access telecommunications relay services, please dial 7–1–1.

SUPPLEMENTARY INFORMATION: On June 7, 2023, we published the NIA in the **Federal Register** (88 FR 37222). Under the NIA, applications are due on August 8, 2023. We are extending the deadline for transmittal of applications for affected applicants (as defined under *Eligibility*) to allow these applicants more time—until August 16, 2023—to prepare and submit their applications.

Eligibility: The application deadline extension applies only to eligible applicants under the FY 2023 FSCS competition that are affected applicants. An eligible applicant for this competition is defined in the NIA. To qualify as an affected applicant, the applicant must have a mailing address that is located in the federally declared disaster area and must provide appropriate supporting documentation, if requested.

The applicable federally declared disaster area under this declaration is the area in which assistance to individuals or public assistance has been authorized under FEMA's disaster declaration for New York Severe Storms and Flooding (DR–4723–NY), Vermont Severe Storms, Flooding, Landslides, and Mudslides (DR–4720–VT), and Oklahoma Severe Storms, Straight-line Winds, and Tornadoes (DR–4721–OK). See the disaster declarations at: *https://www.fema.gov/disaster/4723*, *https://www.fema.gov/disaster/4720*, and *https://www.fema.gov/disaster/4721.*

Affected applicants that have already timely submitted applications under the FY 2023 FSCS competition may resubmit applications on or before the extended application deadline of August 16, 2023, but are not required to do so. If a new application is not submitted, the Department will use the application that was submitted by the original deadline. If a new application is submitted, the Department will consider the application that is last submitted and timely received by 11:59:59 p.m., Eastern Time, on August 16, 2023.

Any application submitted by an affected applicant under the extended deadline must contain evidence (*e.g.,* the applicant organization mailing address) that the applicant is located in one of the applicable federally declared disaster areas and, if requested, must provide appropriate supporting documentation.

The application period is not extended for all applicants. Applications from applicants that are not affected, as defined above, will not be accepted past the August 8, 2023, deadline.

Note: All information in the NIA for this competition remains the same, except for the extended date for the transmittal of applications for affected applicants and the deadline for intergovernmental review.

Program Authority: Sections 4621–4623 and 4625 of the Elementary and Secondary Education Act of 1965, as amended.

Accessible Format: On request to the program contact person listed under **FOR FURTHER INFORMATION CONTACT**, individuals with disabilities can obtain this document, the NIA, and a copy of the application package in an accessible format. The Department will provide the requestor with an accessible format that may include Rich Text Format (RTF) or text format (txt), a thumb drive, an MP3 file, braille, large print, audiotape, or compact disc, or other accessible format.

Electronic Access to This Document: The official version of this document is the document published in the **Federal Register**. You may access the official edition of the **Federal Register** and the Code of Federal Regulations at *www.govinfo.gov.* At this site you can view this document, as well as all other documents of this Department published in the **Federal Register**, in text or Portable Document Format (PDF). To use PDF you must have Adobe Acrobat Reader, which is available free at the site.

You may also access documents of the Department published in the **Federal Register** by using the article search feature at *www.federalregister.gov.* Specifically, through the advanced search feature at this site, you can limit your search to documents published by the Department.

Adam Schott,

Deputy Assistant Secretary for Policy and Programs, Delegated the Authority to Perform the Functions and Duties of the Assistant Secretary, Office of Elementary and Secondary Education.

[FR Doc. 2023–16704 Filed 8–3–23; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF ENERGY

Notice of Final Determination on 2023 DOE Critical Materials List

AGENCY: Department of Energy.

ACTION: Notice.

SUMMARY: By this notice, the U.S. Department of Energy (DOE) presents 2023 DOE Critical Materials List. This list includes critical materials for energy, as determined by the Secretary of Energy, acting through the Undersecretary for Science and Innovation, pursuant to authority under the Energy Act of 2020, as well as those critical minerals on the 2022 final list published by the Secretary of Interior, acting through the Director of the U.S. Geological Survey (USGS). This notice also presents the assessment that forms the basis for the designation of critical materials for energy. The final 2023 DOE Critical Materials List includes certain critical materials for energy and critical minerals as listed below.

FOR FURTHER INFORMATION CONTACT: Questions may be addressed to Helena Khazdozian, 202–586–9236, *helena.khazdozian@ee.doe.gov*.

DATES: *Applicable:* July 28, 2023.

