To require the Secretary of Energy to establish a Nuclear Fuel Security Program, expand the American Assured Fuel Supply Program, and submit a report on a civil nuclear credit program, and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mr. MANCHIN (for himself, Mr. BARRASSO, and Mr. RISCH) introduced the following bill; which was read twice and referred to the Committee on

A BILL

To require the Secretary of Energy to establish a Nuclear Fuel Security Program, expand the American Assured Fuel Supply Program, and submit a report on a civil nuclear credit program, and for other purposes.

Be it enacted by the Senate and House of Representa-
tives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Nuclear Fuel Security Act of 2023”.

SEC. 2. U.S. NUCLEAR FUEL SECURITY INITIATIVE.

(a) SENSE OF CONGRESS.—It is the sense of Con-
(1) the Department should—

(A) prioritize activities to increase domestic production of low-enriched uranium; and

(B) accelerate efforts to establish a domestic high-assay, low-enriched uranium enrichment capability; and

(2) if domestic enrichment of high-assay, low-enriched uranium will not be commercially available at the scale needed in time to meet the needs of the advanced nuclear reactor demonstration projects of the Department, the Secretary shall consider and implement, as necessary—

(A) all viable options to make high-assay, low-enriched uranium produced from inventories owned by the Department available in a manner that is sufficient to maximize the potential for the Department to meet the needs and schedules of advanced nuclear reactor developers, without impacting existing Department missions, until such time that commercial enrichment and deconversion capability for high-assay, low-enriched uranium exists at a scale sufficient to meet future needs; and

(B) all viable options for partnering with countries that are allies or partners of the
United States to meet those needs and schedules until that time.

(b) Objectives.—The objectives of this section are—

(1) to expeditiously increase domestic production of low-enriched uranium;

(2) to expeditiously increase domestic production of high-assay, low-enriched uranium by an annual quantity, and in such form, determined by the Secretary to be sufficient to meet the needs of—

(A) advanced nuclear reactor developers;

and

(B) the consortium;

(3) to ensure the availability of domestically produced, converted, enriched, deconverted, and reduced uranium in a quantity determined by the Secretary, in consultation with U.S. nuclear energy companies, to be sufficient to address a reasonably anticipated supply disruption;

(4) to address gaps and deficiencies in the domestic production, conversion, enrichment, deconversion, and reduction of uranium by partnering with countries that are allies or partners of the United States if domestic options are not practicable;
(5) to ensure that, in the event of a supply dis-
ruption in the nuclear fuel market, a reserve of nu-
clear fuels is available to serve as a backup supply
to support the nuclear nonproliferation and civil nu-
clear energy objectives of the Department;

(6) to support enrichment, deconversion, and
reduction technology deployed in the United States;
and

(7) to ensure that, until such time that domes-
tic enrichment and deconversion of high-assay, low-
enriched uranium is commercially available at the
scale needed to meet the needs of advanced nuclear
reactor developers, the Secretary considers and im-
plements, as necessary—

(A) all viable options to make high-assay,
low-enriched uranium produced from inven-
tories owned by the Department available in a
manner that is sufficient to maximize the po-
tential for the Department to meet the needs
and schedules of advanced nuclear reactor de-
velopers; and

(B) all viable options for partnering with
countries that are allies or partners of the
United States to meet those needs and sched-
ules.
(c) DEFINITIONS.—In this section:

(1) ADVANCED NUCLEAR REACTOR.—The term “advanced nuclear reactor” has the meaning given the term in section 951(b) of the Energy Policy Act of 2005 (42 U.S.C. 16271(b)).

(2) ASSOCIATED ENTITY.—The term “associated entity” means an entity that—

(A) is owned, controlled, or dominated by—

(i) the government of a country that is an ally or partner of the United States; or

(ii) an associated individual; or

(B) is organized under the laws of, or otherwise subject to the jurisdiction of, a country that is an ally or partner of the United States, including a corporation that is incorporated in such a country.

