

The U.S. Export Control System and the Export Control Reform Act of 2018

Updated June 7, 2021

Congressional Research Service

<https://crsreports.congress.gov>

R46814



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Balancing U.S. national security and export competitiveness in U.S. export control policy has been a complex and challenging issue for Congress and the executive branch for a number of decades. Through the Arms Export Control Act (AECA), the International Emergency Economic Powers Act (IEEPA), the Export Controls Reform Act (ECRA), and other authorities, the United States restricts the export of certain goods, including defense articles; dual-use goods and technology; nuclear materials and technology; and items that would assist in the proliferation of nuclear, chemical, and biological weapons or the missile technology used to deliver them. U.S. export controls are also used to restrict exports to certain countries on which the United States imposes economic sanctions. Additionally, the United States participates in several multilateral export control regimes.

The U.S. export control regime comprises several different licensing and enforcement agencies. Exports of dual-use goods and technologies—as well as some defense articles—are licensed by the Department of Commerce, munitions are licensed by the Department of State, and restrictions on exports based on U.S. sanctions are administered by the Department of the Treasury. In addition, the Department of Defense plays a key role in evaluating licenses referred to it by these agencies. Units of the Department of Homeland Security (DHS) and the Department of Justice issue criminal penalties for violations of export control regulations.

ECRA (, Subtitle B, Part I), enacted in 2018, provides broad legislative authority to the President to implement dual-use export controls. Unlike previous export control statutes, ECRA has no expiration date. Among its provisions, ECRA requires

- the President to establish an interagency process to establish new controls on emerging and foundational technologies;
- a review of license requirements for exports, reexports, or in-country transfers of items to countries subject to a comprehensive United States arms embargo, including China; and
- licensing procedures to
 - assess the impact of a proposed export on the U.S. defense industrial base;
 - examine foreign ownership interests of the consignee; and
 - review and evaluate the interagency export licensing referral, review, and escalation procedures.

ECRA reflects congressional concerns about dual-use technology trade and concurrent concerns about foreign investment in sensitive sectors resulting in simultaneous reforms of the U.S. foreign investment review process. The Trump Administration used the export control system primarily to counter China-related technology concerns. These actions included new restrictions on the telecommunications firm Huawei as part of a wider effort to block the adoption of Huawei technology in world-wide 5G networks; efforts to counter China's military-civilian fusion program (which seeks to apply commercial technologies toward military advances); termination of separate and differential treatment of Hong Kong in export control matters; and efforts to restrict U.S. technologies used in surveillance and repression.

Recently, some Members of Congress have expressed interest in thinking broadly about how congressional delegations of trade authority, including export controls, should be used as part of a coherent economic and national security policy. Additionally, although U.S. export controls may prevent certain U.S. technologies from ending up in certain countries, such controls may be both ineffective if they are available from foreign sources and also disadvantage U.S. firms. As such, Congress might also consider the role multilateral cooperation might play in any export control strategy.

R46814

June 7, 2021

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Introduction

The United States restricts the export of defense articles and services; dual-use goods and technology; certain nuclear materials and technology; and items that would assist in the development of nuclear, chemical, and biological weapons or the means to deliver them. A defense item is defined by regulation as one that “Meets the criteria of a defense article or defense service on the U.S. Munitions List” or “Provides the equivalent performance capabilities of a defense article” on that list.¹ Dual-use goods are commodities, software, or technologies that have both civilian and military applications.²

U.S. export controls conform to the requirements of several multilateral export control regimes in which the United States participates. In addition, the United States restricts exports to certain countries on which the United States imposes economic sanctions, such as Cuba, Iran, and Syria. Through the Export Control Reform Act (ECRA), the Arms Export Control Act (AECA), the International Emergency Economic Powers Act (IEEPA), and other authorities, Congress has delegated to the executive branch some of its express constitutional authority to regulate foreign commerce by controlling exports.

The U.S. export control system spans several different licensing and enforcement agencies. The Department of Commerce regulates and licenses exports of dual-use goods and technologies—as well as some defense articles. The Department of State regulates and licenses exports of munitions. The Department of the Treasury administers restrictions on exports based on U.S. sanctions. Administrative enforcement of export controls is conducted by these agencies, while criminal penalties are issued by units of the Department of Homeland Security (DHS) and the Department of Justice.

ECRA, enacted in 2018, provides broad legislative authority to the President to implement dual-use export controls. The law repealed the Export Administration Act of 1979 (EAA 1979; P.L. 96-72), which was the underlying statutory authority for dual-use export controls until it last expired in 2001. After EAA 1979’s expiration, the export control system created pursuant to that law was continued by a presidential declaration of a national emergency and the invocation of the IEEPA. In contrast to its predecessors, ECRA has no expiration date. Among its provisions, ECRA requires

- the President to establish an interagency process to establish new controls on emerging and foundational technologies;
- a review of license requirements for exports, reexports, or in-country transfers of items to countries subject to a comprehensive United States arms embargo; and
- licensing procedures to
 - assess the impact of a proposed export on the U.S. defense industrial base;
 - examine foreign ownership interests of the consignee; and
 - review and evaluate the interagency export licensing referral, review, and escalation procedures.

The Trump Administration used the export control system to counter several Chinese policies the Administration characterized as contrary to U.S. interests. These U.S. measures include restrictions on the telecommunications firm Huawei as part of a wider effort that has included

¹ *International Traffic in Arms Regulations*, 22 C.F.R. 120.3.

² Export Control Reform Act (ECRA) §1741(2), P.L. 115-232 (August 13, 2018), codified as amended at 50 U.S.C. §4801(2).

blocking the adoption of Huawei technology in world-wide 5G networks; countering China's military-civilian fusion program; ending the differential treatment of Hong Kong in export control matters; and countering human rights abuses in Xinjiang province.

Brief History of Export Controls

The United States has a long history of establishing (and circumventing) regimes controlling the export of arms and technologies.³ From the earliest days of the republic, the United States has periodically limited exports, particularly during times of war or armed conflict.⁴ The Constitution prohibits Congress from levying duties on exports and thus limitations on exports of arms and technologies have been regulated by quantitative restrictions and export bans.⁵

Despite examples of early use, the imposition of such controls was rare for much of U.S. history and usually limited to times of armed conflict.⁶ The modern era of export controls in the United States began in 1940, when Congress authorized the President to control the export of military equipment and munitions.⁷ With the entry of the United States into the Second World War, Congress expanded this authorization to include civilian goods.⁸

Dual-Use Controls

Following the end of the Second World War, Congress began to curtail some of its authorizations for the President to make use of various economic controls.⁹ While Congress declared that it was its "general policy" to "eliminate emergency wartime controls," it continued to extend the President's authority to control exports, but with definite expiration dates.¹⁰ The initial rationale for the extensions was that, owing to the war's destruction of the industrial and agricultural capacity of Europe and East Asia, U.S. goods were in high demand. By retaining controls on exports, Congress sought to "reduce the inflationary effect of abnormal foreign demands upon [U.S.] supplies."¹¹ Early post-war export controls were thus used primarily for economic rather than foreign policy or national security reasons.

³ In the eighteenth century, for example, Britain banned the export of machinery involved in woolen, silk, cotton, and linen manufacturing. 23 Geo. 2, c. 13 (1749); 22 Geo. 3, c. 60 (1782). Nevertheless, several prominent Americans with the encouragement of Alexander Hamilton, tried to circumvent those bans to bolster the manufacturing capacity of the United States. See David J. Jeremy, "British Technology Transmission to the United States," *Business History Review* 47, no. 1 (Spring 1973).

⁴ See, e.g., Continental Congress, "Articles of Association," October 20, 1774, art. 4, *Journals of the Continental Congress* 1 (Washington, DC: GPO, 1904), p. 77: "If the said acts...are not repealed, we will not directly or indirectly, export any merchandise or commodity whatsoever to Great Britain, Ireland, or the West-Indies, except rice to Europe;" Embargo Act, P.L. 10-5 (December 22, 1807), 2 Stat. 451; Trading with the Enemy Act ("TWEA"), P.L. 65-91 (October 6, 1917), 40 Stat. 411.

⁵ U.S. Const. art. I, §9, cl. 5: "No Tax or Duty shall be laid on Articles exported from any State."

⁶ See, e.g., TWEA.

⁷ P.L. 76-703 (July 2, 1940), 54 Stat. 712, 714.

⁸ P.L. 77-638 (June 30, 1942) §6(a), 56 Stat. 463 authorized the President to restrict the export of "any articles, technical data, materials or supplies."

⁹ See, e.g., First Decontrol Act, P.L. 80-29 (March 31, 1947), 61 Stat. 34; Second Decontrol Act, P.L. 80-189 (July 15, 1947), 61 Stat. 321.

¹⁰ Second Decontrol Act §2(b), 4, 61 Stat. at 322-323.

¹¹ U.S. Congress, Senate Committee on Banking and Currency, *Export Control Act of 1949*, report to accompany S. 548, 81st Cong., 1st sess., S.Rept. 81-31 (Washington, DC: GPO, 1949), p. 2.

Cold War Controls

By the late 1940s, relations between the United States and the Soviet Union became increasingly strained. As various officials, scholars, and intellectuals began to articulate the policy that would become known as “containment,”¹² some Members of Congress thought that export controls could be a valuable foreign policy and national security tool, particularly as technological development took on an increasingly prominent role in defense planning.¹³ In 1949, Congress enacted the Export Control Act (ECA 1949) (P.L. 81-11), “the first comprehensive system of export controls ever adopted by the Congress in peace time,” according to one source.¹⁴

In ECA 1949, Congress declared that it was now the policy of the United States to use export controls for three reasons: “(a) to protect the domestic economy [...]; (b) to further the foreign policy of the United States [...]; and (c) to exercise the necessary vigilance over exports from the standpoint of their significance to the national security.”¹⁵ This established the three-pronged strategy that underlays the modern regime. While initially scheduled to lapse in 1951, the Korean War and other Cold War foreign policy concerns resulted in the renewal of ECA 1949 largely without amendment for almost twenty years.¹⁶

Realizing that export controls with foreign policy and national security goals would be ineffective without multilateral coordination, the United States and its major allies in Europe established the Consultative Group, a body of senior export control officials to establish lists of embargoed items, in 1949. Two committees emerged out of the Consultative Group. The Coordinating Committee (COCOM), which was formed in 1949, was charged with coordinating export restrictions directed at the Soviet Union and Eastern Europe. The China Committee (CHINCOM), which was formed in 1952, coordinated restrictions directed at the People’s Republic of China. In order to encourage compliance with export controls by other friendly countries, Congress passed the Mutual Defense Assistance Control Act of 1951, which required that recipients of U.S. foreign aid comply with U.S. export controls.¹⁷

Reexamination and Liberalization

With the initial stirring of the U.S.-Soviet “detente” in the late 1960s, the first serious reexamination and revision of the U.S. export control system occurred. The growing importance of trade to the economies of the United States and its allies, as well as differences in the approach among COCOM participants to trade with Communist countries in Eastern Europe, increased

¹² See, e.g., X [George F. Kennan], “The Sources of Soviet Conduct,” *Foreign Affairs* 25, no. 4 (July 1947). For an overview of the development in the late 1940s of the strategy of containment, see John Lewis Gaddis, *Strategies of Containment* (Oxford: Oxford University Press, 2005).

¹³ U.S. Congress, *Export Control Act of 1949*, p. 3. See Michael Mastanduno, “Trade as a Strategic Weapon: American and Alliance Export Control Policy in the Early Postwar Period,” *International Organization* 42, no. 1 (Winter 1988).

¹⁴ Harold J. Berman and John A. Garson, “United States Export Controls—Past, Present, and Future,” *Columbia Law Review* 67, no. 5 (May 1967), p. 792.

¹⁵ Export Control Act of 1949, P.L. 81-11 (February 26, 1949 §2), 63 Stat. 7.

¹⁶ See, e.g., Joint Resolution of May 16, 1951, ch. 83, 65 Stat. 43; Act of June 16, 1953, ch. 116, 67 Stat. 62; Act of June 29, 1956, ch. 473, §1, 70 Stat. 407; Act of June 25, 1958, P.L. 85-466, 72 Stat. 220; Act of May 13, 1960, P.L. 80-464, 74 Stat. 130; Act of July 1, 1962, P.L. 87-515, §1, 76 Stat. 172; Act of June 30, 1965, P.L. 89-63, 79 Stat. 209; Export Administration Act of 1979 (EAA 1979), P.L. 96-72 (September 29, 1979), 93 Stat. 503.

¹⁷ P.L. 82-212 (October 26, 1951) §101, 65 Stat. 644, 645: “It is further declared to be the policy of the United States that no military, economic, or financial assistance shall be supplied to any nation unless it applies an embargo on such shipments to any nation or combination of nations threatening the security of the United States, including the Union of Soviet Socialist Republics and all countries under its domination.”

pressure to liberalize the U.S. export control regime.¹⁸ U.S. export controls had long been more restrictive than the multilateral controls established by COCOM and policymakers and industry leaders were increasingly concerned with the economic impact of the stricter approach of the United States.¹⁹ The stricter U.S. controls, some Members of Congress and industry experts argued, put disadvantaged U.S. companies with respect to their European and Japanese competitors.²⁰

In response to these concerns, Congress passed the Export Administration Act of 1969 (EAA 1969) (P.L. 91-184) to replace the near-embargo characteristic of ECA 1949. Although the new act still authorized the President to restrict exports of goods that were available from other countries, it required the administration to report the reasons for such a restriction to Congress.²² It also required the government to inform an exporter the reasons why a license was denied, considerations that may cause a license to be denied, or the reasons for “undue delay” in a license application.²³

Foreign Availability

A long-standing concern with export controls has been their effect on U.S. competitiveness when a comparable good is available abroad. In such situations the U.S. export control both fails to achieve its ends while also limiting the ability of U.S. firms to compete in the controlled market. As such, since 1969, the Congress has directed the government to consider whether a good is available when determining whether to control the good. Current regulations provide that “Foreign availability exists when the Secretary determines that an item is comparable in quality to an item subject to U.S. national security export controls, and is available-in-fact to a country, from a non-U.S. source, in sufficient quantities to render the U.S. export control of that item or the denial of a license ineffective.”²¹

Throughout the 1970s, Congress continued to liberalize export controls. In 1977, for example, Congress declared that a country’s status as a Communist country would no longer determine whether it was subject to export control restrictions. Rather the government was to take into account such factors as “the country’s present and potential relationship to the United States, its present and potential relationship to countries friendly or hostile to the United States, its ability and willingness to control retransfers of United States exports in accordance with United States policy.”²⁴

Export Administration Act of 1979 (EAA 1979), from which the present-day Export Administration Regulations (EAR) are based, replaced EAA 1969 and further liberalized the U.S.

¹⁸ Timothy Aeppel, “The Evolution of Multilateral Export Controls: A Critical Study of the CoCom Regime,” *Fletcher Forum* 9 (1985), pp. 109-110.

¹⁹ Ibid.

²⁰ U.S. Congress, House Committee on Banking and Currency, Subcommittee on International Trade, *To Extend and Amend the Export Control Act of 1949*, hearing on H.R. 4293, 91st Cong., 1st sess., May 22-July 4 (Washington, DC: GPO, 1969), p. 15: “While the U.S. Government asserts that it does not intend to retain controls which are ineffective and will license items and technology which are competitively available, the evidence of such availability is difficult to come by. If there is a distinct quality difference in favor of the U.S. product or technology, the U.S. officials may claim that it is significant enough to deny to the Soviet (or other) country. But, company officials reply that it is precisely that difference which draws the business to them, and if they wait until the others have closed the gap, they will be excluded from the market now and on a longer-term basis.”

²¹ 15 C.F.R. §768.2.

²² Export Administration Act of 1969, P.L. 91-184 (December 30, 1969) §4(b), 83 Stat. 841, 842: “whenever export licenses are required on the ground that considerations of national security override considerations of foreign availability, the reasons for so doing shall be reported to the Congress....”

²³ P.L. 91-184, §9.

