DEPARTMENT OF THE INTERIOR

Geological Survey

2022 Final List of Critical Minerals

AGENCY: U.S. Geological Survey, Department of the Interior.

ACTION: Notice.

SUMMARY: By this notice, the Secretary of the Interior, acting through the Director of the U.S. Geological Survey (USGS), presents the 2022 final list of critical minerals and the methodology used to develop the list. The 2022 final list of critical minerals, which revises the final list published by the Secretary in 2018, 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.

ADDRESSES:

Public comments received on the draft list of critical minerals are available at www.regulations.gov under docket number DOI-2021-0013.

FOR FURTHER INFORMATION CONTACT:

James Mosley, (703) 648-6312, jmosely@usgs.gov. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service (FRS) at 1-800-877-8339 or dial 711 to contact Mr. Mosley during normal business hours. The FRS is available 24 hours a day, 7 days a week, to leave a message or question with this individual. You will receive a reply during normal business hours. Normal business hours are 9:00 a.m. to 5:30 p.m., Monday through Friday, except for Federal holidays.

SUPPLEMENTARY INFORMATION:

Pursuant to Section 7002 of the Energy Act of 2020 (the Energy Act) (Pub. L. No. 116-260), on November 9, 2021, the Secretary of the Interior, acting through the Director of the U.S. Geological Survey (USGS), published in the *Federal Register* a draft list of 50 mineral commodities proposed for inclusion on the Interior Department's list of critical minerals and the methodology USGS used to create the list. 86 FR 62199. The *Federal Register* notice provided for a 30-day public comment period, which closed on December 9, 2021. On December 14, 2021, the USGS published a notice in the *Federal Register* extending the comment period by 32 days. 86 FR 71083. The public comment period closed on January 10, 2022. The comments are available for public viewing at www.regulations.gov under docket DOI-2021-0013. Consistent with the methodology described in the November 2021 *Federal Register* notice, the 2022 final list of critical minerals revises the Interior Department's final list of critical minerals, which it published in 2018 pursuant to Executive Order 13817—A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals. 83 FR 23295.

USGS received 1,073 comments during the extended comment period and received 4 letters after the comment period. Two comments were made anonymously, 996 were from individuals, and 77 were submitted on behalf of organizations. The comments included 91 requests to include specific minerals, including copper, phosphate, silver, and lead, which also were not on the 2018 final list, and helium, potash, and uranium, which were on the 2018 final list, but not on the draft list. Many of the comments requesting to include these specific minerals noted their importance or provided other qualitative rationale for their inclusion. However, the comments did not identify any inaccuracies in the data used to conduct the quantitative evaluation in accordance with the published USGS methodology, nor did they identify any single points of failure. USGS applied the quantitative methodology to each of the minerals requested for inclusion that were not on the draft list, and per the criteria articulated in the *Federal Register* Notice publishing the draft list at 86 FR 62199, a qualitative evaluation was conducted only when other evaluations were not possible. After applying the methodology, USGS determined that the minerals requested for inclusion did not meet the criteria for inclusion on the final list.

There were 991 requests, the vast majority of which were form comments, supporting the removal of uranium (included on the 2018 final list) from the 2022 final list. The comments also included 5 requests supporting the exclusion of other specific minerals, including copper, helium, potash, rhenium, and strontium, none of which the USGS had proposed for inclusion on the list. As noted above, USGS received requests to include four minerals that other commenters also requested to exclude: copper, helium, potash, and uranium.

Some commenters took issue with USGS's reliance on the Mineral Policy Act of 1970 to characterize uranium as a fuel mineral. Even assuming the Mineral Policy Act of 1970 does not inform the meaning of "fuel mineral" in the Energy Act, uranium nevertheless qualifies as a "fuel mineral" under the latter statute. The Energy Act excludes "fuel minerals" from the definition of critical minerals, and uranium is used as a fuel: while uranium has important non-fuel uses, it is a major fuel commodity in the United States.

