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New U.S. Semiconductor Technology Controls Impose Strict Burdens, and Sow Confusion

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On October 7, 2022, the Commerce Department Bureau of Industry and Security (“BIS”) – the primary gatekeeper on U.S. export controls – unleashed two lengthy and highly complex sets of regulations, aimed squarely at stopping the deployment of sophisticated semiconductor manufacturing technology in China, and broadening the power of the U.S. government to restrict technology sharing with foreign companies.

One of the two rules, titled “Revisions to the Unverified List; Clarifications to Activities and Criteria that May Lead to Additions to the Entity List Interim Final Rule” (the “UVL List and Entity List Rule”),¹ makes it easier for BIS to add foreign firms to the restricted party “Entity List” if their home governments “do not cooperate with U.S. efforts to promote secure trade.” In addition, the rule adds 31 Chinese entities to, and removes nine Chinese entities from, another list of parties of concern: the Unverified List (the “UVL List”), which consists of parties whose export controls compliance assurances BIS is unable to verify.

The second rule, called “Implementation of Additional Export Controls: Certain Advanced Computing and Semiconductor Manufacturing Items; Supercomputer and Semiconductor End Use; Entity List Modification Interim Final Rule” (the “Advanced Computing and Semiconductor Manufacturing Rule”),² imposes heightened export controls on certain advanced-computing integrated circuits and semiconductor manufacturing items, transactions for supercomputer and integrated circuit end uses, and transactions involving certain entities on the Entity List.

These rules are being implemented in three phases, with all provisions becoming effective by October 21. In addition, there will be a 60-day comment period for the Advanced Computing and Semiconductor Manufacturing Rule.

U.S. Export Controls and Changes to Two Lists of Parties of Concern

BIS implements and administers the U.S. Export Administration Regulations (“EAR”), which regulate exports (supply of items from the United States), reexports (supply from a foreign country an item previously exported from the United States) or transfers (in-country) of items that are “subject to the EAR.” Items are subject to the EAR if they: (1) originate in the United States; (2) are located in the United States (even if only in-transit); (3) are foreign-made but contain specified categories or levels of controlled U.S. content; or (4) are the “direct products” of controlled U.S.-origin technology or software. BIS has the authority to restrict, through the imposition of “licensing” requirements, prohibitions, or

other conditions, the transfer of items subject to the EAR to specified destinations or end-users, or for specified end-uses.

The Entity List

The Entity List is a compilation of foreign entities (including businesses, government and private organizations, individuals, and other types of legal persons) that are regarded as restricted recipients of items (or a specified category of items) subject to the EAR. No person may export, reexport, or transfer (in-country) any (or in some cases specified) items “subject to the EAR” to a person on the BIS Entity List, unless that transaction is licensed by BIS.³

Companies can be added to the Entity List when there is “reasonable cause to believe, based on specific and articulable facts, that the entity has been involved, is involved, or poses a significant risk of being or becoming involved in activities that are contrary to the national security or foreign policy interests of the United States.”⁴

The UVL List and Entity List Rule clarifies that one way in which an entity can pose a risk of being involved in such activities is “through certain circumstances that may be outside of its own control. Such circumstances that may place an entity at significant risk include situations involving a sustained lack of cooperation by a host government authority, for example, by preventing an end-use check from being conducted, that effectively prevents BIS from determining compliance with the EAR.”⁵

This revision to the regulation effectively authorizes BIS to add any foreign entity to the Entity List purely based on its home government’s actions that may bear no relation to the designated company itself. The rule will make it more difficult for companies to challenge an Entity List designation, as the specific and articulable facts resulting in the designation may lie entirely outside of the company’s control.

The Unverified List

The BIS Unverified List (the “UVL”) contains the names and addresses of foreign persons who are or have been parties to a transaction involving the export, reexport, or transfer (in-country) of items subject to the EAR.⁶ Foreign persons are added to the UVL because BIS was not able to verify their compliance “*bona fides*.” This refers to the legitimacy and reliability of any representations, restrictions, and controls on the end use or end user that might be required for approval to export, reexport or transfer (in-country) an item to that entity. The inability of BIS to confirm the *bona fides* of foreign persons raises certain concerns about the potential for diversion or evasion of U.S. export control laws.

