

# AN INVESTOR'S GUIDE TO COPPER IN 3 CHARTS

Demand for copper is expected to surge by around **54%** between 2022 to 2050.<sup>1</sup>

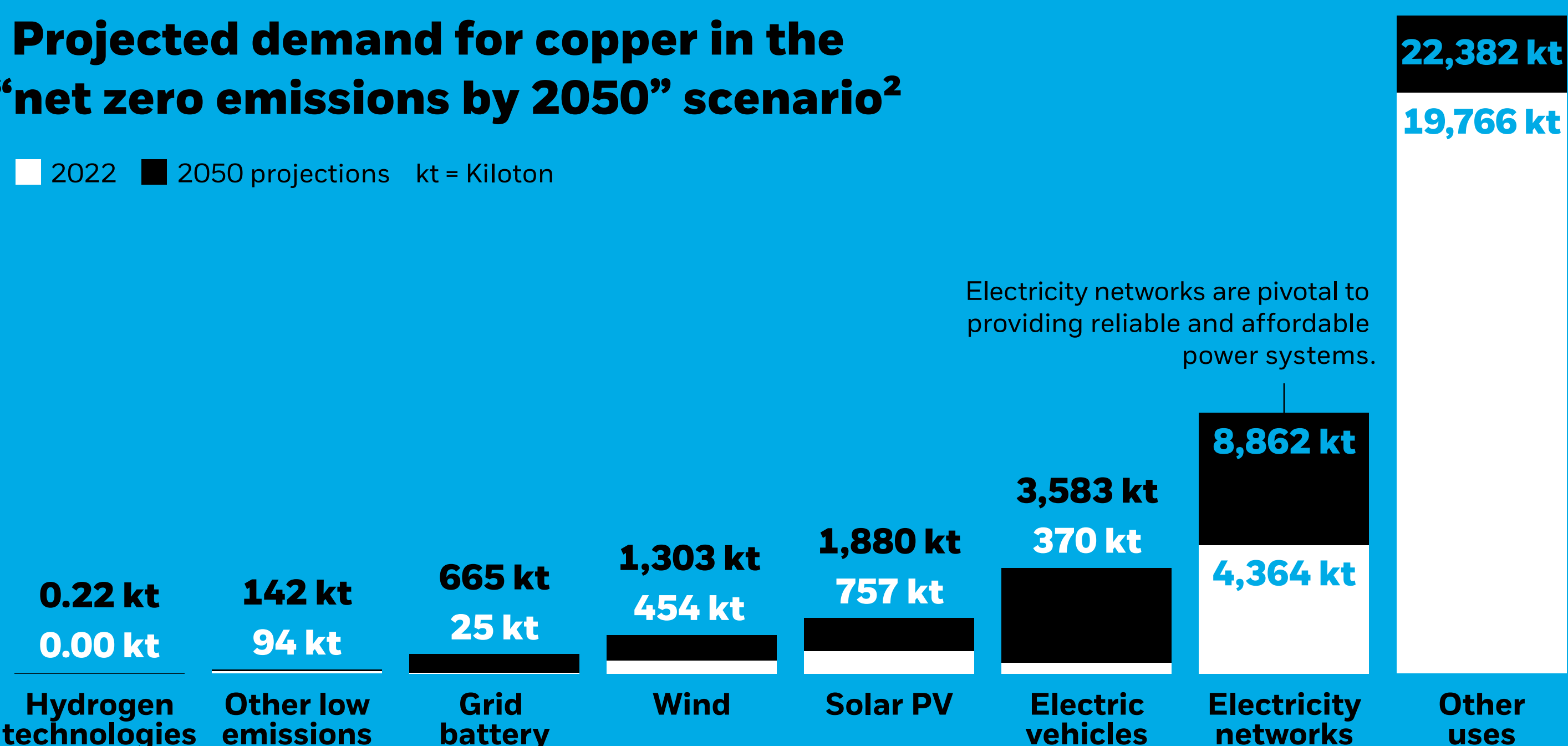
<sup>1</sup>Source: International Energy Agency (IEA), Critical Minerals Data Explorer 2023. There is no guarantee that this projection will be achieved.

Here are three things to know about the copper market's future.

## 1 HOW MUCH COPPER DO WE NEED?

Projected demand for copper in the "net zero emissions by 2050" scenario<sup>2</sup>

■ 2022 ■ 2050 projections kt = Kiloton



Electricity networks are pivotal to providing reliable and affordable power systems.

Note: "Other uses" refer to projections for applications, including transport and power generation outside of the clean energy scope.  
<sup>2</sup>Source: International Energy Agency (IEA), July 2023. There is no guarantee that this projection will be achieved.