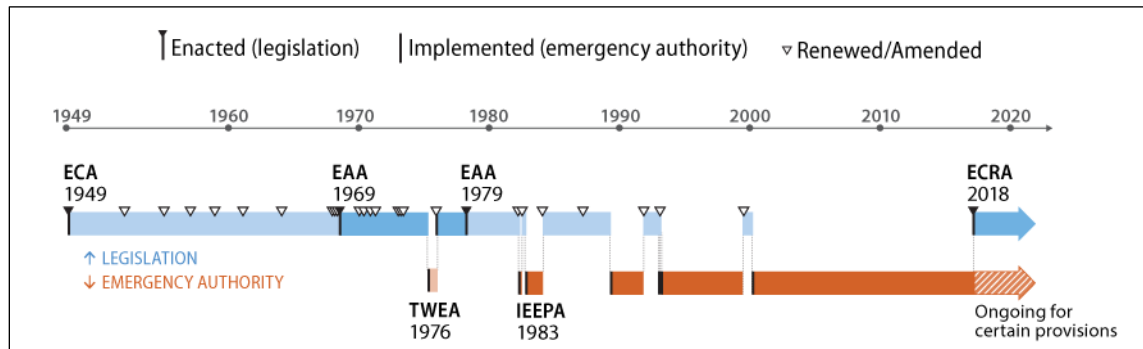
²⁴ Export Administration Amendments of 1977, P.L. 95-52 (June 22, 1977) §103; 91 Stat. 235, 236.

export control regime.²⁵ The collapse of the Soviet Union in 1989, an event partially attributable to the success of U.S. cold war export control policy, marked a dramatic change in the nature of the external threat the United States. The George H. W. Bush Administration's Enhanced Proliferation Control Initiative (EPCI), in part, shifted the focus of export controls to controlling the spread of weapons of mass destruction through end-use and end-user based controls ("catch-all controls") on chemical, biological, and missile, development and proliferation.²⁶

Beginning in the late 1970s, Congress increasingly did not renew export control authorities before its authority lapsed. When EAA 1969 lapsed in 1976, President Gerald Ford kept the controls in place by invoking his authority under the Trading with the Enemy Act of 1917 (TWEA).²⁷ Congress eventually renewed EAA 1969 and created a new comprehensive regime with EAA 1979. Congress again let export control authorities lapse periodically throughout the 1980s and 1990s. Each time, Presidents kept the controls in place by invoking IEEPA (which had replaced TWEA in 1977).²⁸ Aside from a 10-month reauthorization of EAA 1979 from November 2000–August 2001,²⁹ the export control system was maintained by IEEPA for nearly 24 years, from 1994 until the passage of ECRA in 2018.³⁰ (Figure 1).

The dissolution of COCOM in 1994 and its replacement by the Wassenaar Arrangement in 1997, also significantly changed the export control environment. This multilateral arrangement is more loosely structured than COCOM and members do not have the authority to block transactions of other members. Other multilateral regimes cover additional proliferation-sensitive items and technologies.³¹

Figure 1. Authority for Export Controls



Source: CRS.

²⁵ Export Administration Act of 1979, P.L. 96-72 (September 29, 1979).

²⁶ Department of State, "Catch-all Controls," available at <https://2009-2017.state.gov/strategictrade/practices/c43179.htm>.

²⁷ Executive Order 11940, "Continuing the Regulation of Exports," 41 *Federal Register* 43707, October 4, 1976.

²⁸ Executive Order 12444, "Continuation of Export Control Regulations," 48 *Federal Register* 56563, December 20, 1983; Executive Order 12470, "Continuation of Export Control Regulations," March 30, 1984; Executive Order 12730, "Continuation of Export Control Regulations," September 30, 1990; Executive Order 12923, "Continuation of Export Control Regulations," 59 *Federal Register* 34551, June 30, 1994; Executive Order 12924, "Continuation of Export Control Regulations," 59 *Federal Register* 43437, August 19, 1994; Executive Order 13222, "Continuation of Export Control Regulations," 66 *Federal Register* 44025, August 17, 2001.

²⁹ To provide for increased penalties for violations of the Export Administration Act of 1979, and for other purposes. P.L. 106-508 (November 13, 2000); 114 Stat. 2360.

³⁰ Executive Order 12924; Executive Order 13222.

³¹ See "Multilateral Control Regimes" below.

Export Control Reform Initiative

In 2009, then-President Obama announced the launch of a comprehensive review of the U.S. export control system known as the Export Control Reform Initiative (ECRI), which established four goals: a single licensing agency for dual-use items and munitions, a single control list, a single agency for export control enforcement, and a single integrated information technology system.³² While the initiative arguably did not achieve these four goals, the process made significant changes to the U.S. export control regime, including

- Rationalizing the Commerce Control List (CCL) and the U.S. Munitions List (USML) by removing items (parts and components) determined as nonsensitive from the USML and placing them on the CCL.
- Creating an Export Enforcement Coordination Center (EECC) to deconflict and coordinate enforcement activities.
- Adopting a single information technology system to facilitate the submission and processing of licenses.³³

Overview of the Current System

This section describes the characteristics of the U.S. export control systems concerning military, dual-use, and nuclear items (See **Appendix A**). Several different government agencies administer the U.S. export control system depending on characteristics of the item controlled.

Administration

The Bureau of Industry and Security (BIS) in the Department of Commerce administers the export licensing and enforcement functions of the dual-use export control system. The Reagan Administration detached those functions from the International Trade Administration (ITA) in 1985 in order to separate them from ITA's export promotion functions. BIS also enforces U.S. anti-boycott regulations concerning the Arab League boycott against Israel.³⁴

Implementing Regulations

ECRA is implemented by the Export Administration Regulations (EAR; 15 C.F.R. 730 *et seq.*). EAR set forth licensing policy for goods and destinations, the applications process used by exporters, and the CCL, which is the list of specific commodities, technologies, and software controlled by EAR. The CCL has nine categories, which are divided into functional groups. (**Figure 2.**)

³² White House, "Fact Sheet on the President's Export Control Reform Initiative," press release, April 10, 2010, available at <https://obamawhitehouse.archives.gov/the-press-office/fact-sheet-presidents-export-control-reform-initiative>.

³³ U.S. Department of Commerce, "About Export Control Reform," October 7, 2015, available at <https://2016.export.gov/ecr/index.asp>.

³⁴ For more information, see CRS Report RL33961, *Arab League Boycott of Israel*, by Martin A. Weiss.

Figure 2. CCL Categories and Functional Groups

CCL CATEGORIES		CCL FUNCTIONAL GROUPS	
1	Nuclear materials, facilities, and equipment	A	Equipment, assemblies, and components
2	Materials, organisms, microorganisms, and toxins	B	Test, inspection, and production equipment
3	Materials processing	C	Materials
4	Electronics	D	Software
5 Part 1	Computers	E	Technology
5 Part 2	Telecommunications and information security		
6	Lasers and sensors		
7	Navigation and avionics		
8	Marine		
9	Propulsion systems, space vehicles, and related equipment		

Source: CRS.

Each controlled item has an export control classification number (ECCN) based on the above categories and functional groups. Each ECCN is accompanied by a description of the item and the reason for control. In addition to discrete items on the CCL, nearly all U.S.-origin items are “subject to the EAR.” Such items may be restricted to a destination based on the end use or end user of the product. For example, a license to export a commodity that is not on the CCL may be denied if the good is destined for a military end use or an entity known to be engaged in weapons proliferation.

Deemed Exports

Technology, know-how, and unencrypted source code are “deemed” to have been exported when released to a foreign national within the United States. Controls on such knowledge transfers are authorized by ECRA and regulated by EAR. EAR requires that a license must be obtained by a U.S. entity to transfer technology to a foreign national in the United States if the same transfer to the most recent country of citizenship or permanent residency of the foreign national would require a license. BIS conducts outreach to academic and research institutions to inform them of this licensing responsibility. In FY2020, it initiated 77 enforcement actions involving allegations of deemed export licensing violations. In 2019, BIS reviewed 1,320 deemed export licenses (4% of the total licenses submitted to BIS) and reports that nearly 44.2% of deemed licenses reviewed were for Chinese nationals.

Sources: ECRA, Sec. 1742; EAR 15 C.F.R. 734.13; and BIS, FY2020 Annual Report, p. 20, and 2019 Statistical Analysis of BIS Licensing—Deemed Exports (latest figures available).

Licensing Policy

EAR set out the licensing policy for dual-use and certain defense articles. The regulations control items for reasons of national security, foreign policy, or short supply. National security controls are based on a common multilateral control list; however, the licensing policy applied to each country is based on U.S. policy. Foreign policy controls may be unilateral or multilateral. EAR unilaterally control items for antiterrorism, regional stability, or crime control purposes.

Antiterrorism controls proscribe nearly all exports to North Korea and three countries designated as state sponsors of terrorism by the Secretary of State—Cuba, Iran, and Syria. EAR also impose foreign policy controls on encryption items and on “hot section technology.” EAR include “enhanced controls” on hot section technology and require a license “for exports and reexports to all destinations, except Canada.” The U.S. government reviews license applications for such

technology “on a case-by-case basis to determine whether the proposed export or reexport is consistent with U.S. national security and foreign policy interests.”³⁵ Foreign policy-based controls are also based on adherence to multilateral nonproliferation control regimes.³⁶

License Review Procedures

EAR establishes policies and procedures for the review of license applications and the resolution of interagency disputes. (**Figure 4**).³⁷ These procedures confer to the Secretary of Commerce (the Secretary) the power to review and determine the disposition of export licenses. The Departments of State, Defense, and Energy have authority to review any licenses submitted, and the Secretary may refer licenses to others as he or she deems appropriate. These agencies may waive their right to review license applications for certain commodities or to certain destinations.

600 Series and Strategic Trade Authorization

The subcategory of the “600 series” Export Control Classification Numbers (ECCNs) and the Strategic Trade Authorization License Exception were both key elements of the Export Control Reform Initiative (ECRI).

600 Series. As part of the ECRI, the Obama Administration moved some items from the USML to the CCL. An outcome of this process was BIS’s 2013 creation of the “600 Series” subcategory of ECCNs for each CCL category. Exports of most 600-series items require a license to all destinations except Canada, unless a license exception is available. Licenses for most reexports of 600 Series items are required if the items contain over 25% controlled U.S. content. 600 Series items are subject to a general policy of denial to countries subject to a U.S. or U.N. arms embargo. Such items are also subject to the prohibition on Defense Department procurement of “goods and services” on the USML “from any Communist Chinese military company” mandated by the National Defense Authorization Act for Fiscal Year 2006 (P.L. 109-163). Section 38(f)(6) of the AECA requires that “any major defense equipment” on the 600 series “shall continue to be subject to” several “notification and reporting requirements” of the AECA and the Foreign Assistance Act of 1961 (P.L. 87-195).

Strategic Trade Authorization License Exception. ECRI included a new license exception known as the Strategic Trade Authorization (STA), which was designed to facilitate transfers of certain CCL items to low-risk destinations and to promote interoperability with allies. In order to use the STA, exporters must provide foreign consignees with the relevant ECCNs for the items intended for export. Exporters must also obtain from the foreign consignee a statement acknowledging the consignee’s understanding and willingness to comply with the license exception requirements. Recipients may reexport items exported under the STA, “provided the reexport is done in accordance with EAR, including meeting the terms of the original STA or other authorization under which the items were received.”

The STA exception covers certain exports to two tiers of countries. Tier 1 countries are eligible for many CCL items subject to multiple control categories, whereas Tier 2 countries are only eligible for national security-controlled items.

The introduction of these changes has had an impact on the workloads of the respective licensing agencies. The removal of 600 series items from ITAR licensing requirements dropped DDTC’s yearly caseload by 56.2% from 2010 to 2018 (see **Figure 3**). Conversely, BIS processed 54.6% more licenses in that same period. However, the availability of license exception STA meant that not all previously required licenses are necessary under EAR. Thus, total licensing under the two regulatory regimes dropped from 104,133 to 71,294.

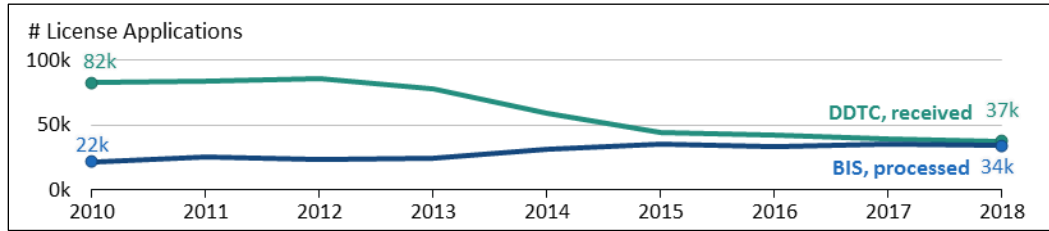
Source: 600 Series reexport information from Commerce Department, Bureau of Industry and Security (BIS) Responses to Congressional Research Service (CRS) Questions—April 20, 2021.

³⁵ EAR, 15 C.F.R. 742.14.

³⁶ See “Multilateral Control Regimes,” below.

³⁷ EAR, 15 C.F.R. 750.4. Procedures currently employed were created by Executive Order 12981, “Administration of Export Controls,” 60 *Federal Register* 62981, December 5, 1995, as amended by Executive Order 13020, “Amendment to Executive Order 12981,” 61 *Federal Register* 54079, October 12, 1996.

Figure 3. Yearly License Applications, Dual Use and Munitions
2010-2018



Sources: BIS; DDTC.

Notes: BIS License Applications Processed; DDTC License Applications Received.

Within nine days of a license application's registration, the Secretary must seek additional information, refer the application to other agencies, assure the security classification is correct, return the application if a license is not required, grant the application, or notify the applicant of denial. In case of review by another agency, the reviewing agency must request any additional information from the Secretary within 10 days. After reviewing the file, the reviewing agency may request additional information, which the Secretary shall request from the applicant.

Within 30 days of receipt of the application, or of requested review information, the agency must recommend approval or denial of the application, and provide regulatory or statutory justification for a denial. If an agency fails to provide a recommendation within 30 days, the agency is deemed to have no objection to the decision of the Secretary. However, the license application is subject to actions that can 'stop the clock' on the license application.

Dispute Resolution

There is a three-level interagency dispute resolution mechanism. The top level is the Export Administration Review Board (EARB).³⁸ The board consists of the secretary, who serves as chair, and the Secretaries of State, Defense, and Energy. The Chairman of the Joint Chiefs of Staff and the Director of the Central Intelligence Agency are nonvoting members. The board may also invite the heads of other agencies to participate as appropriate. Under the EARB is the Advisory Committee on Export Policy (ACEP), which consists of the Assistant Secretary for Export Administration from Commerce, who serves as chair, as well as the relevant assistant Secretaries and appropriate officials from the agencies represented in the EARB. The Operating Committee (OC) of the ACEP is the third tier made up of representatives of the departments listed above. The chair is selected by the Secretary of Commerce and serves as the Executive Secretary of ACEP.

