

March 10, 2022

Via E-rulemaking Portal (regulations.gov)

The Honorable Alejandro Mayorkas
Secretary of Homeland Security
U.S. Department of Homeland Security
2707 Martin Luther King Jr Ave SE
Washington, D.C. 20528

Re: Comments to the Forced Labor Enforcement Task Force on Methods to Prevent the Importation of Goods Mined, Produced, or Manufactured with Forced Labor in the People's Republic of China (Docket No. DHS-2022-0001)

Dear Secretary Mayorkas,

The Semiconductor Industry Association (“SIA”), a U.S. trade association representing global leaders in semiconductor manufacturing, design, and research, respectfully submits these comments to the questions posed by the U.S. Department of Homeland Security on behalf of the Forced Labor Enforcement Task Force (“Task Force”) pursuant to the Uyghur Forced Labor Prevention Act (“UFLPA”) regarding methods to prevent the importation of goods produced with forced labor in the People’s Republic of China. See Docket No. DHS-2022-0001.

SIA is the voice of the semiconductor industry, one of America's top export industries and a key driver of our economic strength, national security, and global competitiveness. Semiconductors – the tiny chips that enable modern technologies – power incredible products and services that have transformed our lives and our economy, powering hundreds of thousands of manufacturing and technology jobs and virtually everything digital from cellphones and cards to supercomputers and military systems. U.S. chipmakers lead the world with close to half of the global market. Semiconductors are a top five U.S. export with more than \$49 billion exports in semiconductors in 2020. Nearly half of the manufacturing operations of the leading U.S. semiconductor firms are located in the United States spread across 18 states, directly employing 277,000 people. These are highly-skilled and good-paying American jobs that support nearly 1.6 million additional U.S. jobs. SIA represents 98% of the U.S. semiconductor industry by revenue and nearly two-thirds of non-U.S. chip firms.

SIA members are committed to complying with the laws and regulations of the nations where they do business, including laws prohibiting forced labor such as Section 307 of the Tariff Act of 1930, the California Transparency in Supply Chains Act, Australia’s Modern Slavery Act, and the UK Modern Slavery Act. Accordingly, SIA members have implemented rigorous due diligence measures across their supply chains to prevent the use of forced labor. For example, SIA members’ robust due diligence and traceability efforts include independent audits; supply chain mapping; assessment of risk factors; and contractual and supplier code of conduct language prohibiting the use of forced labor.

As a result of these efforts, we are confident the U.S. semiconductor supply chain is at low risk of sourcing silicon from China, including Xinjiang. Though the UFLPA designates polysilicon as a high-priority enforcement sector, the polysilicon produced in Xinjiang, and elsewhere in China, currently does not meet the extremely high levels of purity required for semiconductor-grade polysilicon. Thus, as far as we are aware, polysilicon produced in Xinjiang or elsewhere in China currently is not used by the semiconductor industry. Further, the global production of semiconductor-grade polysilicon is concentrated amongst five major manufacturers (Wacker Chemie (Germany), Hemlock Semiconductor (USA), Tokuyama Corporation (Japan), Mitsubishi Corporation (Japan), and REC Silicon (based in the U.S., listed in Norway)), with Wacker Chemie and Hemlock Semiconductor representing approximately three quarters of the global semiconductor polysilicon supply. Of these manufacturers, confirmed sources of the metallurgical grade silicon for semiconductor-polysilicon production include the United States, Brazil, Malaysia, France, Germany, Norway, Australia, and South Korea.

Consequently, we urge the Task Force to work with SIA to (1) promulgate clear and actionable guidance that takes into consideration the low risk that semiconductor supply chains involve forced labor in violation of the UFLPA; (2) help the industry and suppliers ensure that their supply chains remain free of forced labor in the future; (3) assist the industry and its suppliers in developing agreed protocols and documentation that would allow the industry to demonstrate to U.S. Customs and Border Protection (“CBP”) at U.S. ports of entry that its supply chains remain free of forced labor; and (4) through effective UFLPA compliance minimize the risk of unnecessary disruptions that could impact key U.S. manufacturing sectors (e.g., motor vehicles, appliances, medical devices, technology, etc.) and the hundreds of thousands of U.S. jobs that depend on timely access to semiconductor inputs, particularly in a time of widespread global shortages and supply chain disruptions.

As semiconductor innovation and global chip demand continue their inextricable rise, CBP and industry must work together to ensure that UFLPA does not lead to supply chain disruptions and delays that cost jobs and put America’s leadership in this foundational, indispensable technology at risk, while at the same time ensuring that our supply chains remain free from forced labor and human rights abuses.