SUPPLEMENTARY INFORMATION: Section 7002(a)(2) of the Energy Act of 2020 defines ''critical materials'' to be: (A) Any non-fuel mineral, element, substance, or material that the Secretary of Energy determines (i) has high risk for supply chain disruption; and (ii) serves an essential function in one or more energy technologies, including technologies that produce, transmit, store, and conserve energy [referred to here as a critical material for energy]; or (B) a critical mineral [as designated by the Secretary of the Interior].[1] The Final 2023 DOE Critical Materials List includes the following:

- *Critical materials for energy:* aluminum, cobalt, copper*, dysprosium, electrical steel* (grain-oriented electrical steel, non-grain-oriented electrical steel, and amorphous steel), fluorine, gallium, iridium, lithium, magnesium, natural graphite, neodymium, nickel, platinum, praseodymium, terbium, silicon*, and silicon carbide*.
- *Critical minerals:* The Secretary of the Interior, acting through the Director of the U.S. Geological Survey (USGS), published a 2022 final list of critical minerals that includes the following 50 minerals: ''Aluminum, antimony, arsenic, barite, beryllium, bismuth, cerium, cesium, chromium, cobalt, dysprosium, erbium, europium, fluorspar, gadolinium, gallium, germanium, graphite, hafnium, holmium, indium, iridium, lanthanum, lithium, lutetium, magnesium, manganese, neodymium, nickel, niobium, palladium, platinum, praseodymium, rhodium, rubidium, ruthenium, samarium, scandium, tantalum, tellurium, terbium, thulium, tin, titanium, tungsten, vanadium, ytterbium, yttrium, zinc, and zirconium.''

* Indicates materials not designated as critical minerals by the Secretary of

[1] 30 U.S.C. 1606(a)(2)

Interior. The critical materials for energy included on the Final 2023 DOE Critical Material List [2] are based on the criticality assessed in the short- and medium-term.[3] A detailed description of DOE's methodology can be found in the assessment.[4] The materials on the Final 2023 DOE Critical Materials List will inform crosscutting priorities including, but not limited to:

- Critical Materials Research, Development, Demonstration, and Commercial Application (RDD&CA) Program priorities
- Eligibility for the Inflation Reduction Act (IRA) 48C tax credit

Public Comment on the Draft Critical Materials List

Pursuant to authority in section 7002(a)(2) of the Energy Act of 2020, on May 3, 2023, DOE published via the EERE Exchange website a Notice of Intent [5] to issue a Request for Information (RFI) [6] on the Proposed Determination of the Draft Critical Materials List and Draft Critical Materials Assessment. The RFI was published via the EERE Exchange on May 31, 2023. The RFI provided for a 20-day public comment period, and closed on June 20, 2023.

DOE received 79 comments during the comment period. Three comments were from individuals and 76 were submitted on behalf of organizations. Due to time constraints, comments received after the deadline were not taken into consideration for this assessment. DOE may take these comments into consideration for future assessments and determinations. Additionally, DOE received some comments that were out of scope or otherwise not responsive to the requests included in the RFI. DOE considered all of the responsive comments received before the submission deadline and below is a summary of DOE's responses.

The following revisions to the Draft DOE Critical Materials List were made based on the comments received:

- Terbium was added to the Final 2023 DOE Critical Materials List as a critical material for energy. Terbium was screened and then fully assessed for criticality based on information provided through the comments received. Based on that analysis, DOE has determined that terbium meets the definition of critical materials as defined in the Energy Act of 2020. More detail is provided in the Critical Material Assessment.

The following actions were taken based on the comments received, but did not change the results of the Critical Materials Assessment:

- Boron was revisited based on the comments that in addition to neodymium iron boron magnets, boron is important for additional clean energy end-uses including wind turbine blades, boron-doped photovoltaics, and battery coatings. DOE's conclusion is that there is a lack of substantiated data that quantifies the use of boron in these applications, including electric glass for wind turbine blades, and thus these applications would not drive a significant increase in demand for boron.
- Phosphorous was revisited based on the comments that phosphorous demand is expected to experience a shortfall for use in lithium iron phosphate (LFP) batteries, geoconcentration of production outside the U.S., and that agriculture is a competing use. DOE provides further clarification that the Critical Materials Assessment considered high LFP adoption scenarios, geoconcentration of production outside the U.S., and agriculture as a competing use in the assessment of phosphorous. More details can be found in the Critical Materials Assessment report in section 4.3.15. Ultimately, phosphorous was not assessed to be critical under the DOE methodology.