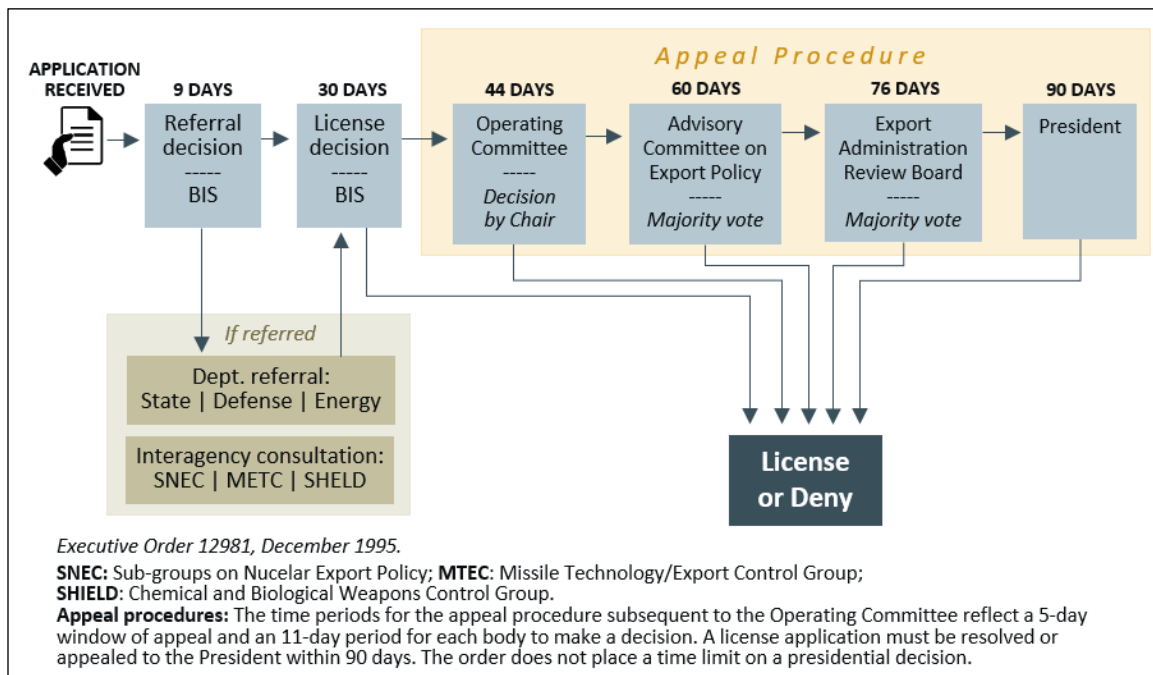
The dispute resolution process begins with the OC. The chair reviews the recommendations of the examining departments and informs them of his decision within 14 days of the deadline for receiving agency recommendations. Any reviewing department can appeal the decision of the chair to the ACEP. An appeal may be made within five days by an appointee of the President and must state the statutory or regulatory basis for the appeal. The ACEP members review recommendations and information and vote on the application within 11 days of such an appeal. Within five days of a majority decision of the ACEP, a department head of a dissenting agency may appeal the decision to the secretary. Within 11 days of such an appeal, the EARB must decide by majority vote on the disposition of the application. An EARB member may appeal this

³⁸ Executive Order 11533, "Administration of the Export Administration Act of 1969," 35 *Federal Register* 8799, June 4, 1970; amended by Executive Order 12002, "Administration of the Export Administration Act of 1969, as amended," 42 *Federal Register* 35623, July 7, 1977.

decision to the President within five days of the application. The interagency appeal process must be completed within 90 days of the registration of the application. However, there is no timeframe for Presidential consideration of a license decision. This process is shown in **Appendix B**.

When BIS denies an export license, it must state the statutory and regulatory basis for the denial, giving specific considerations and modifications that would allow BIS to reconsider an application. An explicit appeal procedure is specified in EAR. One possible basis for appeal is an assessment of foreign availability. If the item in question can be shown to be readily available from a non-U.S. source in sufficient quantity and of comparable quality, then a license denial may, in some cases, be reversed.

Figure 4. The License Process



Source: CRS.

Enforcement and Penalties

For individuals convicted of violating export control laws, ECRA mandates penalties up to \$1 million or up to 20 years imprisonment, or both, per criminal violation.³⁹ ECRA also provides for civil penalties: for each violation, individuals may be fined up to \$300,000 “or an amount that is twice the value of the transaction that is the basis of the violation with respect to which the penalty is imposed, whichever is greater.”⁴⁰ Such penalties may also include revocation of export licenses and prohibitions on the offender’s ability to export.⁴¹ Enforcement is carried out by the Office of Export Enforcement (OEE) at BIS.⁴² OEE’s headquarters is in Washington, DC, and the office has 23 U.S. field offices, as well as export control officers in seven foreign countries. OEE

³⁹ 50 U.S.C. §4819(a), ECRA §1760(a).

⁴⁰ 50 U.S.C. §4819(b), ECRA §1760(b).

⁴¹ Ibid.

⁴² 15 C.F.R. §766.25.

is authorized to carry out investigations domestically and works with the Department of Homeland Security (DHS) to conduct investigations overseas. The office, along with in-country U.S. embassy officials, also conducts pre-license checks and post-shipment verifications.⁴³

Export Controls on Defense Articles

Arms Export Control Act (AECA)

The International Security Assistance and Arms Export Control Act of 1976 (P.L. 94-329) (AECA) amended The Foreign Military Sales Act of 1968 (P.L. 90-629), which contained prescriptions and restrictions on U.S. sales of defense articles, as well as limited reporting requirements, but no congressional review provision.⁴⁴ The International Security Assistance and Arms Export Control Act added the review and process provisions described below. The Foreign Assistance Act of 1974 (P.L. 93-359) originally amended The Foreign Military Sales Act to include this provision. Pre-1974 executive-legislative consultations with regard to sales of defense article were “limited for the most part to briefings of foreign policy committee members or discussions that developed during hearings on assistance legislation or reports of major sales in the news media,” according to a 1982 House Foreign Affairs Committee print, which added that “Congress, in the early 1970s, had very limited information on the policy rationale behind executive branch decisions on specific arms sales.”⁴⁵

The AECA (P.L. 94-329)⁴⁶ provides the President with the statutory authority to control the export of defense articles and services. The AECA also contains the statutory authority for the Foreign Military Sales (FMS) program, under which the U.S. government sells U.S. defense articles, services, and training on a government-to-government basis. The law also specifies criteria for Direct Commercial Sales (DCS), whereby eligible foreign governments and international organizations purchase some defense articles and services directly from U.S. firms. It establishes the U.S. Munitions List (USML), a listing of defense items and services controlled, and requires the Secretary of State to maintain, as part of the USML, “a list of all items on the Missile Technology Control Regime (MTCR) Annex” that are not controlled as dual-use items.

The AECA sets out foreign and national policy objectives for international defense cooperation and military export controls. Section 3(a) of the AECA specifies the general eligibility criteria for countries or international organizations to receive U.S. defense articles and defense services provided under the act. The law also sets express conditions on the uses to which these defense articles may be put. Section 4 of the AECA states that U.S. defense articles and defense services shall be sold to friendly countries “solely” for use in “internal security;” for use in “legitimate self-defense;” to enable the recipient to participate in “regional or collective arrangements or measures consistent with the Charter of the United Nations;” to enable the recipient to participate in “collective measures requested by the United Nations for the purpose of maintaining or restoring international peace and security;” and to enable the foreign military forces “in less developed countries to construct public works and to engage in other activities helpful to the economic and social development of such friendly countries.”

⁴³ 15 C.F.R. §758.7.

⁴⁴ P.L. 94-329 renamed The Foreign Military Sales Act as the Arms Export Control Act.

⁴⁵ Richard F. Grimmett, *Executive-Legislative Consultation on U.S. Arms Sales*, House Foreign Affairs Committee Print (prepared by CRS), December 1982.

⁴⁶ Originally titled The Foreign Military Sales Act of 1968 (P.L. 90-629).

Congressional Requirements

Then AECA requires for congressional consideration of certain foreign defense sales proposed by the President. This procedure includes consideration of proposals to sell major defense equipment and services, or to retransfer defense articles to other countries.⁴⁷ The procedure is triggered by a formal report to Congress under Section 36 of the AECA. In general, the executive branch, after complying with the terms of the applicable section of U.S. law is free to proceed with the sale unless Congress passes legislation prohibiting or modifying the proposed sale.

Under Section 36(b) of the AECA, Congress must be formally notified 30 calendar days before the Administration can take the final steps to conclude a government-to-government foreign military sale or issue an export license for commercial sales of major defense equipment valued at \$14 million or more, defense articles or services valued at \$50 million or more, or design and construction services valued at \$200 million or more. In the case of such sales to NATO member states Japan, Australia, or New Zealand, Congress must be formally notified 15 calendar days before the Administration can proceed with the sale. However, the prior notice thresholds are higher for Japan, Australia, and New Zealand. These higher thresholds are \$25 million for the sale, enhancement, or upgrading of major defense equipment; \$100 million for the sale, enhancement, or upgrading of defense articles and defense services; and \$300 million for the sale, enhancement, or upgrading of design and construction services, so long as such sales to these countries do not include or involve sales to a country outside of this group of nations. Commercially licensed arms sales cases of USML category I items valued at \$1 million or more must also be formally notified to Congress for review 30 days prior to the license for export being approved. In the case of proposed licenses for such sales to NATO members, Japan, Australia, South Korea, Israel, or New Zealand, 15 days prior notification is required.

Table 1. Congressional Notification Requirements for Sales of Defense Articles

Destination	Type of transaction	Notification time (Cal. days)	Transactions and Value Thresholds			
			Major Defense Equipment	Defense Articles	Design and Construction	Firearms
NATO +5	FMS	15 days	\$25 million	\$100 million	\$300 million	—
	DCS	15 days	\$25 million	\$100 million	—	\$1 million
Other Destinations	FMS	30 days	\$14 million	\$50 million	\$200 million	—
	DCS	30 days	\$14 million	\$50 million	—	\$1 million

Source: Arms Export Control Act (P.L. 94-329).

Notes: All of the transactions include “sale, enhancement, or upgrading” of the relevant items. FMS: Foreign Military Sales; DCS: Direct Commercial Sales.

Licensing Policy

The International Traffic in Arms Regulations (ITAR) set out licensing policy for exports (and temporary imports) of USML items. A license is required for the export of nearly all items on the USML. There is a limited license exemption for USML items for Canada because the United States considers Canada to be part of the U.S. defense industrial base. In addition, the United

⁴⁷ For more information, see CRS Report RL31675, *Arms Sales: Congressional Review Process*, by Paul K. Kerr.

States has treaties with the United Kingdom and Australia to exempt certain defense articles from licensing obligations to approved end users in those countries; the Senate gave its advice and consent to ratification of these treaties in 2010. Unlike some Commerce Department dual-use controls, licensing requirements are based on the nature of the article and not the end use or end user of the item. The United States implements a range of prohibitions on munitions exports to countries unilaterally or based on adherence to United Nations (U.N.) arms embargoes. Any firm engaged in manufacturing, exporting, or brokering any item on the USML must register with the Directorate of Defense Trade Controls (DDTC) at the State Department and pay a yearly fee whether or not the firm seeks to export during the year.

Reexports and Controlled U.S. Content

Commerce and State Department regulations have different licensing requirements for reexports of items which contain only a portion of controlled U.S. content and which are not covered by any export license exceptions. EAR require licenses for the reexport of most CCL items if the items contain over 25% controlled U.S. content. For some 600 Series and satellite reexports, there is no *de minimis* level. By contrast, the ITAR require DDTC approval for reexports of end products containing U.S.-origin defense articles, regardless of the proportion of such content in the final products. A 2013 Commerce Department rule provides an example: “a foreign party’s transfer of a foreign-made end item containing even one U.S.-origin ITAR-controlled component of any value from one NATO member to another NATO member requires State Department authorization.”

Source for quotation: “Revisions to the Export Administration Regulations: Initial Implementation of Export Control Reforms,” 78 *Federal Register* 22660, April 16, 2013; EAR 734.4.

Administration

Exports of defense goods and services are administered by DDTC, which is a component of the Department of State’s Bureau of Political-Military Affairs and consists of three offices: Policy, Licensing, and Compliance. DDTC also processes commodity jurisdiction requests, which determine whether an item is regulated by Commerce or State. DDTC is led by the Deputy Assistant Secretary for Defense Trade.

Critics of the defense trade system have decried the delays and backlogs in processing license applications at DDTC. A National Security Presidential Directive (NSPD-56), signed by President Bush on January 22, 2008, directed that the review and adjudication of defense trade licenses submitted under ITAR are to be completed within 60 days, except where six “national security exceptions apply.”⁴⁸ Previously, except for the congressional notification procedures discussed above, DDTC had no defined timeline for the application process.

Enforcement and Penalties

The AECA provides for criminal penalties of up to \$1 million or 20 years of imprisonment, or both, for each violation. The AECA also authorizes civil penalties of up to \$500,000 and debarment from future exports. Civil penalties increase annually pursuant to Section 701 of the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (P.L. 114-74). DDTC has an enforcement staff and works with the Defense Security Service and the Customs and Border Protection and Immigration and Customs Enforcement (ICE) units at the Department of Homeland Security (DHS). In addition to adjudicating civil cases, DDTC assists DHS and the Department of Justice (DOJ) in pursuing criminal investigations and prosecutions. DDTC also

⁴⁸ These are required congressional notification; failure to submit required government assurances; incomplete end-use checks; incomplete Department of Defense review; a required waiver; “[w]hen a related export policy is under active review and pending final determination by the Department of State.” “Policy on Review Time for License Applications,” 74 *Federal Register* 63497, December 3, 2009, p. 63497.

coordinates the Blue Lantern end use monitoring program, in which in-country U.S. embassy officials conduct pre-license checks and post-shipment verifications of items transferred via DCS. The Department of Defense's Defense Security Cooperation Agency manages the department's Golden Sentry program, which performs an analogous function for FMS transfers.

Nuclear Controls

Controls on nuclear goods and technology are derived from the Atomic Energy Act of 1954 (P.L. 83-703), as amended, as well as from ECRA and the AECA. Controls on nuclear exports are divided among several agencies, based on the product or service being exported. The Nuclear Regulatory Commission (NRC) regulates exports of nuclear facilities and material. The NRC licensing policy and control list are located at 10 C.F.R. 110. BIS licenses "outside the core" civilian power plant equipment and maintains the Nuclear Referral List as part of the CCL. The Department of Energy authorizes the export of nuclear technology. DDTC exercises licensing authority over nuclear items in defense articles under the ITAR.⁴⁹

Defense Technology Security Administration (DTSA)

A Department of Defense (DOD) agency under the Under Secretary of Defense for Policy, DTSA coordinates the technical and national security review of direct commercial sales export licenses and commodity jurisdiction requests received from the Departments of Commerce and State. DTSA develops the recommendation of DOD on these referred export licenses or commodity jurisdictions based on input provided by the various DOD departments and agencies and represents DOD in the interagency dispute resolution process. Not all licenses considered by DDTC or BIS are referred to DTSA; memorandums of understanding govern the types of licenses referred from each agency. DTSA coordinates the DOD position with regard to proposed changes to the ITAR and EAR. The agency also represents DOD in the interagency process responsible for compliance with multinational export control regimes.

Economic Sanctions

Exports controls are also placed on certain goods and destinations based on economic sanctions or embargoes imposed by the President under authority of IEEPA or by specific acts of Congress. Under IEEPA, the President can "investigate, regulate, or prohibit" nearly all foreign economic transactions except certain humanitarian donations and the flow of informational materials. In addition, Congress has imposed restrictions or prohibitions on economic activity with certain countries that are reflected in U.S. export control laws. The State Department determines sanctions policy, and along with the Departments of Justice and the Treasury, identifies countries, organizations, and persons linked to international terrorism or other activities contrary to the national security and foreign policy of the United States. The Office of Foreign Assets Control (OFAC) in the Treasury Department administers transaction-based controls based on these determinations, implements the Foreign Assets Control Regulations, publishes lists of foreign terrorist organizations and specially blocked persons, and shares licensing responsibilities for sanctions entities with BIS. The Committee on Banking, Housing, and Urban Affairs, along with the Committee on Foreign Relations under certain circumstances, maintain jurisdiction over sanctions policy in the Senate.

⁴⁹ For more information, see CRS Report RS22937, *Nuclear Cooperation with Other Countries: A Primer*, by Paul K. Kerr and Mary Beth D. Nikitin.

Enforcement of U.S. Export Controls

Enforcement of the U.S. export control system is undertaken by the agencies responsible for export licensing, the Department of Homeland Security (DHS), the Department of Justice (DOJ) (National Security Division and the Federal Bureau of Investigation [FBI]), and the Defense Criminal Investigative Service (DCIS). Their activities can be summarized as follows.

- **Office of Export Enforcement (OEE) of the Bureau of Industry and Security (BIS), Department of Commerce.** OEE investigates criminal and administrative violations of the dual-use export control regime. OEE is authorized to conduct domestic investigations and works with ICE on investigations of export control violations overseas. OEE refers civil violations to the Office of Chief Counsel of BIS and criminal violations to DOJ.
- **Office of Defense Trade Controls Compliance (ODTC) in DDTC, Department of State.** DDTC primarily administers civil enforcement actions, including charging letters and consent agreements, policies of denial, debarments, transaction exceptions, and reinstatements. ODTC provides agency support to investigations and criminal enforcement actions primarily conducted by ICE and the FBI.
- **Office of Enforcement, Nuclear Regulatory Commission (NRC).** Investigates export control violations of nuclear facilities and material licensed by the NRC's Office of International Programs. The Office of Enforcement refers criminal violations to DOJ.
- **ICE, Department of Homeland Security.** As with its predecessor at the U.S. Customs Service, ICE has been the lead agency for criminal export enforcement activities. The Counter-Proliferation Investigations Unit investigates violations of dual-use and munitions export controls, exports to sanctioned countries, and violations of economic embargoes. ICE supplements and provides enforcement capacity to the export licensing agencies (BIS and DDTC) and undertakes investigations based on its own and other agency intelligence. In addition, export controls are enforced at the port of departure by DHS Customs and Border Protection.
- **National Security Division, (DOJ).** The counterespionage section of this division undertakes criminal prosecutions resulting from investigations conducted by the licensing agencies, ICE, and the FBI. An October 2007 DOJ National Export Enforcement Initiative established task forces between the licensing and enforcement agencies and U.S. Attorney's Offices in 20 cities to coordinate export control prosecutions and has facilitated new counter proliferation coordination among law enforcement agencies, export licensing agencies, and the intelligence community.
- **FBI.** The FBI's Weapons of Mass Destruction Directorate receives and analyzes intelligence regarding proliferation networks, provides specialized training on counter proliferation for the National Export Enforcement Initiative, and cooperates with the above-mentioned investigative partners and export licensing agencies.
- **DCIS, Department of Defense.** DCIS is the criminal investigative arm of the Inspector General of DOD. Among its varied activities, DCIS investigates the transfer of sensitive defense technologies to proscribed nations and criminal elements.

