"avoid supply shortages, mitigate price volatility, and prepare for demand growth and other market shifts."[33]

The Energy Act of 2020 identified a need to secure continued access to critical materials, defined as "any non-fuel mineral, element, substance, or material that the Secretary of Energy determines . . . has high risk of a supply chain disruption[] and serves an essential function in 1 or more energy technologies, including technologies that produce, transmit, store, and conserve energy."[34] Relevant here, the Department of Energy, in its 2023 *Critical Materials Assessment*, projects that copper will be a "near-critical" material in the medium term (2025 to 2035).[35] DOE, moreover, identified copper as a "critical material for energy" in its Final Critical Materials List.[36]

### *3. Non-governmental experts have concluded that the United States will need more copper in the coming decades, likely outstripping supply*

There is broad public acknowledgment that copper is and will continue to be an essential mineral, and that current levels of copper production are likely insufficient to meet global demand in the face of those growing demand pressures from the energy transition. S&P Global, in its *Future of Copper* study, outlined its demand projections for copper as the United States and other nations pivot towards electrification and clean energy policies. The report predicts a doubling of global copper demand by 2035—from about 25 million metric tons ("MMt") annually to about 50 MMt annually driven in large part by the increased adoption of electric vehicles (and the development of charging infrastructure) and the construction, deployment, and integration of renewable energy projects.[37] S&P Global also forecasts that global demand increases will remain resilient at approximately 50 MMt annually, well into 2050.[38]

S&P Global's forecasts generally accord with those of other entities. McKinsey & Company estimates that annual global copper demand will reach 36.6 MMt by 2031.[39] Wood Mackenzie, a leading energy consultant, forecasts that the annual demand for copper will grow to 56 MMt by 2050, an increase of about 75 percent.[40] The Department of Energy likewise observes that "[t]he

[33] *Id.* § 1602(a)(1), (3).

[34] *Id.* § 1606(a)(2)(A).

[35] U.S. Dep't of Energy, *Critical Materials Assessment* 106 (2023), https://perma.cc/3JVX-67PR [hereinafter DOE *Critical Materials Assessment*].

[36] Notice of Final Determination on 2023 DOE Critical Materials List, 88 Fed. Reg. 51792, 51792 (Aug. 4, 2023).

[37] S&P Global, *The Future of Copper: Will the Looming Supply Gap Short-Circuit the Energy Transition?* 9, 11 (2022), https://perma.cc/FGD2-6KHH [hereinafter *Future of Copper*].

[38] *Id.* at 11.

[39] Scott Crooks et al., *Bridging the Copper Supply Gap*, McKinsey & Co. (Feb. 17, 2023), https://perma.cc/DHV2-PUB9 [hereinafter *Bridging the Copper Supply Gap*].

[40] Nick Pickens et al., Wood Mackenzie, *Securing Copper Supply: No China, No Energy Transition* 2 (2024), https://perma.cc/9QKD-SDV2 [hereinafter *Securing Copper Supply*].