(3) ASSOCIATED INDIVIDUAL.—The term “associated individual” means an alien who is a national of a country that is an ally or partner of the United States.

(4) CONSORTIUM.—The term “consortium” means the consortium established under section

(5) DEPARTMENT.—The term “Department” means the Department of Energy.

(6) HIGH-ASSAY, LOW-ENRICHED URANIUM; HALEU.—The term “high-assay, low-enriched uranium” or “HALEU” means high-assay low-enriched uranium (as defined in section 2001(d) of the Energy Act of 2020 (42 U.S.C. 16281(d))).

(7) LOW-ENRICHED URANIUM; LEU.—The term “low-enriched uranium” or “LEU” means each of—

(A) low-enriched uranium (as defined in section 3102 of the USEC Privatization Act (42 U.S.C. 2297h)); and

(B) low-enriched uranium (as defined in section 3112A(a) of that Act (42 U.S.C. 2297h–10a(a))).

(8) PROGRAMS.—The term “Programs” means—

(A) the Nuclear Fuel Security Program established under subsection (d)(1);

(B) the American Assured Fuel Supply Program of the Department; and
(C) the HALEU for Advanced Nuclear Reactor Demonstration Projects Program established under subsection (d)(3).

(9) **SECRETARY.**—The term “Secretary” means the Secretary of Energy.

(10) **U.S. NUCLEAR ENERGY COMPANY.**—The term “U.S. nuclear energy company” means a company that—

(A) is organized under the laws of, or otherwise subject to the jurisdiction of, the United States; and

(B) is involved in the nuclear energy industry.

(d) **ESTABLISHMENT AND EXPANSION OF PROGRAMS.**—The Secretary, consistent with the objectives described in subsection (b), shall—

(1) establish a program, to be known as the “Nuclear Fuel Security Program”, to increase the quantity of LEU and HALEU produced by U.S. nuclear energy companies;

(2) expand the American Assured Fuel Supply Program of the Department to ensure the availability of domestically produced, converted, enriched, deconverted, and reduced uranium in the event of a supply disruption; and
(3) establish a program, to be known as the “HALEU for Advanced Nuclear Reactor Demonstration Projects Program”—

(A) to maximize the potential for the Department to meet the needs and schedules of advanced nuclear reactor developers until such time that commercial enrichment and deconversion capability for HALEU exists in the United States at a scale sufficient to meet future needs; and

(B) where practicable, to partner with countries that are allies or partners of the United States to meet those needs and schedules until that time.

(e) Nuclear Fuel Security Program.—

(1) In general.—In carrying out the Nuclear Fuel Security Program, the Secretary—

(A) shall—

(i) not later than 180 days after the date of enactment of this Act, enter into 2 or more contracts to begin acquiring not less than 100 metric tons per year of LEU by December 31, 2026 (or the earliest operationally feasible date thereafter), to ensure diversity of supply in domestic ura-
ium mining, conversion, enrichment, and
deconversion capacity and technologies, in-
cluding new capacity, among U.S. nuclear
energy companies;

(ii) not later than 180 days after the
date of enactment of this Act, enter into 2
or more contracts with members of the
consortium to begin acquiring not less than
20 metric tons per year of HALEU by De-
cember 31, 2027 (or the earliest operation-
ally feasible date thereafter), from U.S.
nuclear energy companies;

(iii) utilize only uranium produced,
converted, enriched, deconverted, and re-
duced in—

(I) the United States; or

(II) if domestic options are not
practicable, a country that is an ally
or partner of the United States; and

(iv) to the maximum extent prac-
ticable, ensure that the use of domestic
uranium utilized as a result of that pro-
gram does not negatively affect the eco-
nomic operation of nuclear reactors in the
United States; and
(B)(i) may not make commitments under this subsection (including cooperative agreements (used in accordance with section 6305 of title 31, United States Code), purchase agreements, guarantees, leases, service contracts, or any other type of commitment) for the purchase or other acquisition of HALEU or LEU unless—