The sheer number of agencies involved in export control enforcement led the Obama Administration to attempt to streamline the export enforcement system in ECRI. Although the Obama Administration never consolidated export control enforcement in a single agency, the Administration created a single export “fusion center” to “coordinate and de-conflict investigations, serve as a central point of contact for coordinating export control enforcement with Intelligence Community activities, and synchronize overlapping outreach programs.”⁵⁰ This was achieved by Executive Order 13558, issued November 9, 2010, which created the Export Enforcement Coordination Center (E2C2). The center, which officially opened in March 2012 within the Department of Homeland Security, consists of a director from the Department of Homeland Security and two deputies appointed from the Departments of Commerce and Justice; and an intelligence community liaison designated by the Director of National Intelligence.

The center functions as the primary forum to coordinate export control enforcement efforts among the Departments of State, the Treasury, Commerce, Defense, Justice, Energy, and Homeland Security, as well as the Director of National Intelligence, and also to resolve potential conflicts in criminal and administrative export control enforcement. The center is also able to screen all license applications. Previously, the OEE at BIS was the only entity that could screen dual-use licenses, whereas ICE could screen only DDTC- and OFAC-issued licenses. The unit was also to have established a government-wide statistical tracking capability for criminal and administrative enforcement activities, although the extent to which that occurred is unclear. Moreover, in March 2012, the Department of Commerce established an Information Triage Unit to serve as an information gathering and screening unit among law enforcement agencies, the intelligence community, and the export licensing agencies. The unit is designed to serve as a central point to disseminate relevant information for each license application prior to decision-making.⁵¹

Multilateral Control Regimes

In addition to U.S. controls, there are four major multilateral control regimes: the Australia Group, the Missile Technology Control Regime (MTCR), the Nuclear Suppliers Group (NSG), and the Wassenaar Arrangement.⁵² Most items on the CCL are controlled in accordance with the United States’ commitments to these four regimes. In addition to the controls described in the box below, these regimes have catch-all controls, which allow for the control of nonlisted items if they are to be used for a military or proliferation-related purpose.

⁵⁰ Speech of General Jim Jones, June 30, 2010.

⁵¹ Department of Commerce, Press Release, March 7, 2012.

⁵² For more information about these regimes, see CRS Report RL33865, *Arms Control and Nonproliferation: A Catalog of Treaties and Agreements*, by Amy F. Woolf, Paul K. Kerr, and Mary Beth D. Nikitin.

Multilateral Control Regimes

- **Australia Group:** a voluntary, informal, export control arrangement founded in 1985 and consisting of 43 members. It has a set of export guidelines, as well as six common control lists. These lists include dual-use chemical manufacturing and biological equipment, chemical weapons precursors, and biological agents.
- **Missile Technology Control Regime (MTCR):** an informal voluntary export control arrangement established in 1987. The 35 members of the regime agree to adhere to common export policy guidelines applied to lists of controlled items. The MTCR guidelines call on each partner country to exercise restraint when considering transfers of equipment or technology, as well as “intangible” transfers, that would provide or help a recipient country build, a missile capable of delivering a 500 kilogram warhead to a range of 300 kilometers or more. The MTCR annex contains two categories of controlled items. Category I items are the most sensitive. There is “a strong presumption to deny” such transfers, according to the MTCR guidelines. Regime partners have greater flexibility with respect to exports of Category II items.
- **Nuclear Suppliers Group (NSG):** an informal association of nuclear exporters founded in 1975 and currently consisting of 48 members. NSG members voluntarily agree to coordinate exports of civilian nuclear material, as well as nuclear-related equipment and technology, to nonnuclear-weapon states.⁵³ The group’s guidelines include lists of materials and equipment subject to export control, in addition to requiring importers to offer nonproliferation and physical security assurances.
- **Wassenaar Arrangement:** a voluntary export control regime approved in 1996 to replace COCOM and currently consisting of 42 members. Its participants agree to control exports and retransfers of items on a munitions list and a list of dual-use goods and technologies. According to its Guidelines and Procedures, the Wassenaar Arrangement is not formally targeted at “any state or group of states,” but is designed “to contribute to regional and international security and stability, by promoting transparency and greater responsibility in transfers of conventional arms and dual-use goods and technologies, thus preventing destabilizing accumulations.” Participants exchange information regarding transfers and licenses for items covered by the arrangement. The arrangement lacks an enforcement mechanism and an ability to block exports as had been possible under COCOM.

Scope of Export Controls

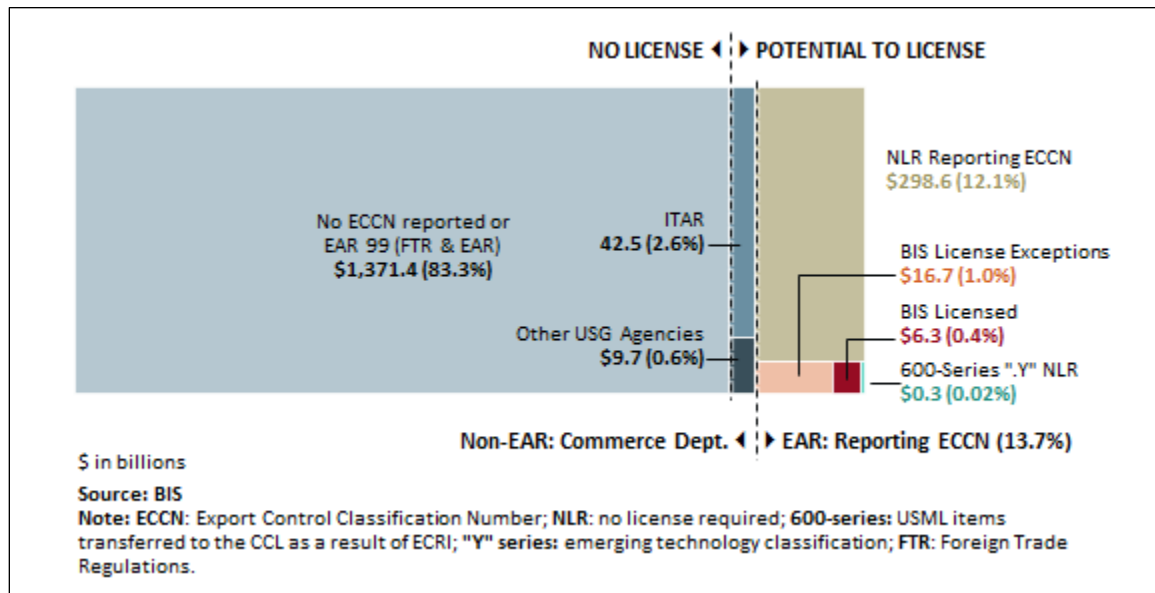
Nearly all exports are subject to EAR except for items controlled by other government agencies (Departments of State, the Treasury, Energy, Defense, Nuclear Regulatory Commission, Patent and Trademark Office), informational material, information and software arising from fundamental research, other unclassified academic research, and patent filings (See **Figure 1**). In 2019, approximately 96.8% of U.S. trade (by value) in 2019 was subject to EAR. However, licensing requirements were imposed on a limited subset of those subject to EAR. Approximately 83.3% of U.S. exports (by value) were subject to EAR, but 13.7% of the value of U.S. exports (by value) were classified on the Commerce Control List requiring a license to some destinations. Even among goods subject to licensing, a majority can be shipped with no license required (NLR) as many item do not require a license to export to certain destinations. In addition, certain exports are eligible to for license exceptions. A license exception is an authorization to export under stated conditions for items that would otherwise require a license, provided the exporter certify that the terms, provisions and conditions of the transaction meet the eligibility criteria of the license exception.⁵⁴ Thus, only 0.4% of total exports valued at \$6.3 billion required the procurement of an export license in 2019. In 2019, BIS reviewed 32,993 license applications for tangible items. BIS approved approximately 85.2% of the applications, returned 13.3% without action, and denied just over 1.1%. In addition, BIS reviewed 1,124 deemed export license applications. BIS approved approximately 85.7% of those applications as well, returned just

⁵³ The Nonproliferation Treaty (NPT) defines a nuclear-weapon state as “one which has manufactured and exploded a nuclear weapon or other nuclear explosive device” prior to January 1, 1967. These states are China, France, Russia, the United Kingdom, and the United States.

⁵⁴ EAR, Part 740.

under 14.6% without action, and denied just over 0.2 %. License applications are returned because they are incomplete or because a license is not necessary for a specific transaction. While a large majority of licenses are approved, approved licenses may be subject to certain conditions (such as restrictions on end uses or geographic location). The small amount of denied licenses may be attributed in part to knowledge made available to exporters of end uses and end users likely to be denied, thus discouraging applicants from seeking those licenses.

Figure 5. Total U.S. Exports: Export Authorization by Regulatory Authorities



The Export Control Reform Act of 2018

ECRA provides broad legislative authority for the President to implement dual-use export controls. The law repeals EAA 1979, which was the underlying statutory authority for dual-use export controls until it last expired in 2001. Subsequently, the export control system created pursuant to that law was continued by a presidential declaration of a national emergency and the invocation of the IEEPA.⁵⁵ ECRA directs the President to implement EAA 1979 nonproliferation sanctions provisions pursuant to IEEPA. ECRA has no expiration date.

Permanent Statutory Authority

Like EAA 1979, ECRA requires the President to control “the export, reexport, and in-country transfer of items subject to the jurisdiction of the United States, whether by United States persons or by foreign persons,”⁵⁶ as well as the

⁵⁵ Under IEEPA authority, the President may “investigate, block during the pendency of an investigation, regulate, direct and compel, nullify, void, prevent or prohibit, any acquisition, holding, withholding, use, transfer, withdrawal, transportation, importation or exportation of, or dealing in, or exercising any right, power, or privilege with respect to, or transactions involving, any property in which any foreign country or a national thereof has any interest by any person, or with respect to any property, subject to the jurisdiction of the United States.” P.L. 95-223, §203(a)(1)(B).

⁵⁶ 50 U.S.C. §4812(a)(1); ECRA §1753(a)(1).

activities of United States persons, wherever located, relating to specific (A) nuclear explosive devices; (B) missiles; (C) chemical or biological weapons; (D) whole plants for chemical weapons precursors; (E) foreign maritime nuclear projects; and (F) foreign military intelligence services.

ECRA also requires the Secretary of Commerce to “establish and maintain a list” of controlled items, foreign persons, and end uses determined to be a threat to U.S. national security and foreign policy.⁵⁷ This provision reauthorized the existing Commerce Control List (CCL) and provided statutory authority for the existing Entity List. The legislation also required the Secretary to require licenses for the export of controlled items,⁵⁸ to “prohibit unauthorized exports, reexports, and in-country transfers of controlled items,”⁵⁹ and to “monitor shipments and other means of transfer,”⁶⁰ among other requirements.⁶¹ ECRA is the first export control statute explicitly to consider economic security as a component/element of national security.

Additionally, ECRA maintains the Export Administration Regulations (EAR) in effect at the date ECRA’s enactment until such time as they are modified, superseded, set aside, or revoked under the authority of ECRA.⁶² Any administrative or judicial proceedings commenced, or any applications for licenses made, under EAA 1979 remain in effect as well.⁶³ BIS continues to oversee and implement the dual-use export control system.

While ECRA maintains much of the previous dual-use export control system, the law contains several notable changes that tighten overall restrictions on export licensing and subject certain “emerging and foundational technologies” to greater scrutiny.

⁵⁷ 50 U.S.C. §4813(a)(1); ECRA §1754(a)(1).

⁵⁸ 50 U.S.C. §4813(a)(5); ECRA §1754 (a)(5).

⁵⁹ 50 U.S.C. §4813(a)(1); ECRA §1754(a)(10).

⁶⁰ 50 U.S.C. §4813(a)(11); ECRA §1754(a)(11).

⁶¹ 50 U.S.C. §4813(a)(1)-(16); ECRA §1754(a)(1)-(16).

⁶² 50 U.S.C. §4826(a); ECRA §1768(a).

⁶³ 50 U.S.C. §4826(b); ECRA §1768(b).

New Provisions

Emerging and Foundational Technology

ECRA requires the President to establish an interagency process—led by Commerce and including Defense, State, Energy, and other agencies—to identify emerging and foundational technologies that are “essential to the national security of the United States” and that are not otherwise covered by the definition of “critical technologies” in the Foreign Investment Risk Review Modernization Act (FIRRMA).⁶⁴ ECRA then directs Commerce to establish a licensing policy for those items.⁶⁵ While ECRA grants the Secretary discretion in establishing the licensing policy, it requires that, at a minimum, the Secretary require a license for exports of such technologies to countries subject to an embargo, including an arms embargo (to which China is subject). In the markup of ECRA before the House Committee on Foreign Affairs, then-Chairman Edward Royce noted that ECRA “closes gaps in our export controls that could permit transfers of cutting-edge technology like artificial intelligence and advanced semiconductors to potential adversaries such as Beijing.”⁶⁶ However, some Members of Congress have criticized what they consider the slow pace of identifying emerging technologies, arguing that it hampers the ability of CFIUS to screen foreign investments.⁶⁷

Emerging Technologies

- Additive manufacturing
- Advanced computing technology
- Advanced materials
- Advanced surveillance technology
- Artificial intelligence (AI) and machine learning
- Biotechnology
- Brain-computer interfaces
- Data analytics technology
- Hypersonics
- Logistics technologies
- Microprocessor technology
- Position, navigation and timing (PNT) technology
- Quantum information and sensing technology
- Robotics

Source: Bureau of Industry and Security.

BIS is determining the technology identification policy through the rule-making process. In November 2018, BIS published a Notice of Proposed Rulemaking for controls on emerging technology.⁶⁸ BIS obtained industry input on defining emerging technology; criteria for determining whether specific technologies (**shaded box, above**) are essential to U.S. national security; other technology categories that could warrant review to identify emerging technologies; status of development of those technologies in the United States and worldwide; the impact of specific controls on U.S. technological leadership; and other potential approaches to identifying emerging technologies warranting consideration for export controls.⁶⁹ During the comment

⁶⁴ 50 U.S.C. §4817(a); ECRA §1758(a). See also CRS Insight IN10924, *Foreign Investment Risk Review Modernization Act (FIRRMA)*, by James K. Jackson and Cathleen D. Cimino-Isaacs.

⁶⁵ 50 U.S.C. §4817(b); ECRA §1758(b). However, likely due to the system’s long-standing reliance on IEEPA, ECRA forbids the Secretary from controlling the export of certain information or informational materials covered by limitations placed on IEEPA. 50 U.S.C. §4817(b)(4); ECRA §1758(b)(4); 50 U.S.C. §1702(b).

⁶⁶ U.S. Congress, House Committee on Foreign Affairs, *Markup of H.R. 5040 et al.*, April 17, 2018, 115th Cong., 2nd sess., Serial No. 115-120 (Washington, DC: GPO, 2018), p. 219.

⁶⁷ House Republican China Task Force Report, p. 76, <https://gop-foreignaffairs.house.gov/blog/china-task-force-report/>.

⁶⁸ 50 U.S.C. §4817(b)(2)(C); ECRA §1758(b)(2)(C).