DOE received a comment advocating the exclusion of copper from the Final 2023 DOE Critical Materials List based on (1) the results of the USGS methodology [7] to determine the 2022 Final List of Critical Minerals and (2) the potential to accelerate mining of copper under the IRA 48C tax credit.

- Regarding point (1), it should be noted that the methodologies employed by the USGS and DOE have several distinctions. While the USGS methodology is a supply-side approach that uses historical data to determine criticality within the context of the U.S. economy and national security, the DOE methodology is forward looking—incorporating global demand trajectories based on growth scenarios for various energy technologies, coupled with assumptions about the material intensity of those technologies, to determine criticality within the context of clean energy.
- Regarding point (2), critical materials eligibility for the IRA 48C tax credit is specifically for processing, refining, or recycling of critical materials.

DOE received a comment stating that uranium should not be excluded from the Final 2023 DOE Critical Materials List based on its categorization as a fuel-mineral because uranium does not meet the U.S. Environmental Protection Agency (EPA) definition of a fuel, ''material used to produce heat or power by burning.'' As noted in the RFI and accompanying proposed assessment, uranium was assessed for criticality under this methodology and met the threshold to be included on the list of critical materials for energy. However, section 7002(a) of the Energy Act of 2020 restricts the listing of critical materials to ''any non-fuel mineral, element, substance, or material'' and therefore DOE is not designating uranium as a critical material at this time. DOE further responds noting the following:

- What EPA ''considers a fuel to be'' [8] for the purpose of its risk management programs for chemical accident prevention is not determinative of what is a fuel mineral, element, substance, or material element that DOE is required to exclude from the Critical Materials List by section 7002(a) of the Energy Act of 2020. The Merriam-Webster Dictionary defines fuel to include, not only a material used to produce heat or power by burning, but also ''a material from which atomic energy can be liberated especially in a reactor.'' [9] Uranium used in commercial nuclear plants clearly meets this definition of a fuel material. Therefore, based on the plain meaning of fuel, DOE concludes that uranium used in commercial nuclear reactors is a fuel material. Based on the Critical Materials Assessment, which includes only use of uranium as a fuel, DOE is not designating uranium as a critical material at this time.

DOE received several comments that provided information that may have the

[2] *https://www.energy.gov/cmm/what-are-critical-materials-and-critical-minerals.*

[3] Several substances listed as critical materials for energy were also included on the U.S. Geological Survey's 2022 Final List of Critical Minerals. DOE's inclusion of these substances on its list is intended to signal the results of its criticality assessment. Under Section 7002(a), however, designation as a critical mineral is sufficient to make the substance a critical material.

[4] *https://www.energy.gov/cmm/critical-minerals-materials-program.*

[5] *https://eere-exchange.energy.gov/Default.aspx#FoaId6322a11b-4cb4-4ac7-96a2-a6814bc5fbf9.*

[6] *https://eere-exchange.energy.gov/Default.aspx#FoaId82fa533b-3d3e-4b49-839d-9ddf13d56f40.*

[7] *https://pubs.er.usgs.gov/publication/ofr20211045.*

[8] U.S. Environmental Protection Agency, *Definition of Fuel, https://www.epa.gov/rmp/definition-fuel#:~:text=There%20is%20no%20regulatory%20definition,heat%20or%20power%20by%20burning* (''There is no regulatory definition of fuel; however, EPA considers a fuel to be a material used to produce heat or power by burning.'').

[9] *https://www.merriam-webster.com/dictionary/fuel.*

potential to adjust the criticality analyses of materials already included on the USGS Critical Minerals List. These comments were considered but ultimately not included in this determination, as such minerals are by definition already deemed to be critical materials. However, DOE may use the information to inform future assessments and activities related to critical materials for energy.

DOE received several comments advocating for increasing the scores of importance to energy or potential for supply risk within the Critical Materials Assessment for several materials on the Draft Critical Materials List, including copper and silicon. These comments were not taken into account for this assessment but may be considered to inform future assessments and activities at DOE.