**“Copper is a crucial metal for the transition to a low-carbon economy. It is helping wire the present to the future as an important input for EV batteries, solar panels, and wind turbines.”**



Jay Jacobs  
U.S. Head of Thematics & Active Equity ETFs, iShares

## 2 HOW MUCH COPPER DO CLEAN ENERGY TECHNOLOGIES USE?

### Copper Use<sup>3</sup>

MW = Megawatt lb = Pound



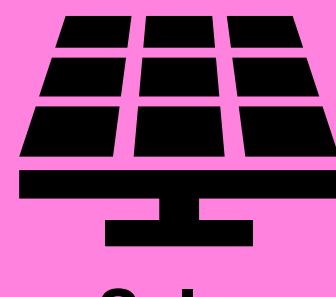
EVs

Hybrid electric vehicle (HEV) **88 lb per vehicle**

Battery electric vehicle (BEV) **183 lb per vehicle**

Hybrid and electric buses **183 to 814 lb per vehicle**

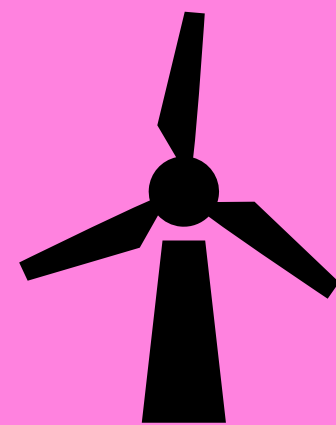
Over 10 million EVs were sold worldwide in 2022.<sup>4</sup>



Solar

Solar power systems **11,000 lb per MW**

Solar PV became the third-largest renewable electricity technology in 2022.<sup>5</sup>



Wind turbines

Onshore wind farms **7,766 lb per MW**

Offshore wind installation **21,068 lb per MW**

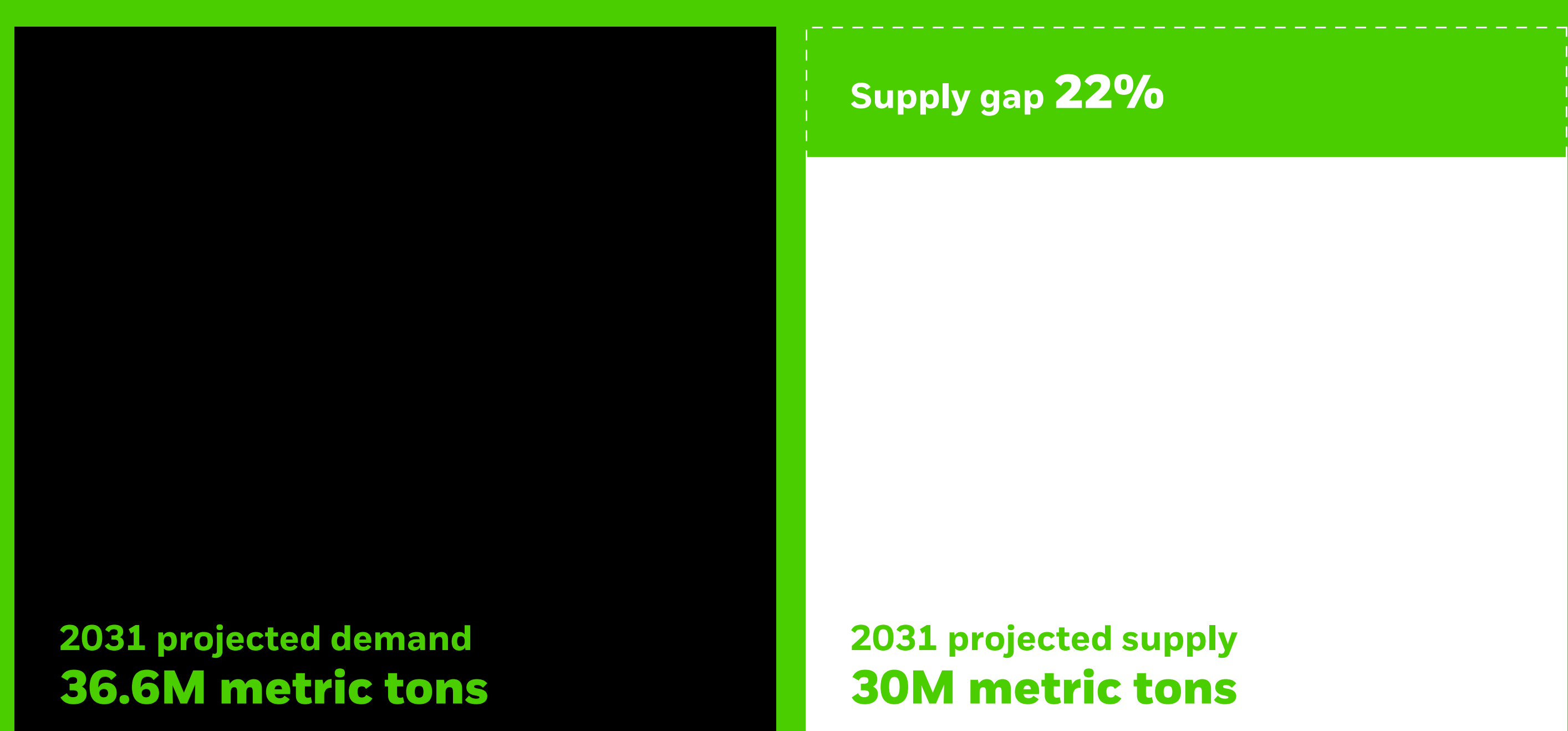
The cabling in offshore wind farms requires more copper to connect to onshore systems.<sup>3</sup>

