey link: [Council on Competitiveness Bioeconomy Working Session 2 | Additional Data Collection – Fill out form](#)

Our objective remains to move from broad agreement on the importance of the bioeconomy to a focused set of specific, actionable recommendations that can strengthen the U.S. pathway from biological discovery to commercial production and help the United States compete in global markets.

If you have additional questions, concerns, or trouble with the survey, please email [Mike Nelson](#) and [Ann McMahon](#) from the Council on Competitiveness.