DOE received many comments about the scope of the assessment. The following explanation and clarification are provided:

- Section 7002(a)(2) of the Energy Act of 2020 authorized the Secretary of Energy to determine critical materials according to the statutory definition:
  - Any non-fuel mineral, element, substance, or material that the Secretary of Energy determines:
    - Has high risk for supply chain disruption; and
    - Serves an essential function in one or more energy technologies, including technologies that produce, transmit, store, and conserve energy; or
  - A critical mineral [as designated by the Secretary of the Interior].[10]
- DOE has interpreted energy technologies to be ''clean energy'' technologies in alignment with the DOE Critical Minerals and Materials Vision and Strategy.[11] The anticipated unprecedented increase in demand for critical minerals and materials is driven by the global deployment of clean energy technologies to achieve net-zero goals by 2050. The International Energy Agency has estimated the demand for critical minerals and materials will increase by 400% to 600% by 2040 to achieve these goals.[12] The specific energy technologies [13] considered in this assessment are described in Chapter 2 of the Critical Materials Assessment and are aligned with the technologies DOE assessed as part of ''America's Strategy to Secure the Supply Chain for a Robust Clean Energy Transition.''
- DOE conducted the Critical Materials Assessment to inform the determination under section 7002(a)(2). The methodology applied in the DOE Critical Materials Assessment has several unique features:
  - It is forward looking, incorporating global demand trajectories based on growth scenarios for various energy technologies, coupled with assumptions about the material intensity of those technologies.
  - A limited set of engineered materials was assessed.
- The scope of materials assessed included a limited set of engineered materials: electrical steel and silicon carbide. This set of engineered materials was selected based on two factors: (1) the materials were found to have high potential for supply risk in the ''supply chain deep dive'' reports as part of ''America's Strategy to Secure the Supply Chain for a Robust Clean Energy Transition''; and (2) the elements comprising the engineered materials (such as iron for electrical steel) were unlikely to be found critical and thus not indicate the risk posed to deploying energy technologies. Prior to the passage of the Energy Act of 2020, materials assessed for criticality were generally limited to an element. In practice, the designation of a critical material as an element does not restrict the mitigation strategies prioritized by DOE to be limited to the elemental form. For example, neodymium has been found to be critical in the past and mitigation strategies pursued by DOE include unlocking new sources, developing alternative magnets that reduce or eliminate the use of neodymium, improving efficiency of separation and metallization of neodymium as well as neodymium-based alloys and magnets, and recycling neodymium from end-of-life magnets.
  - Further clarification is provided on the definition of electrical steel. For the purposes of this assessment, electrical steel includes grain-oriented electrical steel, non-grain-oriented electrical steel, and amorphous steel.
- The scope of materials analyzed does not include materials that are used indirectly in the manufacturing process but do not contribute to the composition of the components or final products. For example, helium is used in cooling, cleaning, and creating an inert environment for semiconductors but it is not a constituent material of the semiconductor. While a disruption in helium supply chain can impact semiconductor production, the scope of this assessment has not been extended to indirect material use. DOE may consider the examination of materials used indirectly in manufacturing processes in future assessments.

DOE received many comments with recommendations to improve the methodology applied in the Critical Materials Assessment. DOE anticipates updating the assessment every three years and may evaluate these recommendations for future assessments. Such future assessments will inform additional critical materials determinations, as appropriate.

The following table summarizes a subset of the relevant comments received, categorized by material, and describes DOE's response. This does not include comments on the improvements for the methodology, or the scope of the assessment which are discussed previously.

Material	On the USGS list?	On the draft DOE list?	On the final DOE list?	Number of comments received	Summary of comment(s)	DOE action
Aluminum ..	Yes	Yes	Yes	5	Aluminum score should increase in short-term and medium-term due to supply risk (low producer diversity—China) and importance to energy (more end-uses than considered in assessment).	No action: Aluminum is already on the USGS and DOE lists. DOE may consider this input for future assessments and activities.
Antimony ...	Yes	No	No	2	Antimony should be on the list. Antimony compounds used in electronics and for fire-retardance.	No action: Antimony is already on the USGS list and no substantial data or information were provided.

[10] 30 U.S.C. 1606(a)(2).

[11] *https://www.energy.gov/cmm/critical-minerals-materials-program.*

[12] *https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions.*

[13] Vehicles, stationary storage, hydrogen electrolyzers, solar energy, wind energy, nuclear energy, electric grid, solid state lighting, and microchips.