I. The Importance of the U.S. Semiconductor Industry to the U.S. Economy and National Security

Semiconductors are a foundational technology for virtually all areas of our economy. Semiconductors were invented in the United States, which still leads the world in cutting-edge manufacturing and design.

The semiconductor industry directly employs about 277,000 workers in the United States, and for every direct job, there are 5.7 additional jobs supported in other parts of the U.S. economy. That equals 1.6 million additional jobs as a result of a thriving U.S. semiconductor industry. Moreover, a job in the semiconductor industry pays on average 2.5 times more than the average salary for all U.S. workers.

As the “brains” of electronic devices, semiconductors have been crucial to the pandemic response and recovery of the global economy. They have provided display, wireless connectivity, processing, storage, power management, and other essential functions to a wide array of essential products, life-saving equipment, and critical infrastructure. This includes healthcare and medical devices, telecommunications, energy, finance, transportation, agriculture, manufacturing, aerospace, and defense. Semiconductors also underpin the IT systems that have made remote work and school possible and have provided access to essential services across every domain, including medicine, finance, education, government, food distribution, and more. Throughout this global pandemic, semiconductor-rich devices have become increasingly prevalent in developing solutions for numerous problems in the economy.

While the semiconductor industry achieved great successes in 2021, it also faces significant challenges. Chief among them is a widespread global semiconductor shortage. Unanticipated rising demand for semiconductors needed during the pandemic response, coupled with significant fluctuations in chip demand for other products such as automotive vehicles, triggered a rippling supply-demand imbalance felt across the world. The semiconductor industry has worked diligently to increase production to address high demand, shipping more semiconductors on a monthly basis than ever before by the middle of 2021, but most industry analysts expect the shortage to linger into 2022.

The key to maintaining the advancements that fuel our industry and the U.S. economy is research and development. SIA member companies continue to invest and expand in the United States, with the construction of new and expanded state-of-the-art fabrication facilities across the country. Overall, U.S.-based semiconductor companies retain about 50 percent of global market share in a highly competitive market. To maintain, grow and secure its leadership, the United States should pass strategic incentives to support more domestic manufacturing as seen in the support for the CHIPS Act from the Biden Administration and Members of Congress on both sides of the aisle.

A thriving U.S. semiconductor industry means a strong American economy, high-paying jobs, and an outsized positive impact across the nation. Simply put, semiconductors strengthen our country.

II. Semiconductor Supply Chain Overview

The process of manufacturing semiconductors typically consists of hundreds of steps to produce a single wafer, i.e., a thin, round slice of a semiconductor material varying in size between 6 and 12 inches in diameter. Patterned layers are added on and into the wafer creating interconnected electrically active regions on the surface, ultimately forming the complete semiconductor.

Below are the key production stages:

- **Mining and Refinement of Metallurgical Grade Silicon:** Silicon dioxide, also known as silica which is found in sand, is mined and refined into metallurgical grade silicon. Metallurgical grade silicon is used by the aluminum, chemical, and electronics industries. Silicones and aluminum represent the majority share of the silica market, at 43% and 40%, respectively.