No license exceptions may be used for exports, reexports, or transfer (in-country) to entities on the UVL. For transactions with UVL entities that do not require a license, the shipping party must still obtain a UVL statement, which contains, among other things, a statement declaring that the UVL party will not use the item in violation of the EAR or provide them to a user prohibited by the EAR.

In its latest action, BIS added 31 new Chinese entities to, and removed nine Chinese entities from, the UVL.

New Export Control Classifications and Related Restrictions

The restrictions on a particular transfer of items subject to the EAR will depend primarily on the specific “export classification” of the item at issue, the destination of the export, and, in some cases, the end use or end users. Export classifications are contained in the Commerce Control List (“CCL”). The CCL is

composed of a series of export control classification numbers ("ECCNs") that describe the type of items controlled under any given ECCN. Each ECCN has associated reasons for control, and if an item is classified under an ECCN and is bound for a destination that requires a license for that reason of control, then a license is required for the transfer of that item.

Addition of New Items Subject to Heightened Export Controls

The Advanced Computing and Semiconductor Manufacturing Rule adds new ECCNs to the CCL covering certain semiconductor manufacturing deposition equipment and specially designed parts, components, and accessories for such equipment, as well as associated software and technology. Additionally, the rule adds new ECCNs to cover certain advanced and high-performance computing chips and computer commodities that contain such chips, as well as associated software and technology. These new ECCNs are controlled for China-specific regional stability reasons ("RS") and for anti-terrorism reasons ("AT"); therefore, items meeting the parameters described in these new ECCNs would require a license for shipment to China, Iran, Syria, or North Korea. (Of course, virtually all exports to Cuba and to the Russian-occupied Donetsk, Luhansk, and Crimean regions of Ukraine also are prohibited, under separate sanctions administered by the U.S. Treasury Department.)

Importantly, BIS is adding additional license requirements to the ECCNs that control mass-market encryption technology and mass-market encryption software. Prior to the new rules, mass-market encryption technology and software were subject only to AT controls – meaning such items were freely exportable except to Iran, Syria, or North Korea (as well as to Cuba and the sanctioned regions of Ukraine). Now, a license will be required for the supply of such items to China if the items meet or exceed the performance parameters established in the newly instituted ECCNs encompassing certain advanced and high-performance computing chips and computer commodities that contain such chips.⁷

Expansion of the Foreign Direct Product Rule

In addition to placing new items on the CCL, BIS also revised existing and created new Foreign Direct Product ("FDP") rules, expanding U.S. export controls to cover additional items produced outside of the United States. FDP rules define when a foreign made item is subject to the EAR, typically by providing a "product scope" and a "destination, end-user, or end use scope." Because FDP rules allow the U.S. to limit the export, reexport, and supply (in-country) of foreign-produced items that would otherwise fall outside of its jurisdiction, FDP rules are powerful weapons in regulating access by certain foreign end users to advanced technology.

Advanced Computing FDP Rule

BIS's Advanced Computing FDP rule broadly covers items produced outside the U.S. that are advanced integrated circuits, commodities containing such integrated circuits, or related technology. This new FDP rule provides that such integrated circuits and associated commodities are subject to the EAR – and all related licensing requirements – when they are:

1. Either (a) the direct product of software or technology subject to the EAR and classified under a specified ECCN, or (b) produced by a plant or a major component of a plant located outside the United States that is itself a direct product of U.S. origin technology or software classified under a certain ECCN; and
2. Where there is "knowledge" that either the item is either: (x) destined for China or will be incorporated into any part, component, computer, or equipment on the CCL that is destined

to China, or (y) technology developed by an entity headquartered in China for the production of a mask or an integrated circuit wafer or die.