Material	On the USGS list?	On the draft DOE list?	On the final DOE list?	Number of comments received	Summary of comment(s)	DOE action
Beryllium ...	Yes	No	No	1	Beryllium should be on the list—important for solar photovoltaics (PV), nuclear, electric vehicle (EV) batteries. Data NOT provided. Most beryllium is imported from Kazakhstan.	No action: Beryllium is already on the USGS list and no data were provided.
Boron	No	No	No	8	Boron should be on the list and is used in more end-uses than Neodymium Iron Boron magnets (wind turbine blades, boron-doped photovoltaics, battery coatings). There is increased international demand for boron.	DOE revisited the assessment of boron. DOE is not aware of any substantiated data that quantifies the use of boron in electric glass for wind turbine blades or that the use of boron in these end-use applications is driving significant increase in demand for boron.
Bromine	No	No	No	1	Bromine should be considered for the list—important to zinc bromide batteries.	No action: Zinc bromide batteries are currently an emerging battery technology with uncertainty in future deployment.
Butyllithium	No	No	No	1	Butyllithium should be on the list—important for manufacturing of ''green'' tires and lightweight automotive interior.	No action: The scope of materials for this assessment does not include materials that are used indirectly in the manufacturing process but do not contribute to the composition of the components or final products. DOE may consider this input for future assessments and activities.
Carbon Fiber.	No	No	No	1	Should be assessed for wind turbine blades	No Action. The scope of materials assessed included a limited set of engineered materials: electrical steel and silicon carbide. This set of engineered materials were selected based on two factors: (1) they were found to have high potential for supply risk in the ''supply chain deep dive'' reports as part of ''America's Strategy to Secure the Supply Chain for a Robust Clean Energy Transition,'' and (2) the elements comprising the engineered materials (such as iron for electrical steel) were unlikely to be found critical and thus would not indicate the risk posed to deploying energy technologies.
Cerium	Yes	No	No	1	The risks associated with the overproduction of elements like cerium are overstated in the assessment.	No action: Cerium was not assessed for material criticality. Cerium is on the USGS list.
Cobalt	Yes	Yes	Yes	6	Information on dependency on Democratic Republic of Congo and China. LFP/LFMP (lithium iron phosphate/lithium iron-manganese-phosphate) technology will reduce cobalt dependency for batteries. Most mining and processing of cobalt occurs outside the U.S.	No action: Cobalt is already on the USGS list. DOE may consider this input for future assessments and activities.
Copper	No	Yes	Yes	9	Copper score should increase based on importance to energy (more end-uses than considered in assessment) and supply risk. Copper should not be on the list because: (1) it is not on the USGS list and (2) will incentivize mining through the IRA 48C tax credit and most copper deposits are within 35 miles of Native American Reservations.	No Action. Copper is already on DOE draft list. DOE may consider this input for future assessment and activities. (1) The methodologies employed by the USGS and DOE have several distinctions. While the USGS methodology is a supply-side approach that uses historical data to determine criticality within the context of the economy and national security, the DOE methodology is forward looking—incorporating demand trajectories based on growth scenarios for various energy technologies, coupled with assumptions about the material intensity of those technologies, to determine criticality within the context of clean energy. (2) Critical materials eligibility for the IRA 48C tax credit is specifically for processing, refining, or recycling of critical materials.
Dysprosium	Yes	Yes	Yes	1	Add dysprosium to critical materials list because of its use in magnets.	No action: Dysprosium is already on the USGS list and DOE draft list.
Electrical Steel.	No	Yes	Yes	1	Limitations on substitutability between non-grain oriented steels, grain oriented steels, and amorphous steel.	No action: Electrical steel is already on the DOE draft list. DOE will consider this input for future assessments and activities.
Fluorine	No	Yes	Yes	2	Fluorine-based compounds are used in lithium-ion batteries.	No action: Fluorine is already on the DOE draft list.
Polyvinylidene fluoride (PVDF).	No	No	No	1	Extend analysis of fluorine to include suspension grade PVDF due to complexity of high-grade production and limited production capability and anticipated increase in demand.	No action: A limited set of engineered materials was assessed: electrical steel and silicon carbide. In practice, designation as a critical material is generally limited to an element, but does not restrict the mitigation strategies prioritized by DOE to be limited to the elemental form.