Many public comments addressed issues not directly associated with the development of the 2022 final list of critical minerals. Instead, they addressed regulatory and policy issues. These comments will be passed on to other agencies for appropriate consideration.

A small number of comments requested the addition of processed mineral products that were not evaluated for inclusion on the list in this cycle. These included high purity silicon metal and boron carbide, for example, materials for which USGS does not have sufficient data to evaluate at this stage. The USGS appreciates the input from stakeholders and is identifying opportunities to include evaluation of these and other minerals or mineral products in the next update of the methodology.

The Department's list of critical minerals is not static and will be reviewed at least every three years and revised as necessary to reflect current data on supply, demand, and concentration of production, as well as current policy priorities, as required under the Energy Act. The 2022 final list of critical minerals was created using the most recent available data for non-fuel minerals and the current state of the methodology for evaluation of criticality.

The methodology used to develop the 2022 final list of critical minerals is based on the definition of "critical mineral" and the criteria specified in The Energy Act. The methodology was published by the USGS in 2020[1] and 2021[2] and includes three evaluations: (1) A quantitative evaluation of supply risk wherever sufficient data were available, (2) a semi-quantitative evaluation of whether the supply chain had a single point of failure, and (3) a qualitative evaluation when other evaluations were not possible. The quantitative evaluation uses (A) a net import reliance indicator of the dependence of the U.S. manufacturing sector on foreign supplies, (B) an enhanced production concentration indicator which focuses on production concentration outside of the United States, and (C) weights for each producing country's production contribution by its ability or willingness to continue to supply the United States. Further details on the underlying rationale and the specific approach, data sources, and assumptions used to calculate each component of the supply risk metrics are described in the references cited in this notice.

Several comments addressed the overall methodology that USGS used to develop the list, including assertions that the USGS should include additional quantitative or qualitative factors. USGS appreciates these suggestions and will consider them in future updates to the methodology. However, the USGS did not find that any of the comments identified technical flaws in the factors considered or data used in the quantitative methodology that would warrant any changes in the methodology.

After considering all comments received, the USGS believes that the methodology described in USGS Open-File Report 2021-1045 (https://doi.org/10.3133/ofr20211045) remains a valid basis for the review and revision of the list of critical minerals. Therefore, the USGS is hereby finalizing the draft list of 50 critical minerals as the final list. A listing of which critical minerals are predominantly recovered as byproducts and further rationale for excluding copper, helium, lead, phosphate, potash, rhenium, silver, strontium, and uranium from the 2022 final list of critical minerals are outlined in the draft list of critical minerals published in the *Federal Register* at 86 FR 62199. Host minerals for critical minerals that are predominantly recovered as byproducts are identified in USGS Open-File Report 2021-1045, p. 11.

The U.S. Government and other organizations may also use other definitions and rely on other criteria to identify a mineral as critical. In addition, there are many minerals not on the 2022 final list of critical minerals that are nevertheless important to the economic and national security of the United States. This 2022 final list of critical minerals is not intended to replace related terms and definitions of minerals that are deemed strategic, critical or otherwise important.

Authority: E.O. 13817, 82 FR 60835 (December 26, 2017) and The Energy Act of 2020, Section 7002 of Title VII (December 27, 2020).

James D. Applegate,

Associate Director for Natural Hazards, Exercising the Delegated Authority of the Director, U.S. Geological Survey.

---

[1] Nassar, N.T., Brainard, J., Gulley, A., Manley, R., Matos, G., Lederer, G., Bird, L.R., Pineault, D., Alonso, E., Gambogi, J., Fortier, S.M., 2020, Evaluating the mineral commodity supply risk of the U.S. manufacturing sector Sci. Adv., 6 (8) (2020), p. eaay8647, https://doi.org/10.1126/sciadv.aay8647

[2] Nassar, N.T., and Fortier, S.M., 2021, Methodology and technical input for the 2021 review and revision of the U.S. Critical Minerals List: U.S. Geological Survey Open-File Report 2021-1045, 31 p., https://doi.org/10.3133/ofr20211045.