- **Polysilicon:** Metallurgical grade silicon is further refined into polysilicon. The semiconductor industry makes up 6% of the annual consumption of polysilicon, at ~35,000 metric tons (MT). There are just five suppliers that represent the majority of semiconductor-grade polysilicon manufacturing: Wacker Chemie (Germany), Hemlock Semiconductor (USA), Tokuyama Corporation (Japan, Mitsubishi Corporation (Japan), and REC Silicon (based in the U.S., listed in Norway), with Wacker and Hemlock having approximately three-quarters of global semiconductor polysilicon market share. Wacker has a polysilicon production capacity of 80,000 MT (20,000 MT of which is located in the United States, 60,000 MT in Germany) and Hemlock has a polysilicon production capacity of approximately 36,000 MT. This capacity represents both solar- and semiconductor-grade polysilicon. Companies generally do not disclose their semiconductor capacity figures, however, the semiconductor industry consumes approximately 35,000 MT of polysilicon per year. Confirmed sources for metallurgical grade silicon for these manufacturers include the United States, Brazil, Malaysia, France, Germany, Norway, South Korea, and Australia.
- **Ingot Production:** Polysilicon is heated into a molten liquid. In a process similar to repeatedly dipping a wick in wax to make a candle, a small piece of solid silicon (i.e, the “seed”) is dipped in molten liquid. As the seed is slowly withdrawn by mechanical means from the melt, the liquid quickly cools to form a single crystal ingot.
- **Blank Wafer Production:** This cylindrical crystal ingot is then ground to a uniform diameter. A diamond saw blade slices the ingot into thin wafers. The cut wafers are then processed through a series of machines where they are ground (optically) smooth and chemically polished.
- **Wafer Fabrication (front-end manufacturing):** The heart of any semiconductor manufacturing business is the fabrication, where the integrated circuit (“IC”) is formed on the wafer. The average time to fabricate finished semiconductor wafers, known as the cycle time, is about 12 weeks, but it can take up to 14-20 weeks to complete for advanced processes. The fabrication process, which takes place in an environmentally controlled clean room, involves a series of principle repetitive steps including: oxidation and coating the wafers with layers of insulating materials; transferring the IC patterns in the design onto the wafers via lithography; etching the wafer to clean it; showering the wafer with ionic gases that modify the layer via doping; and metallization of the wafer by laying down the metal links between the transistors. Japan, Taiwan, and Germany collectively constitute the majority of the semiconductor-grade polysilicon wafer supply.
- **Wafer Fabrication (back-end manufacturing):** Electrical tests then check the functionality of each chip on the completed wafer, which is then sliced into single chips that are assembled and packaged for delivery to customers. The United States consistently maintains a semiconductor trade surplus with China. Chinese companies export almost no semiconductors to the U.S. market. In reality, most U.S. semiconductor imports from China are semiconductors designed and/or manufactured

in the United States, and shipped to China for this final stage of semiconductor fabrication known as ATP (assembly, testing, and packaging). This stage in the semiconductor manufacturing process is the least value-additive stage of production, comprising about 10% percent of the value of the final product.

III. Recommendations

As emphasized in Part I above, semiconductors are essential components of the technologies that control and enable critical infrastructure and life-critical equipment, such as medical devices, water systems, the energy grid, transportation and communication networks, and the financial system. Moreover, the semiconductor industry directly employs over a quarter of a million workers in the United States and indirectly supports more than 1.6 million jobs in the United States. As a result, any disruptions to this supply chain can have significant ramifications for the rest of the U.S. economy and workforce.

Given the extreme complexities of semiconductor manufacturing, the global industry maintains strict supply chain controls and closely tracks suppliers of parts, equipment, and materials, including steps to prevent human rights abuses. As part of the World Semiconductor Council, SIA in partnership with counterparts in Europe, Korea, Japan, Chinese Taipei, and China established a Conflict-free Supply Chain Policy in 2013 to ensure the responsible sourcing of minerals and address deep concerns about the sources of minerals, including polysilicon, from “conflict-affected and high-risk areas” based on the “OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from “Conflict-Affected and High-Risk Areas.” This Guidance has served as a common reference point for all stakeholders in the semiconductor supply chain.

Therefore, SIA encourages the Task Force to implement clear and actionable guidance that offers the predictability that industry needs to continue to fulsomely address forced labor issues and continue operating this critical supply chain with as few disruptions as possible.

A. Standardization of Protocols on Supply Chain Traceability and Verification Standards

SIA strongly supports the development of U.S. government-approved protocols on supply chain traceability and verification standards that industry can rely on to strengthen supply chain mapping and due diligence efforts. Any such protocols should be reasonable, evidence-based, consistently applied, and informed by good faith input from the business community.

Furthermore, such a protocol should be specific to the semiconductor industry, taking into account the nuances of the supply chain and the challenges it faces. In the very least, the Task Force should develop a protocol for each of the high-priority sectors, including polysilicon. Compliance with this set of protocols should be a factor that weighs in favor of CBP determining that there is evidence that any imports are not connected to Xinjiang or Uyghur forced labor issues.

CBP’s current guidance in the form of various FAQ publications and “slick sheets” provides only minimal direction to businesses, and instead points to a variety of other resources, such as the OECD Guidelines for Multinational Enterprises. Though SIA members encourage alignment with

international standards, a comprehensive, centralized set of protocols is critical to industry's ability to maintain a robust compliance program.

Moreover, to the extent that the developed protocol recommends that companies receive, for example, third-party certifications regarding forced labor in their supply chains, SIA encourages the Task Force to identify a limited pool of certifying entities that would be accepted by the U.S. government. This would help ensure greater consistency and oversight. However, SIA notes that the semiconductor industry already aligns its due diligence standards with international standards such as the OECD Guidelines for Multinational Enterprises. SIA therefore encourages CBP to recognize this alignment of standards as sufficient as opposed to creating a separate certification process, which can lack consistency and oversight as noted above.