Material	On the USGS list?	On the draft DOE list?	On the final DOE list?	Number of comments received	Summary of comment(s)	DOE action
Gallium	Yes	Yes	Yes	1	Gallium's role in off-shore magnets was not well defined. Should be listed as critical to solar cells and power electronics.	No action: Gallium is already on the USGS list and DOE draft list.
Gallium Nitride.	No	No	No	2	Gallium nitride should be on list for its use ...	No action: Gallium nitride was considered, but it did not meet the threshold of the screening step of DOE methodology.
Gold	No	No	No	2	Gold should be on list due to competing uses and potential source of critical materials as byproducts.	Gold is outside the scope based on the definitions of energy technologies.
Graphite—natural.	Yes	Yes	Yes	2	U.S. has no domestic natural graphite mines	No action: Graphite is already on the USGS list and DOE draft list.
Graphite—synthetic.	Yes	No	No	6	Capacitors and supercapacitors are also end-uses. No data provided. Synthetic graphite has superior performance in EV batteries. Has multiple applications in nuclear, molten salt reactors. Most synthetic graphite is produced outside the U.S.	No action: Graphite (natural graphite and synthetic graphite) is already on the USGS list and no data were provided.
Helium	No	No	No	1	Helium, antimony, tungsten, and tin should be on the list. Helium is important for advanced technology and energy technology.	No action: The scope of materials for this assessment does not include materials that are indirectly used in the manufacturing process but not contributing to the composition of the components or final products. DOE may consider this input for future assessments and activities.
Iridium	Yes	Yes	Yes	2	U.S. needs to be strategic in importing iridium.	No action: Iridium is already on the USGS list and DOE draft list.
Iron ore	No	No	No	1	Iron ore fits the description of a critical material due to its widespread applications.	Iron ore is outside the scope based on the definitions of energy technologies.
Lanthanum	Yes	No	No	1	It is recommended that the DOE investigates the components needed for rare earth elements (REE) containing steels for carbon dioxide and hydrogen pipelines.	No action: Lanthanum was considered, but it did not meet the threshold of the screening step of DOE methodology. Lanthanum is on the USGS list.
Lead	No	No	No	1	Lead batteries provide most back up battery power for telecommunications industry. International demand for lead will begin to outpace US demand in the near term. There is no domestic primary lead production.	No action: Lead is outside the scope based on the definitions of energy technologies.
Lithium	Yes	Yes	Yes	5	Need more domestic lithium production facilities. Consider upgrading lithium as critical in short-term in Section 3.1.2.	No action: Lithium is already on the USGS list and DOE draft list. DOE will consider this input for future assessments and activities.
Manganese	Yes	No	No	2	Manganese should be on list due to lack of domestic capabilities, particularly for battery-grade manganese. Data not provided. DOE should recognize the difference between bulk mined manganese used in steel-making and high purity manganese for batteries. China controls 95% of global battery grade manganese processing.	No action: Manganese is already on the USGS list and no data were provided.
Molybdenum.	No	No	No	1	Molybdenum should be the list due to its use in high strength steels used in vehicle lightening and energy infrastructure (wind turbine supports).	No action: Molybdenum was not found to be material of concern in the DOE Wind Energy Supply Chain Deep Dive. Assessment.[14] DOE may consider this input for future assessments and activities.
Neodymium	Yes	Yes	Yes	2	Recommends DOE to investigate the components needed for REE-bearing steels needed for carbon dioxide and hydrogen pipelines. In the assessment, neodymium should be considered critical for applications in motors.	No action: Neodymium is already on the USGS list and DOE draft list. DOE may consider this input for future assessments and activities.
Nickel	Yes	Yes	Yes	2	Nickel as a copper byproduct should be seen as a factor that reduces supply risk.	No action: Nickel is already on the DOE draft list. DOE may consider this input for future assessments and activities.
Palladium ..	Yes	No	No	3	Palladium and rhodium should be on the list. Potential substitute for platinum and iridium in fuel cells and electrolyzers.	No action: Palladium is already on the USGS list. DOE may consider this input for future assessments and activities.
Phosphates	No	No	No	3	Phosphates should be on the list. Phosphates are a potential precursor material for LFP batteries, and the usage competes with agricultural and food industry uses.	No action: A limited set of engineered materials was assessed: electrical steel and silicon carbide. In practice, designation as a critical material is generally limited to an element, but does not restrict the mitigation strategies prioritized by DOE to be limited to the elemental form.