(I) funds are specifically provided for those purposes in advance in appropriation Acts enacted after the date of enactment of this Act; or

(II) the commitment is funded entirely by funds made available to the Secretary from the account described in subsection (i)(2)(B); and

(ii) may make a commitment described in clause (i) only—

(I) if the full extent of the anticipated costs stemming from the commitment is recorded as an obligation at the time that the commitment is made; and

(II) to the extent of that up-front obligation recorded in full at that time.
(2) CONSIDERATIONS.—In carrying out paragraph (1)(A)(ii), the Secretary shall consider and, if appropriate, implement—

(A) options to ensure the quickest availability of commercially enriched HALEU, including—

(i) partnerships between 2 or more commercial enrichers; and

(ii) utilization of up to 10-percent enriched uranium as feedstock in demonstration-scale or commercial HALEU enrichment facilities;

(B) options to partner with countries that are allies or partners of the United States to provide LEU and HALEU for commercial purposes;

(C) options that provide for an array of HALEU—

(i) enrichment levels;

(ii) output levels to meet demand; and

(iii) fuel forms, including uranium metal and oxide; and

(D) options—

(i) to replenish, as necessary, Department stockpiles of uranium that were in-
tended to be downblended for other purposes, but were instead used in carrying out activities under the HALEU for Advanced Nuclear Reactor Demonstration Projects Program;

(ii) to continue supplying HALEU to meet the needs of the recipients of an award made pursuant to the funding opportunity announcement of the Department numbered DE–FOA–0002271 for Pathway 1, Advanced Reactor Demonstrations; and

(iii) to make HALEU available to other advanced nuclear reactor developers and other end-users.

(3) AVOIDANCE OF MARKET DISRUPTIONS.—In carrying out the Nuclear Fuel Security Program, the Secretary, to the extent practicable and consistent with the purposes of that program, shall not disrupt or replace market mechanisms by competing with U.S. nuclear energy companies.

(f) EXPANSION OF THE AMERICAN ASSURED FUEL SUPPLY PROGRAM.—The Secretary, in consultation with U.S. nuclear energy companies, shall—
(1) expand the American Assured Fuel Supply Program of the Department by merging the operations of the Uranium Reserve Program of the Department with the American Assured Fuel Supply Program; and

(2) in carrying out the American Assured Fuel Supply Program of the Department, as expanded under paragraph (1)—

(A) maintain, replenish, diversify, or increase the quantity of uranium made available by that program in a manner determined by the Secretary to be consistent with the purposes of that program and the objectives described in subsection (b);

(B) utilize only uranium produced, converted, enriched, deconverted, and reduced in—

(i) the United States; or

(ii) if domestic options are not practicable, a country that is an ally or partner of the United States;

(C) make uranium available from the American Assured Fuel Supply, subject to terms and conditions determined by the Secretary to be reasonable and appropriate;
(D) refill and expand the supply of ura-
nium in the American Assured Fuel Supply, in-
cluding by maintaining a limited reserve of ura-
nium to address a potential event in which a
domestic or foreign recipient of uranium experi-
ences a supply disruption for which uranium
cannot be obtained through normal market
mechanisms or under normal market conditions;
and

(E) take other actions that the Secretary
determines to be necessary or appropriate to
address the purposes of that program and the
objectives described in subsection (b).

(g) HALEU FOR ADVANCED NUCLEAR REACTOR
DEMONSTRATION PROJECTS PROGRAM.—

(1) ACTIVITIES.—On enactment of this Act, the
Secretary shall immediately accelerate and, as nec-
essary, initiate activities to make available from in-
ventories or stockpiles owned by the Department and
made available to the consortium, HALEU for use
in advanced nuclear reactors that cannot operate on
uranium with lower enrichment levels or on alternate
fuels, with priority given to the awards made pursu-
ant to the funding opportunity announcement of the
Department numbered DE–FOA–0002271 for Path-
way I, Advanced Reactor Demonstrations, with additional HALEU to be made available to other advanced nuclear reactor developers, as the Secretary determines to be appropriate.