⁶⁹ BIS, “Review of Controls for Certain Emerging Technologies,” 83 *Federal Register* 58201 (November 19, 2019).

period, industry groups urged BIS to tailor narrowly any export controls on emerging technologies.⁷⁰ In the fall 2019, reporting suggested that BIS had taken industry concerns into account and would address emerging technologies by controlling discrete items, rather than larger categories of products.⁷¹ To date, BIS has identified and placed controls on the following emerging technologies:

- software specially designed to automate the analysis of geospatial imagery;⁷²
- single-use cultivation chambers with rigid walls that can be used to handle biological weapons and 24 chemical precursors.⁷³
- “software” capable of being used to operate nucleic acid assemblers and synthesizers...for the purpose of generating pathogens and toxins without the need to acquire controlled genetic elements and organisms (proposed).⁷⁴

The following emerging technologies were added as a result of the 2019 Wassenaar Arrangement “in a manner contemplated by ECRA:”⁷⁵

- hybrid additive manufacturing (AM)/computer numerically controlled (CNC) tools;
- computational lithography software designed for the fabrication of extreme ultraviolet (EUV) masks;
- technology for finishing wafers for 5nm production;
- digital forensics tools that circumvent authentication or authorization controls on a computer (or communications device) and extract raw data;
- software for monitoring and analysis of communications and metadata acquired from a telecommunications service provider via a handover interface; and
- sub-orbital craft.

In addition, these technologies described as emerging were added as a result of the 2018 Wassenaar Arrangement Plenary prior to the launch of the Commerce department process:⁷⁶

- discrete microwave transistors;
- continuity of operations software;
- certain post-quantum cryptographic algorithms;

⁷⁰ “Industry groups call on BIS to narrowly apply new export controls,” *Inside U.S. Trade* (January 15, 2019).

⁷¹ See, e.g., Alexander Alper, “U.S. finalizing rules to limit sensitive tech exports to China, others,” *Reuters* (December 17, 2019); “Commerce forging first emerging tech export control as Congress grows impatient,” *Inside U.S. Trade* (November 27, 2019).

⁷² BIS, “Addition of Software Specially Designed To Automate the Analysis of Geospatial Imagery to the Export Control Classification Number 0Y521 Series,” 85 *Federal Register* 459 (January 6, 2020).

⁷³ “Implementation of the February 2020 Australia Group Intersessional Decisions: Addition of Certain Rigid-Walled, Single-Use Cultivation Chambers and Precursor Chemicals to the Commerce Control List,” 85 *Federal Register* 36483, June 17, 2020.

⁷⁴ BIS, “Commerce Control List: Proposed Controls on “Software” for the Operation of Certain Automated Nucleic Acid Assemblers and Synthesizers; Request for Comments,” 85 *Federal Register*, November 6, 2020.

⁷⁵ BIS, “Implementation of Certain New Controls on Emerging Technologies Agreed to Wassenaar Arrangement 2019 Plenary,” 85 *Federal Register* 62584, October 5, 2020.

⁷⁶ BIS, “Implementation of Certain New Controls on Emerging Technologies Agreed to Wassenaar Arrangement 2018 Plenary,” 84 *Federal Register* 23886, May 23, 2019.

- underwater transducers designed to operate as hydrophones; and
- aircraft “specially designed” or modified to be air-launch platforms for space launch vehicles.

On August 27, 2020, BIS issued a proposed rulemaking seeking public guidance on the control of “foundational technologies,” which it described as “those that may warrant stricter controls if a present or potential application or capability of that technology poses a national security threat to the United States.” In addition to seeking assistance to further define foundational technologies, BIS also suggested some possible categories for control, such as items or technologies

- controlled for military end uses and end users including items that could assist indigenous military innovation in China, Russia, or Venezuela;
- utilized or required for innovation in the development of conventional weapons or weapons of mass destruction, or to enable foreign military intelligence collection activities; or
- subject to illicit procurement activities.⁷⁷

The scope of potential qualifying items currently are specifically controlled only for anti-terrorism, crime control, or UN embargo reasons.⁷⁸ By statute, these potential controls would be applied, at minimum, to countries subject to a U.S. arms embargo.

Expansion of EAR Controls on U.S. Persons to Cover Foreign Military Intelligence Services

Previously, the EAR had restricted the provisioning of services by U.S. persons relating to the development of nuclear explosive devices, missiles, chemical or biological weapons, plants for the manufacture of chemical weapon precursors, and foreign maritime nuclear projects.⁷⁹ ECRA further directs the President to control the activities of U.S. persons, wherever located, relating to specific “foreign military intelligence services.”⁸⁰ In testimony before the U.S.-China Economic and Security Review Commission, former Assistant Secretary of Commerce for Export Administration Kevin J. Wolf noted that the definition of “foreign military intelligence services” will have to be carefully worked out to avoid “unnecessary collateral consequences.”⁸¹ Nevertheless, once in place, he noted, “EAR would prohibit, for example, a U.S. person from providing assistance to a Chinese military intelligence agency with respect to the operation of a commercial satellite even if there were no transfers of controlled commodities, software, or technology involved.”⁸² Members of the law-practice community have said that this expansion “may complicate the provision of services in the defense, aerospace and intelligence industry.”⁸³

⁷⁷ “Identification and Review of Controls for Certain Foundational Technologies,” 85 *Federal Register* 52934, August 27, 2020.

⁷⁸ As noted, these items may be subject to EAR, but not specifically controlled, such as EAR99 items.

⁷⁹ 15 C.F.R. §§744.5-744.6.

⁸⁰ 50 U.S.C. §4812(a)(2)(F); ECRA §1753(a)(2)(F).

⁸¹ Testimony by Kevin J. Wolf before the U.S.-China Economic and Security Review Commission, Hearing on “China in Space: A Strategic Competition?” April 25, 2019, p. 5, available at <https://www.uscc.gov/sites/default/files/Kevin%20Wolf%20USCC%2025%20April.pdf>.

⁸² *Ibid.*

⁸³ Michael E. Leiter et al., “Tightened Restrictions on Technology Transfer Under the Export Control Reform Act,” (September 11, 2018), available at <https://www.skadden.com/-/media/files/publications/2018/09/tightened-restrictions-on-technology-transfer/tightenedrestrictionsontechnologytransferunderthee.pdf>; Peter Flanagan et al., “Export Control

Others, however, point to how China's military-civilian fusion (MCF) program blurs distinctions between military and civilian end users or end uses. According to a former Assistant Secretary of State for International Security and Nonproliferation, "the MCF presents a significant national security threat to the nations of the democratic world, and an ongoing challenge for any possessor of cutting-edge technology that engages with any person or entity subject to PRC jurisdiction."⁸⁴

The Entity List

- ECRA requires the establishment and maintenance of a list of foreign persons and end uses that are determined to be a threat to the national security and foreign policy of the United States.⁸⁵ This language provides a statutory underpinning for the Entity List (EL), which was first published in 1997 as a way to inform the public of entities engaged in the diversion of items to weapons of mass destruction (WMD) programs.
- The End User Review Committee (ERC), and interagency group consisting of representatives from the Departments of Commerce, State, Defense, Energy, and in some cases Treasury, administer the EL. As part of EAR (Part 744, Supp.4), additions and deletions to the EL are announced in the *Federal Register*.
- Entities are arranged by country and lists the names, known addresses, and aliases of a given entity, the scope of the license requirement for an entity, its licensing policy, and its *Federal Register* citation. Individuals may be on the entity list. For most entities, the licensing scope is "all items subject to the EAR," although some may have differing restrictions. For example, Huawei entities have an exception for already lightly controlled items released for development or revision of standards. Most entities face a presumption of denial for licenses, although some may be reviewed on a case-by-case basis for certain commodities.
- Originally used for those implicated in illicit transfers of WMD, over time the EL has broadened to include "persons reasonably believed to be involved, or pose a significant risk of being becoming involved, in activities contrary to the national security and foreign policy of the United States." Recent entities have included the telecommunications firm Huawei and its subsidiaries, police or security forces involved with repression in Xinjiang province in China, and entities involved island reclamation in the South China Sea. BIS reported 1,644 entities are on the list in FY2020.

Sources: Entity List: EAR 744.16; 744 Supp. 4; BIS Annual Report p. 8.

Licensing Process Changes

ECRA adds several new procedural requirements for issuing licenses that the Secretary is either required or permitted to implement, including assessments of the impact on the defense industrial base and the disclosure of foreign ownership.

Defense Industrial Base Considerations

ECRA adds a new requirement that the licensing procedure "shall provide for the assessment of the impact of a proposed export of an item on the United States defense industrial base" and further requires that the Secretary deny an application for an export license that "would have a significant negative impact on such defense industrial base."⁸⁶ ECRA defines negative impact as

(A) A reduction in the availability of an item produced in the United States that is likely to be acquired by the Department of Defense or other Federal department or agency for the advancement of the national security of the United States, or for the production of an item

Act is Finalized," (July 30, 2018), available at https://www.cov.com/-/media/files/corporate/publications/2018/07/export_control_reform_act_is_finalized_in_congress.pdf.

⁸⁴ Christopher Ford, "Technology Transfer De-Risking: A New and Growing Need," Department of State, Arms Control and International Security Papers, December 2020, <https://www.state.gov/wp-content/uploads/2020/12/T-paper-series-23-Derisking-508.pdf>.

⁸⁵ 50 U.S.C. §4813(a)(2); ECRA §1754(a)(2)

⁸⁶ 50 U.S.C. §4815(d)(1); ECRA §1756(d)(1).

in the United States for the Department of Defense or other agency for the advancement of the national security of the United States.

(B) A reduction in the production in the United States of an item that is the result of research and development carried out, or funded by, the Department of Defense or other Federal department or agency to advance the national security of the United States, or a federally funded research and development center.

(C) A reduction in the employment of United States persons whose knowledge and skills are necessary for the continued production in the United States of an item that is likely to be acquired by the Department of Defense or other Federal department or agency for the advancement of the national security of the United States.⁸⁷

In support of that requirement, applicants for an export license are now required to provide information necessary to make such an assessment, “including whether the purpose or effect of the export is to allow for the significant production of items relevant for the defense industrial base outside the United States.”⁸⁸

Foreign Ownership Disclosures

ECRA authorizes the Secretary to require in a license application disclosure of foreign ownership information of the person or corporate entity that would receive exports of “emerging and foundational technologies.”⁸⁹

Interagency Dispute Resolution Process

ECRA requires that the Administration review and evaluate the interagency export licensing referral, review, and escalation procedures. The legislation changed the appeal process to require a majority of relevant agencies to approve export licenses for hot-section jet engine technology, commercial satellites, and emerging and foundational technology. Previously, while any agency could appeal an initial licensing decision by BIS, the Commerce Department could continue to cast the deciding vote to approve a license over the objections of other agencies. This provision responds to concerns by some observers that objections by the Department of Defense were not being given proper consideration in licensing escalations.

Additional Notable Changes

Expanded Denial Authority

The EAR previously authorized the Secretary “to deny the export privileges of any person who has been convicted of a violation of EAA 1979, EAR, or any order, license ... or authorization issued under IEPA.”⁹⁰ ECRA further authorizes the Secretary to deny export privileges to persons convicted of conspiracy, smuggling, espionage, disclosing classified information, or making false statements.⁹¹

⁸⁷ 50 U.S.C. §4815(d)(3); ECRA §1756(d)(3).

⁸⁸ 50 U.S.C. §4815(d)(2); ECRA §1756(d)(2).

⁸⁹ 50 U.S.C. §4817(b)(3)(C); ECRA §1758(b)(3)(C).

⁹⁰ 15 C.F.R. §725.25.

⁹¹ 50 U.S.C. §4819(e); ECRA §1760(e).

Increased Law Enforcement Powers

ECRA expands the law enforcement authority of BIS. ECRA authorizes the Secretary to issue orders, inspect books, records, and other information, issue subpoenas, conduct domestic and international investigations, issue temporary denial orders, carry firearms, conduct shipment inspections and verifications, execute warrants and make arrests.⁹² Additionally, ECRA provides new authority for the Secretary to engage in undercover operations and to support those operations by buying property, establishing or acquiring business entities, depositing money into banks or other financial institutions, and establishing wiretaps.⁹³

Civil and Criminal Penalties

While the EAR were maintained by the President under IEEPA, civil and criminal penalties for violations of the regulations were tied to IEEPA.⁹⁴ ECRA statutorily defines those penalties and increases civil penalties from \$250,000⁹⁵ to \$300,000 or an amount that is twice the value of the transaction that is the basis of the violation, whichever is greater.⁹⁶ Penalties for criminal violations remain unchanged at \$1 million or up to 20 years imprisonment.⁹⁷

Provisions Not Included

Some provisions of EAA 1979 were not included in ECRA. As noted above, ECRA maintains the Export Administration Regulations (EAR) in effect at the date of its enactment. Thus, sections of EAR implementing these provisions, such the crime controls, may be changed without legislation.

- **Foreign policy-based controls.** While ECRA continues to cite foreign policy of United States as a justification for imposing export controls, separate and distinct foreign policy-based (FP) controls no longer exist as a separate category of control. In EAA 1979, FP controls were subject to yearly renewal, and in order to extend the controls, the Administration was required to report to Congress how such controls would further the foreign policy of the United States or its international obligations. EAA 1979 also mandated that the Secretary testify no less than annually to the committees of jurisdiction on the implementation of foreign policy-based controls. One specific category of foreign policy controls requiring license for countries that “repeatedly provide support for international terrorism” has been maintained under ECRA.
- **Crime controls.** ECRA did not retain Sec. 6(n) of EAA 1979, which placed licensing requirement on crime control and detection instruments. While this authority is codified in EAR, the only seemingly related reference in ECRA is to define items with law enforcement-related applications as dual-use,⁹⁸ and a

⁹² 50 U.S.C. §3820(a); ECRA §1761(a).

⁹³ 50 U.S.C. §3820(b); ECRA §1761(b).

⁹⁴ 50 U.S.C. §1705. See also P.L. 110-96 (October 16, 2007); Guidance on Charging and Penalty Determinations in Settlement of Administrative Enforcement Cases, 81 *Federal Register* 40499 (July 22, 2016).

⁹⁵ 50 U.S.C. §1705(b).

⁹⁶ 50 U.S.C. §4819(c); ECRA §1760(c).

⁹⁷ 50 U.S.C. §4819(b); ECRA §1760(b): A fine of not more than \$1 million and imprisonment for not more than 20 years.

⁹⁸ 50 U.S.C. §4801(2); ECRA §1742(2).

statement of policy to use export controls “to carry out the foreign policy of the United States, including the protection of human rights and the promotion of democracy.”⁹⁹ Although perhaps unlikely, it seems that controls on crime control and detection instruments could potentially be removed without congressional assent.

- **Militarily Critical Technology List.** EAA 1979 tasked the Secretary of Defense with responsibility for creating a list of militarily critical technologies. The primary emphasis of this list was to identify “arrays of design and manufacturing know-how; keystone manufacturing, inspection, and test equipment; and goods accompanied by sophisticated operation, application or maintenance know-how...not possessed by countries to which exports are controlled...and would permit a significant advance in a military system of any such country.”¹⁰⁰ The list was to serve as a technical reference to inform decisions on the placement and removal of items on the CCL. Several editions of MCTL were published, however, GAO reported in 2013 that the MCTL was no longer being updated, had ceased to be available online, and was not being used for its original purpose to inform export licensing decisions.¹⁰¹ ECRA no longer requires the maintenance of this list.
- **Short Supply Controls.** As noted above, short-supply controls were a significant focus of immediate post-war export controls. The 1949 Export Control Act and subsequent legislation authorized export restrictions to protect domestic industry from shortages of scarce materials and the potential inflationary impact of foreign demand. While the statutory authority for short supply controls were removed in ECRA, regulatory authority remains. Short supply controls may continue to be imposed under IEEPA or other authorities. Few short-supply controls remain in force; they include restrictions on exports of petroleum products other than crude oil produced or derived from the Naval Petroleum Reserves, unprocessed western red cedar, and the export of horses by sea.¹⁰²

Commercial Communications Satellites

Although most items on either the CCL or the USML were placed there pursuant to executive discretion or international agreement, one category of items was on the USML by statute: commercial communications satellites (CCS). Prior to 1990, CCS were controlled exclusively by the Department of State under the authority of Section 38 of the Arms Export Control Act (P.L. 90-629). Despite having both military and civilian uses, CCS were considered munitions, as many satellites and associated technologies were originally designed “specifically” for military purposes and continue to have “significant military or intelligence applications as defined by regulation.” In 1990, however, President George H. W. Bush ordered a review of dual-use items, including CCS, on the U.S. Munitions List (USML), which resulted in satellites without military performance characteristics being moved to Department of Commerce jurisdiction. In 1996, President Clinton transferred all CCS (along with commercial jet hot section technology) to Commerce jurisdiction with enhanced licensing procedures. Following 1998 revelations by the Cox Committee that U.S. satellite manufacturers provided missile design information and skills to China through the improper transfer of launch failure analysis, Congress passed legislation transferring the authority, effective March 15, 1999, to license exports of CCS to the Department of State (Strom Thurmond National Defense Authorization Act for Fiscal Year 1999; P.L. 105-261).

