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How Much Do We Need? Uncertainties in Future Metal Supply and Demand and Implications for the Minerals Industry

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Modern standards of living and the energy transition will require unprecedented levels of metal and mineral mining, especially of critical minerals and metals. This increase in metal and mineral demand is on top of a baseline of more current metal mining than at any other point in human history. However, future metal and mineral needs, the balance of metal and mineral supply and demand, and the influence of policy and geopolitics remain uncertain. Key uncertainties include (but are not limited to): (1) Demand uncertainty over metals and minerals required for the energy transition and the timing of this demand, (2) Supply uncertainty, or supply changes caused by variations in mining capacity, discovery, and other aspects such as co- and by-product extraction, (3) Technology uncertainty, or uncertainty over the technologies to be deployed during the energy transition, (4) Policy uncertainty or the negative and positive impact of policy and geopolitical changes relating to (or even distal from) mining and metal and mineral supply. These uncertainties are interlinked and can be compounded by the size of the specific metal and mineral sector in question. Importantly, these and other uncertainties operate at different timescales, with changes in demand often occurring rapidly relative to the longer-term time needed to bring new mineral and metal supply to market. This creates potential short, medium and long term under- and oversupply scenarios, as has happened with lithium and nickel where short-term oversupply has depressed prices, putting individual projects in jeopardy and creating uncertainty over the long-term supply of two key commodities. This presentation will provide an overview of the uncertainties facing the minerals industry, the information and data we need to consider relating to these uncertainties, and ways forward to resolve these uncertainties to create more sustainable metal and mineral supply chains.