Material	On the USGS list?	On the draft DOE list?	On the final DOE list?	Number of comments received	Summary of comment(s)	DOE action
Phosphorus	No	No	No	1	Phosphorus is important for agriculture and production is geoconcentrated outside U.S. Phosphorus demand for lithium iron phosphate (LFP) batteries is expected to experience shortfall in supply. Most battery grade phosphorus has to be imported.	DOE revisited the assessment of phosphorous. DOE provides further clarification that Critical Materials Assessment considered high LFP adoption scenarios, geoconcentration of production outside the U.S., and agriculture as a competing use in the assessment of phosphorous. More details can be found in the Critical Materials Assessment report in Section 4.3.15. While phosphorous passed the initial screen, ultimately, it was not assessed as critical under the DOE methodology.
Platinum	Yes	Yes	Yes	3	Platinum supply not a risk in short-term. Propose addition of fuel cell applications to end-use and align platinum as Tier 1. Remove electrolyzers as an end-use application and replace with ''energy conservation'' category.	No action: Platinum is already on the USGS list and DOE draft list. DOE may consider this input for future assessments and activities.
Rhodium	Yes	No	No	2	Palladium and rhodium should be on the list. Potential substitute for platinum and iridium in fuel cells and electrolyzers.	No action: Rhodium is already on the USGS list. DOE may consider this input for future assessments and activities.
Silicon	No	Yes	Yes	6	Silicon should be on the list. There are multiple uses for silicon: photovoltaic solar cells, semiconductors, silicones, metallurgical processing. China produces over 70% of silicon.	No action: Silicon is already on the DOE draft list. DOE may consider this input for future assessments and activities.
Silicon carbide.	No	Yes	Yes	1	Needed for wide band-gap semiconductors. Demand is likely to exceed supply.	No action: Silicon carbide is already on the DOE draft list. DOE may consider this input for future assessments and activities.
Silicon metal.	No	No	No	2	China dominates silicon metal production. Silicon metal should be analyzed as a separate material for short- and long-term scarcity.	No Action. A limited set of engineered materials was assessed: electrical steel and silicon carbide. In practice, designation as a critical material is generally limited to an element, but does not restrict the mitigation strategies prioritized by DOE to be limited to the elemental form.
Silver	No	No	No	2	Silver should be on list due to competing uses and potential source of critical materials as byproducts.	Sliver was not found to be material of concern in the DOE Solar Photovoltaics Supply Chain Deep Dive Assessment.[15] DOE may consider this input for future assessments and activities.
Terbium	Yes	No	Yes	2	Terbium should be on the list—important for neodymium-iron-boron (NdFeB) magnets (equally so as dysprosium).	Terbium was screened and assessed for NdFeB magnets. Based on the assessment, DOE has determined that terbium is on the Final DOE Critical Materials List as a critical material for energy.
Tin	Yes	No	No	1	Tin should be on the list	No action: Tin is already on the USGS list and no substantial data or information were provided.
Titanium	Yes	No	No	1	Titanium should be on the list—important for fuel cells and lightweighting.	No action: Titanium is already on the USGS list. Titanium is unlikely to pass screening due to importance for lightweighting being primarily outside of energy end-use applications. DOE may consider this input for future assessments and activities.
Tungsten	Yes	No	No	1	Helium, antimony, tungsten, and tin should be on list.	No action: Tungsten is already on the USGS list and no substantial data or information were provided.
Uranium	No	No	No	3	Uranium should be on list due to foreign reliance. Uranium is not a fuel and doesn't meet the EPA definition for fuel.	No action: As described above, for the purposes of the assessment, DOE has determined that uranium used in commercial nuclear power reactors is a fuel based on the plain meaning of fuel.
Vanadium	Yes	No	No	1	Vanadium is needed for the emerging battery technology of ''flow batteries''.	No action: Vanadium is already on the USGS list. DOE will consider this input for future assessments and activities.
Xenon	No	No	No	1	Xenon should be considered—important for manufacturing of energy tech.	No action: The scope of materials for this assessment does not include materials that are used indirectly in the manufacturing process but not contributing to the composition of the components or final products. DOE may consider this input for future assessments and activities.

Signing Authority: This document of the Department of Energy was signed on July 28, 2023, by Dr. Geraldine Richmond, Undersecretary for Science and Innovation pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the **Federal Register**.

Signed in Washington, DC, on July 31, 2023.

Treena V. Garrett,

Federal Register Liaison Officer, U.S. Department of Energy.

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DEPARTMENT OF ENERGY

Notice of Adoption of Nuclear Regulatory Commission National Environmental Policy Act Documentation for the Operation of Diablo Canyon Power Plant and Republication as a Final DOE Environmental Impact Statement for Award of Credits to Pacific Gas and Electric Company Under the Civil Nuclear Credit Program

AGENCY: Grid Deployment Office, Department of Energy.

ACTION: Notice of adoption of National Environmental Policy Act documentation.

SUMMARY: The Department of Energy (DOE) is adopting the Nuclear Regulatory Commission (NRC) National Environmental Policy Act (NEPA) documentation (including that of the Atomic Energy Commission (AEC), the NRC's predecessor agency), for operation of the Diablo Canyon Power Plant (DCPP) under DCPP's operating licenses from the NRC. DOE determined these documents adequate to satisfy DOE NEPA obligations related to its award of credits to Pacific Gas and Electric Company (PG&E), pursuant to the Civil Nuclear Credit (CNC) Program, for the continued operation of the DCPP under DCPP's current operating licenses issued by the NRC. Because the actions covered by this NRC NEPA documentation and the proposed action are substantially the same, DOE is republishing and adopting those NEPA documents as a final DOE Environmental Impact Statement (EIS).