The Advanced Computing and Semiconductor Manufacturing Rule advises that exporters, reexporters, and transferors may choose to obtain a written certification from a supplier that asserts that an item being provided would be subject to the EAR if a future transaction meets the destination scope of this rule described in Item 2 above. Though not required, BIS notes that this certificate could assist suppliers with the process of resolving potential red flags regarding whether an item is subject to the EAR.⁸

Supercomputer FDP Rule

The Advanced Computing and Semiconductor Manufacturing Rule also contains a new Supercomputer FDP rule. This rule is designed to capture items based primarily on end use involving supercomputers. Under this rule, an item is subject to the EAR if it is:

1. Either: (a) the direct product of software or technology subject to the EAR and classified under a certain ECCN, or (b) produced by a plant or a major component of a plant located outside the United States that is itself a direct product of U.S. origin technology or software classified under a certain ECCN; and
2. Where there is “knowledge” that the foreign-produced item will be either: (x) used in the design, development, production, operation, installation (including on-site installation), maintenance (checking), repair, overhaul or refurbishing of, a supercomputer located in or destined in China; or (y) incorporated into, or used in the development or production of any part, component, or equipment that will be used in a supercomputer located in or destined to China.

“Supercomputer” will be defined in the EAR to mean a “computing ‘system’ having a collective maximum theoretical compute capacity of 100 or more double-precision (64-bit) petaflops or 200 of more single-precision (32-bit) petaflops within a 41,600 ft³ or smaller envelope.”

Entity List FDP Restrictions

The EAR already contains an Entity List FDP Rule for specified entities on the Entity List. These entities are demarcated with a footnote 1 (“Footnote 1 Entities”). The Advanced Computing and Semiconductor Manufacturing Rule, however, adds new product and end user scopes to the Entity List FDP rule, broadening BIS’ ability to limit the supply of certain products to specified entities. The new rule will apply to entities designated with a footnote 4 on the Entity List (“Footnote 4 Entities”). As part of the new rule, BIS is designating as Footnote 4 Entities 28 companies from China that had previously been added to the Entity List between 2015 and 2021.

More specifically, the new Entity List FDP restrictions will cover any foreign-produced items that are:

1. Either: (a) the direct products of technology or software subject to the EAR and classified under a certain ECCN; or (b) produced by any plant or major component of a plant when the plant or major component of a plant itself is a direct product of U.S. origin technology or software that is classified under a certain ECCN; and
2. Where there is “knowledge” that: (x) the foreign-produced item will be incorporated into, or will be used in the production or development of any part, component, or equipment produced, purchased, or order by a Footnote 4 Entity; or (y) a Footnote 4 Entity is a party to any

transaction involving the foreign produced item (e.g. as a purchaser, intermediate consignee, ultimate consignee, or end user).

Because FDP rules dictate when an item becomes subject to the EAR, and because a designation on the Entity List restricts items subject to the EAR that can be transferred to such entities, any item that meets these parameters will be considered subject to the EAR and prohibited for transfer to the Footnote 4 Entities without a license from BIS. Notably, however, the item would not necessarily be rendered subject to the EAR for transfer to other entities even within China.

The Entity List FDP rule for Footnote 4 Entities is similar to the measures already in place for Footnote 1 Entities, with an important distinction: the FDP rule for Footnote 4 Entities covers products that are the direct product of U.S. origin *encryption-controlled technology or software*, while the FDP rule for Footnote 1 Entities does not. The inclusion of encryption-related software and technologies is significant because many items may be the product of encryption software and technology subject to the EAR. Under this new restriction, certain items that are the direct product of encryption software and technology subject to the EAR cannot be supplied to Footnote 4 Entities without a license.

License Requirements

Regional Stability Controls and Limited License Exceptions

As described above, the Advanced Computing and Semiconductor Manufacturing Rule adds additional CCL-based RS restrictions for newly added or revised ECCNs related to semiconductors. These restrictions mean that there is a licensing requirement to transfer any such items to China. Importantly, though, the license requirement does not apply to a “deemed export,” which is the release to a foreign national in the United States of technology or source code. Thus, no license will be required for the release of controlled technology or source code to Chinese nationals outside of China.

License applications will be reviewed with a policy of denial, except that license applications for semiconductor manufacturing items destined for end users in China that are headquartered in the United States or in a “Country Group A:5 or A:6,” which are generally allies of the United States, will be considered on a case-by-case basis.⁹ In other words, the Chinese operations of U.S. and U.S.-allied companies are eligible for authorizations to carry on manufacturing of semiconductor products that fall within the scope of the new restrictions, but those operations must be specifically approved by BIS. Uncertainty about whether such approval will be given is already causing disruption and confusion for these companies.