B. Reasonable Evidentiary Standards

The UFLPA's rebuttable presumption only applies to goods, wares, articles, and merchandise that are mined, produced, or manufactured wholly or in part in Xinjiang or produced by an entity on a list required pursuant to clause (i), (ii), (iv), or (v) of UFLPA Section 2(d)(2)(B). Therefore, the Task Force should clarify the nature and distinguish between (i) evidence required to overcome the rebuttable presumption by demonstrating the absence of forced labor in a good's supply chain, and (ii) evidence required to show that the goods were not manufactured wholly or in part in Xinjiang or by a producer identified on one of the above-mentioned lists, such that the rebuttable presumption does not apply in the first place. The Task Force should provide separate guidance regarding "type (ii)" evidence and clarify that a reasonableness evidentiary standard is applicable to such evidence, which is not clear on the face of UFLPA.

Clearly identifying and distinguishing between the two types of evidence discussed above will promote greater administrability of UFLPA for the following reason. Importers will more readily understand what is expected and how due diligence measures can be further improved to address forced labor. As a result, importers will be more prepared to provide the necessary documentation to CBP such that CBP can focus more of its efforts on reviewing the evidence as opposed to coordinating with importers about what is needed.

C. Tools to Strengthen Compliance Efforts: Information Sharing and Transparency

SIA considers increased information sharing and transparency to be one of the most important tools that the U.S. government can provide to strengthen compliance efforts. Information is key to helping U.S. businesses make informed decisions about the companies they chose to contract with and in helping to remediate forced labor issues.

First, as provided in the UFLPA, we urge the Task Force to establish:

- (i) a list of entities in the Xinjiang Uyghur Autonomous Region that mine, produce, or manufacture wholly or in part any goods, wares, articles and merchandise with forced labor;

- (ii) a list of entities working with the government of the Xinjiang Uyghur Autonomous Region to recruit, transport, transfer, harbor or receive forced labor or Uyghurs, Kazakhs, Kyrgyz, or members of other persecuted groups out of the Xinjiang Uyghur Autonomous Region;
- (iii) a list of products mined, produced, or manufactured wholly or in part by entities on the list required by clause (i) or (ii);
- (iv) a list of entities that exported products described in clause (iii) from the People's Republic of China into the United States; and
- (v) a list of facilities and entities, including the Xinjiang Production and Construction Corps, that source material from the Xinjiang Uyghur Autonomous Region or from persons working with the government of the Xinjiang Uyghur Autonomous Region or the Xinjiang Production and Construction Corps for purposes of the “poverty alleviation” program or the “pairing-assistance” program or any other government labor scheme that uses forced labor.

Such lists are vital to enabling U.S. companies to avoid dealing with entities and facilities that appear to be engaging in forced labor, or products that appear to be produced with forced labor.

Second, as discussed in Part III.A. above, a standard and widely-used CBP protocol could be very useful because it likely would be adopted by a large number of companies, SIA would welcome an opportunity to work with CBP on such a protocol to ensure that our supply chains remain free of forced labor and that this can be appropriately documented.

Third, entities and companies potentially affected by a forced labor or UFLPA-related investigation should be presented with all relevant information and allegations and given an opportunity to analyze and respond prior to any withhold release order (“WRO”) or other import restrictions taking effect. More specifically, a formal administrative procedure with clear and reasonable timelines should be instituted by regulation to notify the company under investigation and affected importers, and to the extent possible, known affected businesses. These entities should then have an opportunity to submit information to the U.S. government during the investigation stage prior to the issuance of a WRO or addition of an entity to the lists required pursuant to UFLPA, including an opportunity for a hearing. We are concerned that otherwise unfounded allegations of forced labor abuses could be used by competitors or financial speculators to disrupt markets or supply chains or as a tool for financial blackmail.

The Task Force should also consider whether industry-wide engagement—which can be considerably more efficient than analyzing risks on a per company basis—is appropriate in certain forced labor investigations. SIA also encourages the Task Force to work with the semiconductor industry to develop more specific guidance around the evidentiary documentation that companies should submit in support of or in defense against allegations of forced labor.

Fourth, the U.S. government should share information and data on specific trends it is seeing through its own enforcement activities. Currently, businesses must try to derive that information

from sources such as press releases. Increased access to aggregate government information will also help hone compliance efforts on the basis of risk.