(2) **QUANTITY.**—In carrying out activities under this subsection, the Secretary shall consider and implement, as necessary, all viable options to make HALEU available in quantities and forms sufficient to maximize the potential for the Department to meet the needs and schedules of advanced nuclear reactor developers, including by seeking to make available—

(A) by September 30, 2024, not less than 3 metric tons of HALEU;

(B) by December 31, 2025, not less than an additional 8 metric tons of HALEU; and

(C) by June 30, 2026, not less than an additional 10 metric tons of HALEU.

(3) **FACTORS FOR CONSIDERATION.**—In carrying out activities under this subsection, the Secretary shall take into consideration—

(A) options for providing HALEU from a stockpile of uranium owned by the Department, including—
(i) uranium that has been declared excess to national security needs during or prior to fiscal year 2023;

(ii) uranium that—

(I) directly meets the needs of advanced nuclear reactor developers;

but

(II) has been previously used or fabricated for another purpose;

(iii) uranium that can meet the needs of advanced nuclear reactor developers after removing radioactive or other contaminants that resulted from previous use or fabrication of the fuel for research, development, demonstration, or deployment activities of the Department, including activities that reduce the environmental liability of the Department by accelerating the processing of uranium from stockpiles designated as waste;

(iv) uranium from a high-enriched uranium stockpile, which can be blended with lower assay uranium to become HALEU to meet the needs of advanced nuclear reactor developers; and
(v) uranium from stockpiles intended for other purposes (excluding stockpiles intended for national security needs), but for which uranium could be swapped or replaced in time in such a manner that would not negatively impact the missions of the Department;

(B) options for expanding, or establishing new, capabilities or infrastructure to support the processing of uranium from Department inventories;

(C) options for accelerating the availability of HALEU from HALEU enrichment demonstration projects of the Department;

(D) options for providing HALEU from domestically enriched HALEU procured by the Department through a competitive process pursuant to the Nuclear Fuel Security Program established under subsection (d)(1);

(E) options to replenish, as needed, Department stockpiles of uranium made available pursuant to subparagraph (A) with domestically enriched HALEU procured by the Department through a competitive process pursuant to the
Nuclear Fuel Security Program established under subsection (d)(1); and

(F) options that combine 1 or more of the approaches described in subparagraphs (A) through (E) to meet the deadlines described in paragraph (2).

(4) LIMITATIONS.—

(A) CERTAIN SERVICES.—The Secretary shall not barter or otherwise sell or transfer uranium in any form in exchange for services relating to—

(i) the final disposition of radioactive waste from uranium that is the subject of a contract for sale, resale, transfer, or lease under this subsection; or

(ii) environmental cleanup activities.

(B) CERTAIN COMMITMENTS.—In carrying out activities under this subsection, the Secretary—

(i) may not make commitments under this subsection (including cooperative agreements (used in accordance with section 6305 of title 31, United States Code), purchase agreements, guarantees, leases, service contracts, or any other type of com-
mitment) for the purchase or other acquisition of HALEU or LEU unless—

(I) funds are specifically provided for those purposes in advance in appropriations Acts enacted after the date of enactment of this Act; or

(II) the commitment is funded entirely by funds made available to the Secretary from the account described in subsection (i)(2)(B); and

(ii) may make a commitment described in clause (i) only—

(I) if the full extent of the anticipated costs stemming from the commitment is recorded as an obligation at the time that the commitment is made; and

(II) to the extent of that up-front obligation recorded in full at that time.

(5) _SUNSET._—The authority of the Secretary to carry out activities under this subsection shall terminate on the date on which the Secretary notifies Congress that the HALEU needs of advanced nuclear reactor developers can be fully met by commer-
cial HALEU suppliers in the United States, as determined by the Secretary, in consultation with U.S. nuclear energy companies.