DATES: DOE will execute a Record of Decision no sooner than 30 days following publication by the Environmental Protection Agency (EPA) of its Notice of Availability of DOE's adoption of the NRC NEPA documents (EPA Notice) in the **Federal Register**.

ADDRESSES: Copies of this Notice of Adoption may be obtained by contacting Mr. Jason Anderson, Document Manager, by mail at U.S. Department of Energy, Idaho Operations Office, 1955 Fremont Avenue, Idaho Falls, Idaho 83415; or by email to *cnc_program_mailbox@hq.doe.gov.* This Notice of Adoption, as well as other general information concerning the DOE NEPA process, are available for viewing or download at: *https://www.energy.gov/gdo/cnc-cycle-1-diablo-canyon-conditional-award-nepa-documentation.* For general information on the CNC Program, visit *www.energy.gov/gdo/civil-nuclear-credit-program.*

FOR FURTHER INFORMATION CONTACT: Mr. Theodore Taylor, *cnc_program_mailbox@hq.doe.gov,* (202) 586–4316.

SUPPLEMENTARY INFORMATION: Part of the DOE mission is to ensure America's security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions. As described at *www.energy.gov/gdo/civil-nuclear-credit-program,* the CNC Program was established on November 15, 2021, when President Biden signed the Infrastructure Investment and Jobs Act (IIJA) (Pub. L. 117–58), also known as the Bipartisan Infrastructure Law, into law. Section 40323 of the IIJA (42 U.S.C. 18753) provides $6 billion to establish a program to award civil nuclear credits. The CNC Program is a strategic investment to help preserve the existing U.S. commercial power reactor fleet and save thousands of high-paying jobs across the country.

Under the CNC Program, owners or operators of U.S. commercial power reactors can apply for certification to bid on credits to support the nuclear reactor's continued operation. An application must demonstrate that the nuclear reactor is projected to close for economic reasons and that closure will lead to a rise in air pollutants and carbon emissions, among other conditions. An owner or operator of a certified nuclear reactor whose bid for credits is selected by DOE is then eligible to receive payments from the Federal government in the amount of the credits awarded to the owner or operator, provided it continues to operate the nuclear reactor for the four-year award period (2023 to 2026) and subject to its satisfaction of other specified payment terms. PG&E submitted its application for certification and its bid for credits under the CNC Program on September 9, 2022. DOE made a conditional award of credits to PG&E on November 21, 2022.

NEPA requires Federal agencies to evaluate the environmental impacts of proposals for major Federal actions with the potential to significantly affect the quality of the human environment. Awarding credits for continued operation of a commercial nuclear power reactor under the CNC Program is subject to NEPA. Therefore, to award credits to DCPP, an existing commercial nuclear power plant, DOE conducted a review of the existing NEPA documentation for continued operation of the reactor in accordance with the Council on Environmental Quality (CEQ) and DOE NEPA regulations, 40 CFR 1506.3 and 10 CFR 1021.200(d), respectively. DOE also considered non-NEPA documents, such as available licensing basis documents, the 2021 Safety Analysis Report, Federal and State permits, site reports and documents, and relevant public information to satisfy its obligations under NEPA.

Proposed Action

DOE proposes to award credits to PG&E under the CNC Program for the continued operation of DCPP under DCPP's current NRC operating licenses. While DCPP's current NRC operating licenses are valid until November 2, 2024 (Unit 1) and until August 26, 2025 (Unit 2), they may remain in effect by operation of law beyond those dates in accordance with NRC rules and 5 U.S.C. 558(c). DOE's review and adoption of the NRC NEPA documents covers DOE's proposed action, which occurs during the period that DCPP's current NRC operating licenses remain in effect. The issuance or payment of credits awarded to PG&E beyond the period that DCPP's current NRC operating licenses remain in effect would be dependent on PG&E's compliance with NRC requirements applicable to license renewal. DOE would consider the need for further NEPA review prior to deciding whether to issue any credits or make any

[14] *https://www.energy.gov/sites/default/files/2022-02/Wind%20Supply%20Chain%20Report%20-%20Final%202.25.22.pdf.*

[15] *https://www.energy.gov/sites/default/files/2022-02/Solar%20Energy%20Supply%20Chain%20Report%20-%20Final.pdf.*