⁹⁹ 50 U.S.C. §4811(2)(D); ECRA §1752(2)(D).

¹⁰⁰ EAA 1979, §5(d).

¹⁰¹ GAO Report 13-157, “DOD Assessment Needed to Determine Requirement for Critical Technologies List,” January 2013.

¹⁰² EAR, 15 C.F.R. 754.

The satellite industry has argued that this transfer has led to licensing delays and lost sales resulting from regulatory uncertainty, and it has lobbied to revert export controls to Commerce Department jurisdiction. Satellites launched for commercial communication purposes may contain embedded sensitive technology, such as positioning thrusters, signal encryption, mating and separation mechanisms, and multiple satellite/reentry vehicle systems, which as stand-alone items are also controlled under the USML. Industry claims that because of State's "see-through" policy of requiring licenses for parts and components embedded in CCS, foreign satellite manufacturers are designing out U.S. parts and components and advertising them as ITAR-free (i.e., free of munitions licensing requirements). In addition, Tiananmen Square sanctions and other waiver restrictions have precluded U.S. exports to China, a competitive launch destination.

Section 1248 of the 2010 National Defense Authorization Act (P.L. 111-84) directed the Secretaries of State and Defense to conduct a review of U.S. space export control policy, including a risk assessment of removing satellite and related components from the USML. An interim assessment, which was reported to Congress in May 2011, found that CCS, related components, and integration and launch information "with certain exceptions, conditions and limitations" could be removed from the USML and transferred to the CCL "without posing an unacceptable security risk." The final review, which was delivered to Congress on April 18, 2012, recommended that Congress should return export control jurisdiction for CCS to presidential discretion, as well as to authorize the Department of Defense to determine the need for special export control monitoring and oversight services for CCS and authorize DOD to be reimbursed for those services.

Section 1261 of the National Defense Authorization Act of 2013 (P.L. 112-239) repealed P.L. 105-261's provision transferring "satellites and related items" to the USML. But this law contains some restrictions. "Satellites or related items" may not be "exported, reexported, or transferred, directly or indirectly," to China, North Korea, "[a]ny country that is a state sponsor of terrorism," or "any entity or person in or acting for or on behalf of such government, entity, or person." This section also prohibits such items from being launched in any of those countries, even as "part of a launch vehicle owned, operated, or manufactured by the government of such country or any entity or person in or acting for or on behalf of such government, entity, or person." The President may waive this prohibition if the President "determines that it is in the national interest of the United States to do so" and notifies Congress. The law also specifies that licenses for the export of "satellites and related items to a country with respect to which the United States maintains a comprehensive arms embargo shall be subject to a presumption of denial." The Obama Administration moved CCS to the CCL in January 2017.¹⁰³

Recent Administrative Activity

The Trump Administration used the export control system in new and different ways to achieve its policy objectives. In addition to the congressional mandates from ECRA, the Trump Administration used export control tools to restrict access to U.S. technology by China, Russia, and other potential adversaries. While the Biden Administration has yet to delineate an export control strategy, the Administration has placed additional controls on Burma and Russia.

China

The Trump Administration used export control policy to address concerns about China's attempts to seek global civilian and military leadership in advanced and emerging technologies through coordinated industrial policies. Tightened controls respond to China's ambitious state-led industrial efforts, such as its Made in China 2025 (MIC 2025), that intend to create competitive advantages for China in strategic industries, in part by obtaining technology and expertise from U.S. and foreign firms. MIC 2025 aims to make China a leader in emerging technologies important to future commercial, government, and military systems and capabilities.¹⁰⁴ Concerns

¹⁰³ "Revisions to the Export Administration Regulations (EAR): Control of Spacecraft Systems and Related Items the President Determines No Longer Warrant Control Under the United States Munitions List (USML)," 82 *Federal Register* 2875, January 10, 2017; "International Traffic in Arms Regulations: Revision of U.S. Munitions List Category XV," 82 *Federal Register* 2889, January 10, 2017.

¹⁰⁴ Priority sectors include advanced manufacturing, aerospace, artificial intelligence, information technology, new

about China's military-civil fusion (MCF) program, which seeks to leverage MIC 2025 technological advancements for military development, including gains achieved through business ties in advanced and dual-use technologies, prompted the Trump Administration to apply greater scrutiny of end users and end use in China, including a decision to end differential treatment between civilian and military end users in China and require greater disclosure about all parties to a licensing transaction. Some experts contend that China's approach blurs commercial and military distinctions. This approach, these experts argue, challenges as the U.S. export control regime because, they claim, the regime assumes clear distinctions between military and civilian end use and end users. The Trump Administration also sought to control the transfer of technologies that support surveillance and human rights abuses, particularly in China's Xinjiang Uyghur Autonomous Region (XUAR). China's enactment in June 2020 of a national security law for Hong Kong precipitated the Administration's decision to end differential treatment of Hong Kong.¹⁰⁵

Huawei

As part of its efforts to restrict Huawei's access to U.S. 5G technology and networks in the United States due to national security concerns about the company, the Administration added Huawei and 68 regional affiliates to the Entity List on May 21, 2019, for violations of the Treasury Department's Iranian Transactions and Sanctions Regulations and IEEPA. For Huawei and its subsidiaries, the Entity List (EL) prescribes a presumption of denial for all items subject to the EAR.¹⁰⁶ However, BIS also instituted a temporary general license (TGL) for transactions related to the following:

- Continued operation of existing networks and equipment.
- Services and support to existing handsets, including software updates and patches.
- Cybersecurity research and vulnerability disclosure to maintain continued integrity and reliability of existing systems.
- Engagement as necessary for the development of 5G standards by duly recognized standards bodies.¹⁰⁷

In August 2019, BIS added 46 additional Huawei subsidiaries to the EL. The TGL was extended five times, but expired August 17, 2020. However, it was replaced with a limited permanent exception for cybersecurity research and vulnerability disclosure.

Foreign-Produced Direct Product Rule

BIS also has tightened export controls on Huawei through use of the Foreign-produced Direct Product rule (FDPR). The FDPR is General Prohibition 3—1 of 10 General Prohibitions contained in EAR—which prohibits without a license or license exception the export of a foreign-

materials, robotics, and semiconductors. See CRS In Focus IF10964, *"Made in China 2025" Industrial Policies: Issues for Congress*, by Karen M. Sutter.

¹⁰⁵ CRS In Focus IF11627, *U.S. Export Control Reforms and China: Issues for Congress*, by Ian F. Fergusson and Karen M. Sutter.

¹⁰⁶ All items subject to EAR are items not controlled under other authorities (defense, nuclear), agricultural and medical products, and informational material (books, pamphlets, textbooks).

¹⁰⁷ "Addition of Entities to the Entity List," 84 *Federal Register* 22961, May 21, 2019.

produced direct product of controlled U.S. “technology” and “software.”¹⁰⁸ The FDPR subjects foreign-produced items to U.S. jurisdiction if the item was produced using U.S.-origin plant and equipment. In May 2020, BIS expanded the scope of the FDPR to Huawei and its subsidiaries on the Entity List from obtaining foreign-produced semiconductors that are the direct product of U.S.-origin software or technology or the direct product of a U.S.-origin plant or major equipment of a plant.¹⁰⁹ This rule was in part promulgated to address what then-Secretary of Commerce Wilbur Ross described as “a very highly technical loophole through which Huawei has been able in effect to use U.S. technology with foreign fab producers.”¹¹⁰

Under an August 2020 revision of the FDPR, U.S. controls extend to foreign-produced products if the party exporting, reexporting, or transferring the foreign product has knowledge that either

- the foreign-produced item will be incorporated into, or that the foreign-produced item will be used in the “production” or “development” of any “part,” “component,” or “equipment” produced, purchased, or ordered by” Huawei or its non-U.S. designated affiliates; or
- when Huawei or its non-U.S. designated affiliates is a party to any transaction involving the foreign-produced item, e.g., as a “purchaser,” “intermediate consignee,” “ultimate consignee,” or “end-user.”¹¹¹

Technologies Used for Surveillance, Repression, and Human Rights Concerns

In October 2019, the Trump Administration placed 20 security services and 8 high technology surveillance firms on the entity list. According to BIS, “these entities have been implicated in human rights violations and abuses in the implementation of China’s campaign of repression, mass arbitrary detention, and high-technology surveillance against Uighurs, Kazakhs, and other members of Muslim minority groups in the XUAR.”¹¹² Possibly in response to high-technology surveillance methods used against the Uyghurs, BIS launched a Notice of Inquiry in July 2020 to review existing crime control and detection equipment on the CCL and possibly add new controls on “facial recognition software and other biometric systems for surveillance, nonlethal visual disruption lasers, and long range acoustic devices and their components, software, and technologies.”¹¹³

Military-Civilian Fusion (MCF)

The Trump Administration sought to counter China’s MCF program, in part, through rule-makings designed to tighten controls restricting exports to military end uses, removing the civilian end use license exception, and restrictions on reexports of national security controlled

¹⁰⁸ EAR, 15 C.F.R. §736.2(b)(3).

¹⁰⁹ “Export Administration Regulations: Amendments to General Prohibition Three (Foreign-Produced Direct Product Rule) and the Entity List,” 85 *Federal Register* 29849, May 19, 2020.

¹¹⁰ Ross quoted in “Commerce expands export controls to cover more chips destined for Huawei,” *Inside U.S. Trade*, May 15, 2020.

¹¹¹ Addition of Huawei Non-U.S. Affiliates to the Entity List, the Removal of Temporary General License, and Amendments to General Prohibition Three (Foreign-Produced Direct Product Rule), 85 *Federal Register* 51596, August 20, 2020.

¹¹² “Addition of Certain Entities to the Entity List,” 84 *Federal Register* 54002, October 9, 2019.

¹¹³ “Advanced Surveillance Systems and Other Items of Human Rights Concerns,” 85 *Federal Register* 43532, July 17, 2020.

exports. These rulemakings were not exclusively applicable to China, but rather to a larger group of countries of concern.

Restrictions on Exports to Military End Users

Commerce has expanded licensing requirements on the export, reexport, and transfer, of certain items subject to EAR, to include military end users and to expand the categories of items already controlled for military end uses in China (i.e., nominally civilian uses by military entities).¹¹⁴ Previously, these controls applied to military end-uses and end-users in Russia and Venezuela, but only military end users in China.¹¹⁵ Commerce broadened the definition of military end use to include not only items capable for the use, development, or production of military-related items, but also any item that supports or contributes to the operation, installation, maintenance, repair, overhaul or refurbishing of military items. This likely would expand the range of destinations requiring a license to include civilian operations with contractual business with the Chinese military. Licensing policy is subject to a presumption of denial.

This rule promulgated a new reporting requirement for the export of any item on the CCL to China, Russia, and Venezuela, whether requiring a license or not. Previously, exports valued at under \$2,500 were exempt from this reporting requirement. While this is designed to increase transparency into exports to these destinations, it could place new burdens on firms to report exports even if a license is not required.

In December 2020, BIS created a military end-user (MEU) list to assist exporters to identify military entities subject the military end-use and end-user controls. It is currently populated by 56 Chinese and 45 Russian entities with the potential for Burmese and Venezuelan entities being added. However, BIS cautions the list is not exclusive, and that other parties not on the list may be subject to these controls.¹¹⁶

Removal of Civilian End Use (CIV) License Exception

This rulemaking ends the license exception authorizing unlicensed exports, reexports, for national security-controlled items to civilian end users to a category of countries of concern, which includes China, Russia, Venezuela, and 20 other countries (Group D1).¹¹⁷ A license exception is a general authorization to export or reexport items to destinations under stated conditions—such as knowledge of the end use and end user—that otherwise would require a license. According to BIS, it is removing the CIV license exception “due to the increasing integration of civilian and military technology development in these countries of concern.”

The goods affected by the military end-user and CIV controls largely overlap. The list of items for which these controls are applied include certain materials, chemicals, microorganisms, and toxins; materials processing; electronics design, development, and production; computers; telecommunications; sensors and lasers; marine technologies, aircraft navigation and airborne communications equipment and propulsion systems, space vehicles, and related equipment. In addition, some mass-market items incorporating limited encryption may now require a license for export.

¹¹⁴ Expansion of Export, Reexport, and Transfer (in-Country) Controls for Military End Use or Military End Users in the People’s Republic of China, Russia, or Venezuela, 85 *Federal Register* 23459, April 28, 2020.

¹¹⁵ EAR, 744.21.

¹¹⁶ “Addition of ‘Military End User’ (MEU) List to the Export Administration Regulations and Addition of Entities to the MEU List,” 85 *Federal Register* 83793, December 23, 2020.

¹¹⁷ “Elimination of License Exception Civil End Users (CIV),” 85 *Federal Register* 23470, April 28, 2020.

Nuclear Diversion

On October 11, 2018, the U.S. Department of Energy (DOE) announced “measures to prevent China’s illegal diversion of U.S. civil nuclear technology for military or other unauthorized purposes.” These measures include additional restrictions on U.S.-origin nuclear-related exports to China; such exports require a specific export license or other authorization. Nuclear industry groups have raised concerns about the new policy’s limits on future access to the Chinese market, though the effect of the new policy on nuclear cooperation is unclear.¹¹⁸

Possible Removal of Additional Permissible Reexport (APR) License Exception

If adopted through the regulatory process, this proposed rule would modify the APR license exception to prohibit countries from Wassenaar member states (group A1) and Hong Kong to reexport national-security controlled items to Group D1 countries without further authorization from the United States.¹¹⁹ APR was based on the premise that other Wassenaar member states shared a common threat perception. BIS now believes that some Wassenaar member countries have a different perception of the threat of civilian-military fusion policies in Group D1 countries, which may lead to the approval of reexports subject to U.S. jurisdiction by A1 countries that would not be approved by the United States. This rule was proposed during the Trump Administration; it is unclear whether the Biden Administration will pursue it.

Semiconductor Manufacturing International Corporation (SMIC)

The United States is using export controls to prevent China’s leading semiconductor foundry, SMIC, from obtaining cutting-edge technology. The Commerce Department reportedly advised semiconductor industry firms in a letter on September 25, 2020, that exports to SMIC posed an “unacceptable risk” of being diverted to “military end use.”¹²⁰ Subsequently, BIS placed SMIC, 10 SMIC subsidiaries, and 66 other companies and organizations linked to the People’s Liberation Army, human rights abuses, activities to reclaim disputed territory in the South China Sea, proliferation, or theft of trade secrets on the Entity List.¹²¹ SMIC maintains that it has no relationship with the Chinese military, but an August 2020 report produced by a U.S. government contractor details SMIC’s close ties with China’s defense industry.¹²² In response to the September 2020 report, one observer asserted that export controls on Huawei and SMIC would lead to the design-out of U.S. components—which occurs when foreign producers source non-U.S. components to avoid export controls—avoidance of U.S. machinery, Chinese retaliation, and loss of revenue that could be used for R&D.¹²³ However, the controls on SMIC only entail a presumption of denial on items “uniquely capable” of producing semiconductors at advanced technology nodes of 10 nanometers or less or to “prevent such key enabling technology from

¹¹⁸ For more information, see CRS In Focus IF11050, *New U.S. Policy Regarding Nuclear Exports to China*, by Paul K. Kerr and Mary Beth D. Nikitin.

¹¹⁹ Modification of License Exception Additional Permissible Reexports (APR); Proposed rule, 85 *Federal Register* 23496, April 28, 2020.

¹²⁰ Yuan Yang et al., “China’s biggest chipmaker SMIC hit by US sanctions,” *Financial Times*, September 27, 2020.