Note: EV, solar, and wind are estimates based on average copper usage calculated by the Copper Development Association Inc. Subject to change.  
<sup>3</sup>Source: Copper Development Association Inc., 2023  
<sup>4</sup>Source: IEA, Global EV Outlook April 2023  
<sup>5</sup>Source: IEA, Solar PV July 2023

## 3 WHEN WILL COPPER DEMAND EXCEED SUPPLY?

A copper supply gap is anticipated by 2031.<sup>6</sup>

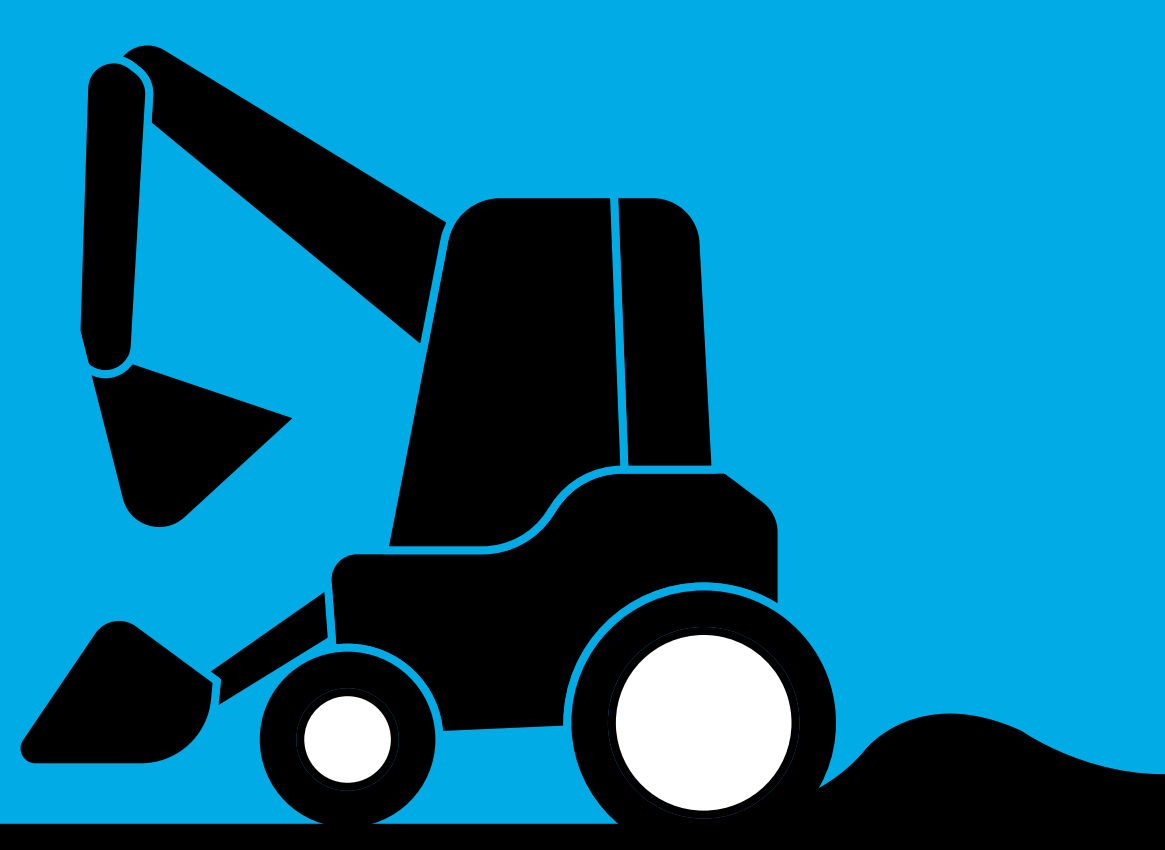
As copper demand continues to grow increased production of this critical metal is vital for the net zero future.



<sup>6</sup>Source: McKinsey & Company, February 2023

Note: There is no guarantee that this projection will be achieved. Subject to change.

Investors looking for copper exposure may want to consider an ETF that seeks to track an index composed of companies focused on the exploration and mining of copper.



Learn more about investing in copper with iShares

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ICRMH1223U/S-3275000