The EAR also includes a series of “license exceptions,” providing that if the product, end user, or end use meets specified criteria, then the license requirement is removed for the qualifying export transaction. BIS’s new rule places strict export license limitations on the supply of semiconductor manufacturing items to China. Semiconductor manufacturing equipment controlled under the new ECCNs will be eligible only for a specified portion of one particular license exception (License Exception “Governments, International organizations, International Inspections Under the Chemical Weapons Convention, and the International Space Station” or “License Exception GOV”) that authorizes exports, reexports, and transfers (in-country) made by or consigned to a department or agency of the U.S. Government.

The Advanced Computing and Semiconductor Manufacturing Rule also restricts license exception eligibility for integrated circuits and associated advanced computing items. Transactions involving these items will be eligible only for three license exceptions: (i) License Exception Servicing and replacement

of parts and equipment ("RPL"); (ii) specified provisions of License Exception GOV; and (iii) License Exception Technology and Software – Unrestricted (TSU).

Semiconductor Manufacturing End-Use Controls & U.S. Person Restrictions

BIS's new rule also places end-use restrictions on the export, reexport, or transfer (in-country) of certain items subject to the EAR based on end uses involving semiconductor manufacturing. Specifically, BIS imposes a license requirement on:

- Any item subject to the EAR when there is knowledge that the item is destined for end use in the development or production of integrated circuits at a semiconductor fabrication facility located in China that fabricates integrated circuits meeting specified thresholds: (i) logic chips with non-planar transistor architectures (i.e., FinFET or GAAFET) of 16nm or 14nm, or below; (ii) DRAM memory chips of 18nm half-pitch or less; or (iii) NAND flash memory chips with 128 layers or more.
- Certain items subject to the EAR related to semiconductor manufacturing when there is knowledge that items will be used in the development or production of integrated circuits at any semiconductor fabrication facility located in China, even if one does not know whether such semiconductor fabrication facility fabricates integrated circuits that meet any of the above mentioned thresholds; and,
- Any item subject to the EAR when there is knowledge that the item will be used in the development or production in China of any controlled semiconductor manufacturing equipment or related component parts.

There are no license exceptions available under these end-use controls.

Further, the Export Control Reform Act of 2018, which revised the legislative authorization for the EAR, authorized BIS to restrict specified U.S. person¹⁰ activities, including providing support for certain military-intelligence related end uses and end users without a license. Through the Advanced Computing and Semiconductor Manufacturing Rule, BIS formally notifies U.S. persons that these prohibitions extend to the provision of support to the development or production of integrated circuits at certain Chinese semiconductor fabrication facilities. Notably, these restrictions apply regardless of whether the item being supported by the U.S. person is considered subject to the EAR.

To accomplish these expanded restrictions, BIS' new rule "informs" U.S. persons that a license is required for shipping, transmitting, or transferring (in-country) to or within China any item – whether or not it is subject to the EAR – described in the three bullet points above. No license exception applies to these prohibitions; however, support may be provided without licensing by employees of a department or agency of the U.S. government under certain, limited circumstances. This rule is already giving rise to significant confusion, as U.S. persons working in the Chinese semiconductor sector try to determine whether they are now legally prohibited from doing their jobs.

There is a presumption of denial for license applications, except for applications for the export, reexport, or transfer (in-country) of items to end users in China that are headquartered in the United States or in a Country Group A:5 or A:6 country, which will be considered on a case-by-case basis.

Supercomputer End-Use Controls

The Advanced Computing and Semiconductor Manufacturing Rule further expands and adds end use-based license restrictions on certain items when exported, reexported, or transferred (in-country) for use in or with supercomputers in China. More precisely, licensing will be required when there is “knowledge” that:

1. An item will be used in the development, production, use, operation, installation (including on-site installation), maintenance (checking), repair, overhaul, or refurbishing of a supercomputer located in or destined to China; or an item will be incorporated into, or used to develop or produce any component or equipment that will be used in a supercomputer located in or destined to China; and
2. The item is: (i) an integrated circuit subject to the EAR (including through the Supercomputer FDP Rule) and classified under specified ECCNs; or (ii) a computer, electronic assembly, or component subject to the EAR and classified under specified ECCNs.