¹²¹ Bureau of Industry and Security, “Addition of Entities to the Entity List, Revision of Entry on the Entity List, and Removal of Entities from the Entity List,” advance Federal Register notice, December 18, 2020, <https://public-inspection.federalregister.gov/2020-28031.pdf>. (Bureau of Industry and Security, December 18, 2020).

¹²² “Blue Heron: Semiconductor Manufacturing International Corporation,” SOS International, August 2020.

¹²³ Chad P. Bown, “How Trump’s Export Controls on Semiconductors and Equipment hurt the U.S. Technology Sector,” Peterson Institute of International Economics Trade and Investment Policy Watch, September 28, 2020.

supporting China's military modernization efforts.”¹²⁴ Senator Rubio and Representative McCaul criticized the scope of this rule, claiming that it would be “utterly ineffective” in restricting exports to SMIC in a letter to then-Commerce Secretary Ross.¹²⁵

Phytium

Following revelations that advanced Chinese supercomputing sites with military and state ties are using microcomputer chips designed through the use of U.S. technology,¹²⁶ BIS placed the manufacturer of the microprocessors (Phytium Technologies) and several advanced supercomputer sites on the BIS entity list in April 2021.¹²⁷ The chips in question reportedly are being used in supercomputers to develop hypersonic missile technology.¹²⁸ There have been congressional calls to require a license for exports of electronic design automation (EDA) tools (the equipment making the chips in question) to any entity with ties to the Chinese government. They also request that the foreign-produced direct product rule controls (see above) be applied to exports to Chinese government affiliated entities.¹²⁹

Hong Kong

The Hong Kong Policy Act of 1992 (P.L. 102-383) allowed for continued application of U.S. law with regard to Hong Kong, and continued recognition of all agreements made by the two countries as long as the United States determined that Hong Kong maintained sufficient autonomy.¹³⁰ With regard to export controls, it described the sense of Congress that

the United States should continue to support access by Hong Kong to sensitive technologies controlled under the agreement of the Coordinating Committee for Multilateral Export Controls (commonly referred to as “COCOM”) for so long as the United States is satisfied that such technologies are protected from improper use or export.¹³¹

As a leading port in Asia, Hong Kong developed a sophisticated customs service under British administration and cooperated to interdict and restrict the transshipment of sensitive goods to unauthorized parties. However, over the past several years, the use of Hong Kong as a conduit for PRC entities to obtain controlled technologies has come under scrutiny by Congress.

¹²⁴ Bureau of Industry and Security, December 18, 2020, p. 4.

¹²⁵ Letter available at <https://www.rubio.senate.gov/public/index.cfm/2020/12/rubio-and-mccaul-call-for-strengthening-of-entity-list-rules-for-smic>.

¹²⁶ Ellen Nakasima, Gerry Shih, “China builds advanced weapons systems using American chip technology,” *Washington Post*, April 9, 2021.

¹²⁷ “Addition of Entities to the Entity List,” 86 *Federal Register* 18437, April 9, 2021.

¹²⁸ Ellen Nakasima, Gerry Shih, “China builds advanced weapons systems using American chip technology,” *Washington Post*, April 9, 2021.

¹²⁹ Letter from Sen. Cotton and Rep. McCaul to Secretary of Commerce, <https://www.cotton.senate.gov/imo/media/doc/edaletter.pdf>.

¹³⁰ CRS Legal Sidebar LSB10488, *Revoking Hong Kong's Preferential Trade Status: Legal Framework and Implications*, by Nina M. Hart.

¹³¹ P.L. 102-383 §103(8). The reference to COCOM described the multilateral export control regime, which underpinned items U.S. export controls at the time.

Then-Secretary of State Pompeo reported to Congress on May 28, 2020, that Hong Kong no longer warranted certain differential treatment from China under the HKPA.¹³² President Trump announced that he would begin to curtail such privileged treatment on May 29, 2020.

Executive Order 13936, issued on July 14, 2020, announced the suspension of differential treatment in a number of policy areas.¹³³ These actions have resulted in the suspension of differential export control treatment to Hong Kong. It removes Hong Kong as a destination separate from China for the purposes of EAR. In practice, this means the suspension of 13 license exceptions allowing the shipment to, or transshipment through, Hong Kong without requiring a license that otherwise would be required if destined for China.¹³⁴ Notably, it revokes Hong Kong's ability to utilize license exception Country Group B (GBS), an exception available to over 100 destinations for certain national security-controlled items. This is the license exception used by Hong Kong students and scholars for research that would otherwise require a deemed export license. In addition, Hong Kong is now a proscribed country subject to a presumption of denial for license applications for defense articles and services under the ITAR.

The United States Innovation and Competition Act of 2021

The United States Innovation and Competition Act of 2021 is as an amendment that was filed in the nature of a substitute for the Endless Frontier Act (S. 1260). It contains numerous export control provisions, some hortatory, some prescriptive were included in the act. These provisions would

- Express a statement of policy that modernizing export controls and crafting multilateral controls with allies are components to insure U.S. leadership in in the innovation of critical and emerging technologies. (Sec. 3004).
- Express the sense of Congress that the President or the United States
 - Should “actively” engage the European Union to harmonize policies on export controls and on the implementation of Export Control Reform Act regulations;
 - “Advocate for the listing of more items and technologies to restrict dual use exports controlled at the National Security and above level to the People’s Republic of China under the Wassenaar Arrangement.”
 - Consider establishing a body akin the to the former Coordinating Committee for Multilateral Export Controls (CoCom) (see above) to coordinate U.S. and European Union export control policies to limit exports of sensitive technologies to the PRC. (Sec 3255).
 - Create a Technology Partnership Office at the Department of State lead and promote technology partnerships with the “world’s technology-leading democracies,” including coordinating export control policy through the multilateral control regimes, and licensing of critical infrastructure and dual-use technologies (Sec 3209).
 - Require the Secretary of State to report on the national technology and industrial base (NTIB) and efforts to “facilitate access” of defense articles and services subject to ITAR among nations of NTIB (Australia, Canada, and United Kingdom); as well as on legal, regulatory, or foreign policy obstacles to the facilitation of such access. (Sec. 3232).
 - Authorize the Secretary of State to prevent entry to the United States of aliens seeking to acquire sensitive or emerging technologies. (Sec. 4495).
 - Require sponsors of exchange programs for researchers and scientists to certify a license is either not required to release technology or technical data to the exchange visitor or to prevent access to the controlled technology or technical data until a license obtained; and requires sponsors to submit a plan to prevent unauthorized export or transfer of any controlled items, materials, information, or technology. (Sec. 4497).

¹³² Department of State, 2020 Hong Kong Policy Act Report, <https://www.state.gov/2020-hong-kong-policy-act-report/>

¹³³ Executive Order 13936, 85 *Federal Register* 43413, July 17, 2020.

¹³⁴ “Revision to the Export Administration Regulations: Suspension of License Exceptions,” 85 *Federal Register* 45998, July 31, 2020.

- Require the Secretary of Commerce, in coordination with other agencies, to review items controlled for crime control reasons to determine whether to add controls on additional items with critical capabilities to enable human rights abuses; to impose end-use or end-user controls on persons involved with human rights abuses; and seeks international cooperation in restricting exports to human rights abusers. (Sec. 521 I)
- Encourage U.S. businesses establish a code of conduct for engagement with or in the PRC, committing businesses to, in part
 - that products made and sold to the PRC do not enable its government to undermine fundamental rights and freedoms by facilitating repression and censorship;
 - ensure that businesses do not engage with the PRC military or entity subject to U.S. export controls without a required license (Sec. 5104).

Note: This bill is under consideration in the Senate.

Firearms Transfer

On January 23, 2020, the Departments of State and Commerce published final rules governing movement of items from USML Categories I, II, and III (firearms, close assault weapons and combat shotguns, guns and armament, ammunition/ordnance) to the CCL.¹³⁵ The Commerce Department's January 2020 rule specifies that the department is to control Category I items as CCL 600 series items and category II and III items as CCL 500 series items. These rules were to have taken effect on March 9, 2020. However, on March 6, 2020, a District Court enjoined the State Department from implementing the January final rule "insofar as it alters the status quo restrictions on technical data and software directly related to the production of firearms or firearm parts using a 3D-printer or similar equipment."¹³⁶ In May 2021, the Court of Appeals for the Ninth Circuit vacated the District Court's order and these rules took full effect on May 26, 2021.¹³⁷

The effort to move USML Categories I-III from the USML to the CCL has been contentious. In May 2018, the executive branch published proposed rules governing this transfer. The Senate Committee on Foreign Relations received a State Department notification of these transfers on February 4, 2019.

In a February 26, 2019, letter to then-Secretary of State Michael Pompeo, Senator Robert Menendez wrote that he had placed a "hold on the congressional notification" of the transfers;¹³⁸ this hold prevented these USML changes from taking effect. The Senator invoked the authority contained in AECA Section 38(f), which requires the President to notify the House Foreign Affairs and Senate Foreign Relations Committees at least 30 days before removing any article from the USML. This section requires that such notifications be "in accordance with the

¹³⁵ "International Traffic in Arms Regulations: U.S. Munitions List Categories I, II, and III," 85 *Federal Register* 3819, January 23, 2020; "Control of Firearms, Guns, Ammunition and Related Articles the President Determines No Longer Warrant Control Under the United States Munitions List (USML)," 85 *Federal Register* 4136, January 23, 2020.

¹³⁶ "International Traffic in Arms Regulations: U.S. Munitions List Categories; Preliminary Injunction Ordered by a Federal District Court," 85 *Federal Register* 18445, April 2, 2020.

¹³⁷ DDTC Notice, "District Court Injunction Ordering Certain 3D-Printed Firearm Files to Remain on the USML is Lifted," May 28, 2021; *Department State v. United States Dep't of State*, 996 F.3d 552, 556 (9th Cir. 2021); Department of Commerce, Bureau of Industry and Security, "Control of Firearms, Guns, Ammunition and Related Articles the President Determines No Longer Warrant Control Under the United States Munitions List (USML); Notifying the Public of the Transfer of Jurisdiction of Certain Technology and Software as a Result of a Vacated March 6, 2020 Injunction," 86 *Federal Register* 29189, June 1, 2021.

¹³⁸ Text of letter and accompany press release available at <https://www.menendez.senate.gov/news-and-events/press/menendez-announces-hold-on-trump-admins-proposed-move-to-weaken-regulatory-control-over-us-guns-sales-abroad>.

procedures applicable to reprogramming notifications under section 634A(a) of the Foreign Assistance Act of 1961.” Such notifications do not require congressional approval, but there is an informal arrangement by which committee Members can place a hold on the notice.

The letter specified that Menendez’s hold would “remain in place until such time as” the executive branch “sufficiently addressed” issues concerning congressional review and 3D gun printing. Menendez expressed concern that the AECA-mandated congressional review of USML Category I export licenses will not apply to those items once moved to the CCL.¹³⁹ Menendez also argued that the proposed transfer would decontrol “technical information and blueprint files that would enable” 3D printing of the articles and components.

However, Senator Mendendez did not place a hold on the January 2020 rules and, according to a June 1, 2021 State Department notice, such software and technology is now “exclusively controlled by the EAR.”¹⁴⁰

Russia

Export controls directed at Russia have increased during the Obama, Trump and Biden Administrations. Russia has been the subject of expanded military end-use and end-user controls, and additional Russian entities have been placed on the Entity List and the Military End-User List as noted above.

In 2014, BIS added certain Russian entities to the entity list, imposed controls on certain items for use in Russia’s energy sector intended for energy exploration or production¹⁴¹, and added Russia to controls restricting certain exports to military end-uses and end-users (see above) as a result of Russia’s invasion and occupation of Crimea and Sevastopol and its destabilization activities in Ukraine.¹⁴²

In response to poisoning of British subject and former Russian agent Sergei Skripal and his daughter in the United Kingdom, and the poisoning of opposition leader Alexei Navalny,¹⁴³ Russia has been the target of sanctions under the Chemical and Biological Weapons Control and Warfare Elimination Act of 1991(CBW Act) (P.L. 102-182). These have resulted the tightening of controls reflected in changes to EAR Country Groups and Country Chart.¹⁴⁴

¹³⁹ As noted, commercially licensed arms sales cases of USML category I items valued at \$1 million or more must be notified to Congress for review. Exports of such items transferred to the CCL will not be subject to a congressional notification requirement.

¹⁴⁰ Department of State, “International Traffic in Arms Regulations: U.S. Munitions List Categories; Preliminary Injunction Vacated by a Federal Court of Appeals,” 86 *Federal Register* 29196, June 1, 2021.

¹⁴¹ “Russian Oil Industry Sanctions and Addition of Person to the Entity List,” Bureau of Industry and Security, 79 *Federal Register* 45675, August 6, 2014.

¹⁴² “Russian Sanctions: Addition of Persons to the Entity List and Restrictions on Certain Military End Uses and Military End Users,” 79 *Federal Register* 55608, September 17, 2014.

¹⁴³ For more information about these events, see CRS In Focus IF10962, *Russia, the Skripal Poisoning, and U.S. Sanctions*, by Dianne E. Rennack and Cory Welt and CRS Insight IN11596, *Russia: Poisoning of Alexei Navalny and U.S. Policy*, by Cory Welt. For a comprehensive discussion on sanctions imposed on Russia, see CRS Report R45415, *U.S. Sanctions on Russia*, coordinated by Cory Welt

¹⁴⁴ EAR contain a Country Chart that allows an exporter to determine whether a license is required for the export or reexport of an item on the CCL to a particular destination. EAR also include country groups which “set out countries with respect to relative risk and record of like-minded export controls” and serve as a basis for the availability of exemptions from certain licensing requirements. The groups “may also be used when describing license review policy.” “Amendments to Country Groups for Russia and Yemen under the Export Administration Regulations,” Department of Commerce Bureau of Industry and Security, 85 *Federal Register* 10274, February 24, 2020.

In 2019, the State Department implemented a second round of CBW Act sanctions.¹⁴⁵ Among these sanctions, exports and reexports of goods or technology controlled for chemical and biological weapons controls to Russian state-owned or state-funded enterprises would be subject to a presumption of denial.¹⁴⁶

In March 2021, Secretary of State Antony Blinken, acting under authorities in the CBW Act, determined that Russia “has used chemical or biological weapons in violation of international law or lethal chemical or biological weapons against its own nationals.”¹⁴⁷ As a result, Russia is now subject to an arms embargo under the ITAR.¹⁴⁸ Exports of items controlled for national security purposes under EAR, already subject to a licensing requirement for Russia, will now carry a presumption of denial. The application of these controls in limited circumstances may be waived and licenses considered on a case-by-case basis.¹⁴⁹

In addition, BIS removed Russia from lists of countries eligible to receive more favorable export treatment of certain items by virtue of their membership in the Missile Technology Control Regime (MTCR) and the Nuclear Suppliers’ Group (NSG) (see Multilateral Control Regimes above). While Russia remains a member of these groups, the United States has raised concerns about its “lack of cooperation and accountability for U.S.-origin items and diversion to unauthorized or prohibited proliferation activities.”¹⁵⁰ As a result, exports of items controlled for missile technology and nuclear proliferation end-uses must be licensed and are subject to a presumption of denial. Certain applications for licenses to export items in support of U.S.-Russia civil space cooperation activities or commercial space launches will be reviewed on a case-by-case basis.¹⁵¹

Burma

On March 8, 2021, BIS removed Burma from country group B, which allows a license exemption for items otherwise controlled for National Security purposes and added Burma to country group D:1, which imposes a licensing requirement for those same items. According to this rule, the department took this action to support U.S. “efforts to promote an immediate return to democracy in Burma” following a February 1, 2021, military coup.¹⁵² These measures are also meant to “underscore to Burma’s security forces there must not be violence against civilians, and to stand in solidarity with the people of Burma, who continue to voice their desire for democracy, peace, and rule of law.”¹⁵³ Moreover, the March 2021 rule also “enhances” U.S. efforts “to ensure that

¹⁴⁵ Export controls in the first tranche of CBW sanctions, implemented in 2018, were waived on national security grounds.

¹⁴⁶ Imposition of Additional Sanctions on Russia Under the Chemical and Biological Weapons Control and Warfare Elimination Act of 1991, Department of State, 84 *Federal Register* 44671, August 26, 2019.

¹⁴⁷ “Russia: Implementation of Chemical and Biological Weapons Control and Warfare Elimination Act of 1991 Sanctions,” Department of State, 86 *Federal Register* 14804, March 18, 2021.

