



Copper Underpins Development of EV Charging Infrastructure

Study Name: The EV Charging Infrastructure Market

Study Author: Navigant Research

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With electric vehicles firmly on the global agenda, the rise of plug-in electric vehicles will in turn require an extensive charging infrastructure. A new study by Navigant Research predicts over 40 million charging ports will be needed by 2027, and within these alone—discounting broader wiring and electricity generation and distribution—copper demand will be over 100,000 tonnes per year.

Overview

Though currently just 1–2% of global car sales, the research—commissioned by the International Copper Association (ICA)—predicts the global PEV population will rise to 58 million by 2027. With a greater number of cars comes a greater need for charging infrastructure, and copper’s intrinsic values give it a dominant role in the market.

A crucial material in the construction and development of electric vehicle charging equipment, it’s predicted that over 100,000 tonnes of copper will be needed to satisfy the demand just in port charging cables, charging units and wiring to electrical panels.

Key Findings

- For select equipment only, copper demand will rise to over 100,000 tonnes by 2027.
- More (and longer-range) PEV models are entering the market, causing demand to rise significantly.
- PEVs will drive the need for chargers at all power levels for homes, garages, offices, and long-distance highway driving.
- Over time, EV charging will rise in average power ratings to serve the longer-range PEVs.
- New copper demand will come from—amongst other infrastructure items—charging cables, and wiring to connect chargers to the electrical panels.

Copper in Four Infrastructure Elements

1. Charging units: typical use is around three feet of wires.
2. Wiring to electrical panels: the largest source of new copper demand directly related to infrastructure installations.
3. Charging cables: whilst their length varies, the standard is 25 feet.
4. New electricity generation: EVs will drive thousands of gigawatts of demand in future.

New Copper Demand

Using Navigant’s forecasts for EV charging sales (based on PEV forecasts) and estimates for copper content in EV charging equipment provided by industry, Navigant estimates annual sales of select EV charging equipment will drive demand for 20,000 tonnes of copper in 2018, rising to over 100,000 tonnes by 2027. Additional material demand from new electricity generation will be added in the final report.

Annual New Copper from EV Infrastructure Installation by Region, World Markets: 2018–2027