There are no license exceptions available under these end-use controls, and there is a presumption of denial for license applications under this provision.

A Reprieve: The Temporary General License

In order to mitigate any supply chain disruptions, in the Advanced Computing and Semiconductor Manufacturing Rule, BIS established a temporary general license (“TGL”). This TGL authorizes, until April 7, 2023, exports, reexports, in-country transfers, and exports from abroad destined to, or within, China by companies headquartered in specified countries, in order to continue or engage in integration, assembly (mounting), inspection, testing, quality assurance, and distribution of advanced integrated circuits now controlled on the CCL.

Notably, the TGL does not authorize the export, reexport, transfer (in-country) of restricted items to end users or ultimate consignees within in China. It also does not overcome any license requirements set forth in the EAR involving an entity on the Entity List or other prohibited end use and end user restrictions.

Conclusion

Companies should take care to evaluate their supply chains and connections to Chinese entities engaged in this space, and be prepared that increasing restrictions may disrupt their flow of inputs as geopolitical tensions rise. As BIS described, due diligence becomes increasingly important as well, particularly as any restrictions that involve “knowledge” encompass “not only positive knowledge that the circumstance exists or is substantially certain to occur, but also an awareness of a high probability of its existence or future occurrence” pursuant to definitions contained within the EAR.

Though BIS’ two rules are long and comprehensive, they are fairly narrow in scope and targeted principally at technology that the U.S. Government has identified as important to its national security. These measures are aimed specifically at artificial intelligence capabilities, which BIS called in its public briefing on the new rules “the most powerful tool in centuries.” As the world becomes more interconnected, the United States is relying increasingly on sanctions and export controls to “ring-fence” and protect key technologies and to preserve its place as a global superpower.



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¹ <https://www.federalregister.gov/d/2022-21714>.

² <https://www.federalregister.gov/d/2022-21658>.

³ Applications for a license are usually subject to a policy of denial. Notably, BIS Entity List restrictions apply only to the party specifically named on the list. They do not apply to subsidiaries, parent companies, and other legally distinct affiliates of a listed entity. However, any person dealing with an affiliate of a company named on the BIS Entity List must ensure that the affiliate is not acting as an “agent” or “front” for the listed entity, thereby facilitating a prohibited transaction, as that could be a violation of the EAR’s prohibitions on causing, aiding, or abetting a violation. Deemed Exports FAQs, Bureau of Industry and Security, <https://www.bis.doc.gov/index.php/policy-guidance/deemed-exports/deemed-exports-faqs/faq/134-do-the-license-requirements-and-policies-of-the-entity-list-apply-to-separately-incorporated-subsidiaries-partially-owned-subsidiaries-or-sister-companies-of-a-listed-entity>.

⁴ 15 CFR § 744.11(b).

⁵ Bureau of Industry and Security, Revisions to the Unverified List; Clarifications to Activities and Criteria that May Lead to Additions to the Entity List (Oct. 13, 2022), <https://www.federalregister.gov/d/2022-21714> (emphasis added).

⁶ Relevant parties to a transaction are defined in § 748.5 of the EAR. Parties include purchasers, intermediate consignees, ultimate consignees, and end users, among others.

⁷ Notably, the new CCLs described above will also restrict the export, reexport, and transfer (in-country) of those goods to Russia, because all items on the CCL currently require a license for transfer to Russia.

⁸ A model certificate will be available at supplement no. 1 to EAR part 734.

⁹ Country Groups A:5 and A:6 are identified in Supplement No. 1 to Part 740 of the EAR.

¹⁰ “U.S. Person” includes any individual who is a citizen of the United States, a permanent resident alien of the United States, protected individual as defined by 8 U.S.C. 1324b(a)(3), no matter where located; U.S. legal entities and their foreign branches; and, persons present in the United States.

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