(h) **DOMESTIC SOURCING CONSIDERATIONS.**—

(1) **IN GENERAL.**—Except as provided in paragraph (2), the Secretary may only carry out an activity in connection with 1 or more of the Programs if—

(A) the activity promotes manufacturing in the United States associated with uranium supply chains; or

(B) the activity relies on resources, materials, or equipment developed or produced—

(i) in the United States; or

(ii) in a country that is an ally or partner of the United States by—

(I) the government of that country;

(II) an associated entity; or

(III) a U.S. nuclear energy company.

(2) **WAIVER.**—The Secretary may waive the requirements of paragraph (1) with respect to an activity if the Secretary determines a waiver to be nec-
necessary to achieve 1 or more of the objectives described in subsection (b).

(i) Reasonable Compensation.—

(1) In general.—In carrying out activities under this section, the Secretary shall ensure that any LEU and HALEU made available by the Secretary under 1 or more of the Programs is subject to reasonable compensation, taking into account the fair market value of the LEU or HALEU and the purposes of this section.

(2) Availability of certain funds.—

(A) In general.—Notwithstanding section 3302(b) of title 31, United States Code, revenues received by the Secretary from the sale or transfer of fuel feed material acquired by the Secretary pursuant to a contract entered into under clause (i) or (ii) of subsection (e)(1)(A) shall—

(i) be deposited in the account described in subparagraph (B); 

(ii) be available to the Secretary for carrying out the purposes of this section, to reduce the need for further appropriations for those purposes; and 

(iii) remain available until expended.
(B) REVOLVING FUND.—There is established in the Treasury an account into which the revenues described in subparagraph (A) shall be—

(i) deposited in accordance with clause (i) of that subparagraph; and

(ii) made available in accordance with clauses (ii) and (iii) of that subparagraph.

(j) NUCLEAR REGULATORY COMMISSION.—The Nuclear Regulatory Commission shall prioritize and expedite consideration of any action related to the Programs to the extent permitted under the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.) and related statutes.

(k) USEC PRIVATIZATION ACT.—The requirements of section 3112(d)(2) of the USEC Privatization Act (42 U.S.C. 2297h–10(d)(2)) shall not apply to activities related to the Programs.

(l) NATIONAL SECURITY NEEDS.—The Secretary shall only make available to a member of the consortium under this section for commercial use or use in a demonstration project material that the President has determined is not necessary for national security needs, subject to the condition that the material made available shall not include any material that the Secretary determines to be
necessary for the National Nuclear Security Administra-
tion or any critical mission of the Department.

(m) INTERNATIONAL AGREEMENTS.—This section
shall be applied in a manner consistent with the obliga-
tions of the United States under international agreements.

(n) AUTHORIZATION OF APPROPRIATIONS.—In addi-
tion to amounts otherwise available, there are authorized
to be appropriated to the Secretary to carry out activities
under this section $3,500,000,000 for fiscal year 2023,
to remain available until September 30, 2032, of which
the Secretary may use up to $1,000,000,000 by Sep-
tember 30, 2028, to carry out the HALEU for Advanced
Nuclear Reactor Demonstration Projects Program.

SEC. 3. REPORT ON CIVIL NUCLEAR CREDIT PROGRAM.

Not later than 180 days after the date of enactment
of this Act, the Secretary of Energy shall submit to the
appropriate committees of Congress a report that identi-
fies the anticipated funding requirements for the civil nu-
clear credit program described in section 40323 of the In-
frastucture Investment and Jobs Act (42 U.S.C. 18753),
taking into account—

(1) the zero-emission nuclear power production
credit authorized by section 45U of the Internal
Revenue Code of 1986; and
(2) any increased fuel costs associated with the use of domestic fuel that may arise from the implementation of that program.