Fifth, SIA supports the development of regulations authorizing voluntary prior disclosures when importers or other businesses identify potential incidents of forced labor goods in their supply chains before CBP issues a WRO or takes other enforcement action against the disclosing party's goods. Currently, CBP's prior disclosure regulations at 19 C.F.R. § 162.74 do not specifically cover Section 307 violations. A formal prior disclosure process would promote further proactive compliance and enhance information sharing between CBP and the trade community.

Sixth, SIA is not aware of emerging technologies, such as DNA-test tools being deployed in the apparel industry, that can help identify forced labor risk in raw materials relevant to the semiconductor industry—namely polysilicon. However, SIA would support the development or implementation of such tools so long as the technology is properly validated, evidenced-based, and available to industry—as opposed to only CBP.

Seventh, SIA would welcome an opportunity to work with the Task Force and CBP to provide additional training and educational resources to CBP agents and import specialists regarding the semiconductor supply chain. SIA appreciates the willingness that CBP has already demonstrated to better understand the nuances of the semiconductor supply chain. Additional collaborative training would permit CBP agents to more efficiently review and understand evidence submitted by importers at ports of entry.

D. Recognition of Practical Limitations

Despite the semiconductor industry's commitment to combatting forced labor, there remain practical limitations to its traceability efforts. The Task Force should take the following limitations into consideration and work on addressing them with the input of importers and other stakeholders.

- **Third-Country Supply Chain Routes:** Third-country supply chain routes pose a practical limitation in supply chain mapping and due diligence. Businesses outside of China often lack resources and understanding relating to Uyghur forced labor issues. Though SIA members are committed to working with their third-country suppliers to identify goods and supply chains potentially affected by Uyghur forced labor, the U.S. government could play an important role in building partnerships with third-country governments to enhance awareness about these issues in their business communities and assist in information gathering that can be used to identify affected suppliers and supply chains. SIA urges the U.S. government to take advantage of its influence and leverage to assist in educating and organizing third-country sources of information that can assist the entire business community in its UFLPA compliance efforts.
- **Confidentiality:** The semiconductor supply chain is complex. As such, companies may not have direct contractual relationships with entities toward the top tiers of the supply chain. For this reason, suppliers often cite confidentiality as one of the impediments to providing their own suppliers' names to U.S. businesses. SIA appreciates that CBP has thus far been accommodating of this challenge and has been willing to accept

documentation provided by these sub-suppliers in the context of authorizing the release of goods detained pursuant to WROs. SIA encourages the formalization of this process in the Task Force’s resulting guidance.

- **Restrained Enforcement and the Task Force’s Forthcoming Guidance:** Even prior to the UFLPA’s enactment, SIA members have been diligently working to ensure there is no forced labor in their supply chains. However, given the complexity of the semiconductor supply chain, identifying and vetting new suppliers can take time. Therefore, SIA requests that that CBP exercise a reasonable period of restrained enforcement from the date the rebuttable presumption takes effect on June 21, 2022. This is the same date that the Task Force’s report containing importer guidance is due to Congress. Without such a grace period, semiconductor suppliers will not have any time to review the guidance prior to being required to comply with it. As a result, semiconductor importers may be required to immediately halt supply chains until alternative suppliers can be identified. This disruption would impact not only all of the industries that rely upon semiconductors but also the over one million U.S. jobs that directly or indirectly depend upon the semiconductor industry. Moreover, SIA respectfully urges the Task Force to issue its guidance prior to the June 21, 2022 deadline to give the semiconductor industry additional time to review.
- **Timeliness of CBP’s Review of Detained Shipments:** SIA respectfully urges the Task Force to issue guidance ensuring the timeliness of CBP’s reviews of detained shipments. Timely action is critical to the U.S. industries that rely upon semiconductor imports including the automotive, manufacturing, industrial, healthcare, telecommunications, infrastructure, finance, and defense sectors. The longer imports are delayed at port, the greater the downstream effects on the U.S. jobs relying upon those imports and the ultimate end-users. These delays can cause significant supply chain disruptions in an industry already challenged by disruptions. An increased scope of detentions under the UFLPA could exacerbate this situation, absent CBP guidance on timeliness.

IV. Conclusion

SIA appreciates the opportunity to comment on the Task Force’s questions. SIA respectfully urges the Task Force to implement clear, actionable guidance—especially including a standardized due diligence protocol—taking into consideration the practical limitations industry faces. SIA also requests that the Task Force continues to collaboratively work with SIA and other stakeholders as it considers how to prevent the importation of goods produced with forced labor.