¹⁴⁸ *Ibid.*

¹⁴⁹ “Implementation of Chemical and Biological Weapons Control and Warfare Elimination Act of 1991 on Russia-Related Exports and Reexports of Items Controlled for National Security Reasons,” Bureau of Industry and Security, 86 *Federal Register* 14689, March 18, 2021.

¹⁵⁰ “Amendments to Country Groups for Russia and Yemen under the Export Administration Regulations,” Department of Commerce Bureau of Industry and Security, 85 *Federal Register* 10274, February 24, 2020.

¹⁵¹ *Ibid.*

¹⁵² Department of Commerce, Bureau of Industry and Security, “Burma: Implementation of Sanctions,” 86 *Federal Register* 13179, March 8, 2021.

¹⁵³ *Ibid.*

items subject to EAR are not available to Burma's military and security services" and makes Burma subject to military end-use and military end-user restrictions.¹⁵⁴

Issues for Congress

The enactment of ECRA and application of export control authority by the Trump Administration facilitated new roles for export controls as a policy tool. While ECRA largely reflects the organizational structure currently in place, the law imposed new policy mandates on the executive branch. Export controls have also become a tool to address growing concerns about how China may be using access to U.S. technology to advance its military capabilities and surveil its domestic and potentially overseas populations as its technology companies expand overseas. Some observers characterize a broader struggle with China for technological supremacy that has significant ramifications for the United States' international power and economic competitiveness. Congress may consider the following issues in its oversight and legislative roles on export controls.

Export Controls and their Relationship to a Coherent Economic and National Security Policy

In recent years, the U.S. Congress, the executive branch, and the broader policy community have paid greater attention to the convergence of economic and security policy issues. Recently, some experts have urged that greater attention be paid in clarifying what the aims of U.S. economic and national security should be and how various delegations of trade authority (e.g., export controls, IEEPA, Section 232 of the Trade Expansion Act of 1962) should be mobilized to coordinate and balance economic and security policy to advance U.S. national interests.

Emerging and Foundational Technologies

ECRA directed Commerce, in conjunction with other agencies, to identify and control emerging and foundational technologies. While several discrete technologies have been identified, some Members of Congress have criticized the pace of these determinations. Congress may evaluate both the pace and effectiveness of this Commerce-led effort. Why have relatively few technologies been identified? Are there issues with the interagency process? Are there alternative methods or institutional structures available should Members assess the effectiveness and challenges of the current process?

Deemed Export Licensing

Given the recent publicity surrounding efforts by China and other nations to obtain U.S. advanced technology through espionage, Congress may inquire into the process by which licenses are granted for deemed exports as well as the vetting process undertaken by academic and research institutions.

Multilateral Controls

While most observers concur that multilateral controls are more effective than unilateral controls in preventing undesirable exports, other governments' commercial considerations and differing threat perceptions have frequently complicated reaching agreement on such controls. In addition,

¹⁵⁴ Ibid.

while the vast majority of items on the CCL are based on the lists of the multilateral Wassenaar Arrangement or other nonproliferation control regimes, each country makes its own licensing decisions, and in some cases, such as the Wassenaar Arrangement, there are arguably no enforcement mechanisms or effective processes for dual-use controls by allies on products that are available outside the United States. Congress may ask questions regarding the state of multilateral export controls and potential need for reform, including the following: Do U.S. European and Asian allies share a common threat perception of China? Is U.S. pressure to restrict individual sales an effective method to stop the export of certain advanced technologies, or is a more holistic approach warranted? Can the Wassenaar Arrangement, in particular, be made more effective and, if so, how? Are there situations where unilateral controls nonetheless are warranted?

Entity List (EL)

Some observers questioned the Trump Administration's increased use of the entity list while others questioned why so many PRC entities of concern are not on the list. The EL originally was established to provide exporters with a list of entities known to have engaged in proliferation, transshipment, or diversion to weapons of mass destruction (WMD) programs and to publicize licensing criteria for those entities. However, inclusion on the list has become a penalty for entities engaging in activities other than directly violating U.S. export control laws to which the U.S. government objects. Congress may examine the scope of the Entity List and its current usage.

Stakeholder Views

Industry representatives often argue that sales of dual-use technologies to China are necessary for their companies' global competitiveness and ability to fund the research and development necessary for future products. They also argue that unilateral controls on technologies that are available outside the United States likely will lead to U.S. products being increasingly displaced by foreign competitors from Europe and other countries. Congress may seek to evaluate this argument with questions such as: Is this business model consistent with the national interest, or sustainable for industries themselves? What are the strategic ramifications of the U.S. technology sector's growing dependence on sales to China's government either directly to state controlled or funded companies or indirectly through the technology and industry efforts the government sponsors in strategic sectors such as aerospace and semiconductors? Should the U.S. government contribute to funding for U.S. industry-specific R&D? Should the sale of commodity products be restricted in the same way as advanced technology? Are U.S. allies pursuing similar efforts to enhance their export control regimes, particularly for dual-use products, and how best can the United States pursue common approaches in line with fundamental shared interests?

Export Control Reform Initiative (ECRI)

ECRI envisioned the creation of a single licensing agency, a single enforcement agency, the "mirroring" with and eventual merger of the USML and CCL. Although the initiative produced notable changes to the export control system, ECRI did not achieve its final goals during the Obama Administration and were not pursued during the Trump Administration. Congress may request the Biden Administration articulate its position on the goals. Are such goals in conflict or need to be reconsidered in light of concerns that have emerged since they were proposed? In particular, how would such process reforms, if enacted, work to facilitate or to restrict certain dual-use technology trade with countries of concern?

Appendix A. Basic Export Control Characteristics

Table A-I. Basic Export Control Characteristics

Characteristic	Dual-Use	Munitions	Nuclear
Legislative Authority	Export Control Reform Act of 2018 (ECRA); International Emergency Economic Powers Act of 1977 (IEEPA)	Arms Export Control Act of 1968, 1976 (AECA)	Atomic Energy Act of 1954
Agency of Jurisdiction	Bureau of Industry and Security (BIS)(Commerce)	Directorate of Defense Trade Controls (DDTC)(State)	- Nuclear Regulatory Commission (NRC) (facilities and material) - Department of Energy (DOE) (technology) - BIS (“outside the core” civilian power plant equipment) - DDTC (nuclear items in defense articles)
Implementing Regulations	Export Administration Regulations (EAR) (15 C.F.R. 730 et seq)	International Traffic in Arms Regulations (ITAR) (22 C.F.R. 120 et seq)	10 C.F.R. 110—Export and Import of Nuclear Material and Equipment (NRC) 10 C.F.R. 810—Assistance to Foreign Atomic Energy Activities (DOE)
Control List	Commerce Control List (CCL)	Munitions List (USML)	- List of Nuclear Facilities and Equipment; List of Nuclear Materials (NRC) - Nuclear Referral List (CCL) - USML - Activities Requiring Specific Authorization (DOE)
Relation to Multilateral Controls	- Wassenaar Arrangement (dual-use) - Missile Technology Control Regime (MTCR) - Australia Group (AG) - Nuclear Suppliers Group	- Wassenaar Arrangement (munitions) - MTCR - AG	Nuclear Suppliers Group
Licensing Policy	Based on item, country, or both. Antiterrorism controls proscribe exports to four countries for nearly all CCL listings	Most Munitions License items require licenses; 20 proscribed countries	- General/Specific Licenses (NRC) - General/Specific Authorizations (DOE)

Source: Congressional Research Service (CRS).

Table A-2. Congressional Notification Requirements for Sales of Defense Articles

Destination	Type of transaction	Notification time (Cal. days)	Transactions and Value Thresholds			
			Major Defense Equipment	Defense Articles	Design and Construction	Firearms
NATO +5	FMS	15 days	\$25 million	\$100 million	\$300 million	—
	DCS	15 days	\$25 million	\$100 million	—	\$1 million
Other Destinations	FMS	30 days	\$14 million	\$50 million	\$200 million	—
	DCS	30 days	\$14 million	\$50 million	—	\$1 million

Source: Arms Export Control Act.

Notes: All of the transactions include “sale, enhancement, or upgrading” of the relevant items. FMS: Foreign Military Sales; DCS: Direct Commercial Sales.

Table A-3. Basic Export Control Characteristics

Characteristic	Dual-Use	Munitions	Nuclear
Legislative Authority	Export Control Reform Act of 2018 (ECRA); International Emergency Economic Powers Act of 1977 (IEEPA)	Arms Export Control Act of 1968, 1976 (AECA)	Atomic Energy Act of 1954
Agency of Jurisdiction	Bureau of Industry and Security (BIS)(Commerce)	Directorate of Defense Trade Controls (DDTC)(State)	- Nuclear Regulatory Commission (NRC) (facilities and material) - Department of Energy (DOE) (technology) - BIS (“outside the core” civilian power plant equipment) - DDTC (nuclear items in defense articles)
Implementing Regulations	Export Administration Regulations (EAR) (15 C.F.R. 730 et seq)	International Traffic in Arms Regulations (ITAR) (22 C.F.R. 120 et seq)	10 C.F.R. 110—Export and Import of Nuclear Material and Equipment (NRC) 10 C.F.R. 810—Assistance to Foreign Atomic Energy Activities (DOE)

Characteristic	Dual-Use	Munitions	Nuclear
Control List	Commerce Control List (CCL)	Munitions List (USML)	- List of Nuclear Facilities and Equipment; List of Nuclear Materials (NRC) - Nuclear Referral List (CCL) - USML - Activities Requiring Specific Authorization (DOE)
Relation to Multilateral Controls	- Wassenaar Arrangement (dual-use) - Missile Technology Control Regime (MTCR) - Australia Group (AG) - Nuclear Suppliers Group	- Wassenaar Arrangement (munitions) - MTCR - AG	Nuclear Suppliers Group
Licensing Policy	Based on item, country, or both. Antiterrorism controls proscribe exports to four countries for nearly all CCL listings	Most Munitions License items require licenses; 20 proscribed countries	- General/Specific Licenses (NRC) - General/Specific Authorizations (DOE)

Source: Congressional Research Service (CRS).

Table A-4. Export Enforcements

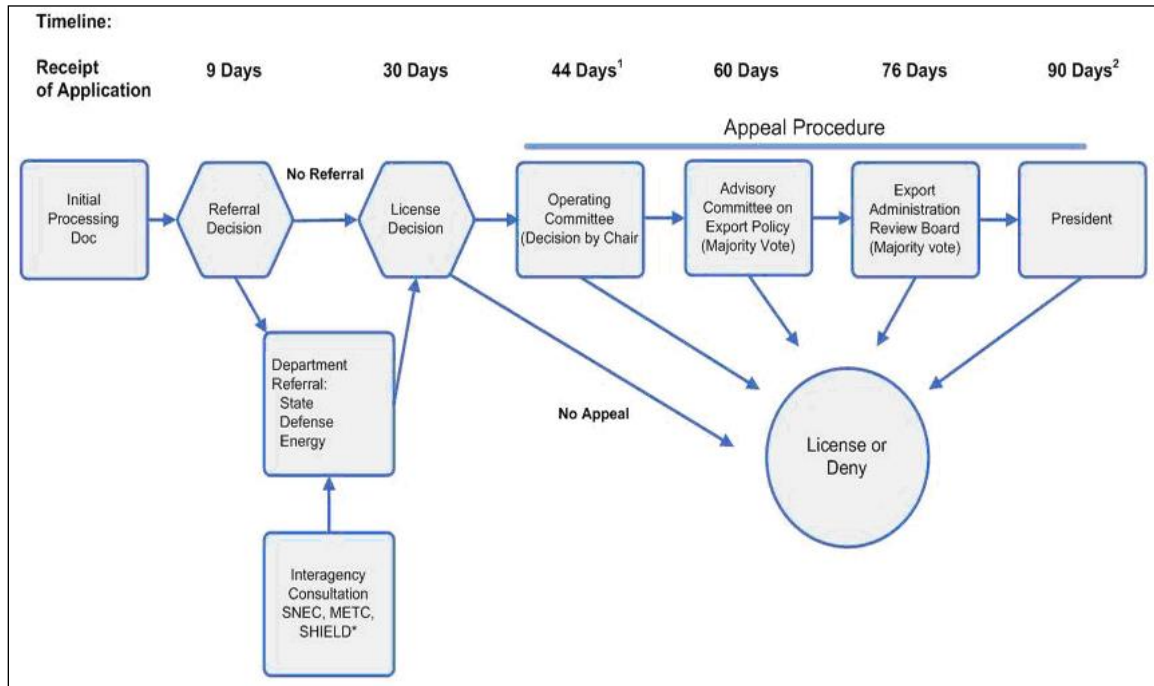
Characteristic	Dual-Use	Munitions	Nuclear
Enforcement	Office of Export Enforcement (BIS) (OEE) (domestic) Homeland Security (DHS): Immigration and Customs Enforcement (ICE); Customs and Border Protection (CBP) Justice (DOJ): National Security Division; FBI	- Office of Defense Trade Compliance (DDTC) - Defense Criminal Investigation Service (DCIS)(DOD) Defense Security Service (DOD) - DHS: ICE, CBP - DOJ: National Security Division; FBI	- Office of Enforcement (NRC) - BIS-OEE - DDTC-ODTC - DCIS (DOD) - DHS: ICE, CBP - DOJ: National Security Division; FBI
Penalties	- Criminal: \$1 million/20 years imprisonment - Civil: Denial of export privileges; Up to \$300,000 or twice the monetary value of the transaction, whichever greater	- Criminal: \$1 million/20 years imprisonment - Civil: Penalties increase annually pursuant to Section 701 of the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (P.L. 114-74). - Denial of export privileges.	- Criminal: Individual—\$250,000/12 years to life imprisonment; Firm—\$500,000 (NRC and DOE) - Civil: Penalties increase annually pursuant to Section 701 of the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (P.L. 114-74).

Source: Congressional Research Service (CRS).

Appendix B. Dual-Use Export Licensing Process

Figure B-1. Dual-Use Export Licensing Process

(Executive Order 12981, December 1995)



Source: Prepared by Ian F. Fergusson, Congressional Research Service (CRS).

Notes:

¹ The time periods for the appeal procedure reflect a 5-day window of appeal and an 11-day period for each body to make a decision.

² A license application must be resolved or appealed to the President within 90 days. The order does place a time limit on a presidential decision.

* SNEC, Sub-Groups on Nuclear Export Policy, MTEC, Missile Technology/Export Control Group; SHIELD Chemical and Biological Weapons Control Group.

Appendix C. List of Acronyms

AECA—Arms Export Control Act
AES—Automated Export System
BIS—Bureau of Industry and Security, Department of Commerce
CBP—Customs and Border Protection, Department of Homeland Security
CC—Crime Control and Detection Equipment controls
CCL—Commerce Control List
CML—Commerce Munitions List
CPI—Counter-Proliferation Investigations
DCIS—Defense Criminal Investigation Service
DDTC—Directorate of Defense Trade Controls, Department of State
DHS—Department of Homeland Security
DOJ—Department of Justice
DTSA—Defense Technology Security Administration
ECA 1949—Export Control Act of 1949
EAA 1969—Export Administration Act of 1969
EAA 1979—Export Administration Act of 1979
EAR—Export Administration Regulations
ECRI—Export Control Reform Act
ECCN—Export Control Classification Number
ECRI—Export Control Reform Initiative
EECC—Export Enforcement Coordination Center
EL—Entity List
FP—Foreign Policy Controls
GAO—Government Accountability Office
IEEPA—International Emergency Economic Powers Act of 1977
ICE—Immigration and Customs Enforcement Agency, Department of Homeland Security
ISN—International Security and Nonproliferation Bureau, Department of State
ITA—International Trade Administration, Department of Commerce
ITAR—International Traffic in Arms Regulations
MTCR—Missile Technology Control Regime
NRC—Nuclear Regulatory Commission
NS—National Security Controls

NSG—Nuclear Suppliers Group

OEE—Office of Export Enforcement

ODTC—Office of Defense Trade Compliance, DDTC

OFAC—Office of Foreign Assets Control, Department of the Treasury

SI—Significant Items Controls

SL—Surreptitious Listening Controls

SS—Short Supply Controls

STA—Strategic Trade Authorization

TWEA—Trading with the Enemy Act of 1917

USML—U.S. Munitions List

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