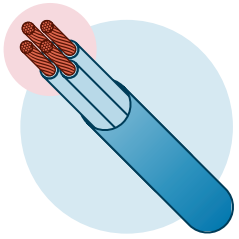
CROSS-SECTOR ALERT ON COPPER WIRE THEFT FROM EV CHARGING STATIONS

OVERVIEW

The increase in global demand for copper in recent years has led to a surge in copper wire theft at critical infrastructure facilities across the United States. Wireless network towers, electrical substations, utility poles, water pipes, and construction sites are common targets of copper wire theft.[1] In particular, criminal actors are increasingly targeting electric vehicle (EV) charging stations nationwide. The damage to EV charging stations from copper wire theft is costly to repair and, when experienced at a large scale, can threaten public safety and disrupt transportation, energy systems, and other critical infrastructure. This Cross-Sector Alert is intended to provide guidance to law enforcement, first responders, recycling centers, and others regarding copper wire theft from EV charging stations.



WHY ARE EV CHARGING STATIONS A TARGET?

EV charging station wires are made with copper, making the cables a target for thieves who want to sell the copper wires for profit. Charging stations are often unlocked and unguarded in public areas with minimal surveillance, allowing easy access for thieves. Thieves stealing copper wires may tamper with charging stations' electrical components, short-circuit chargers, and cause other dangerous and expensive damage.[2]

IMPACTS OF COPPER WIRE THEFT

The theft of copper wire at EV charging stations poses significant challenges for law enforcement, first responders, maintenance crews, and EV drivers, among others. Copper theft can have far-reaching impacts, including an increased risk of electrical fires or electrocution from exposed wires, an overload to residual charging stations, fewer usable charging stations, and higher charging prices for drivers.

CHARGING DESERTS AND ANXIETY

Copper wire theft can render entire stations inoperable for extended periods of time, exacerbating the current lack of accessible, reliable charging stations in many parts of the United States. About one in five U.S. charging stations does not work reliably.[3] Increasing this scarcity further is causing charging "deserts," or long distances without a single public charger.[4]

Not only does this cause significant problems for EV drivers, but it also directs traffic to a smaller number of stations that must supply an outsized proportion of power to EVs, particularly during peak hours. Potentially, this could lead to an overload of residual stations and a strain on the electrical distribution system.[5]

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1 "Protecting the Nation's Critical Communications Infrastructure from Theft and Vandalism," NTCA, 2024, https://www.ntca.org/sites/default/files/documents/2024-11/infrastructure-theft-paper.pdf

2 Pat Pape, "Protect Your EV Charging Station from Vandals," NACS Magazine, April 2024, https://www.nacsmagazine.com/Issues/April-2024/Protect-Your-EV-Charging-Station-from-Vandals

3 Kyle Stock and Tope Alake, "Thieves Hunting for Copper Are Vandalizing American EV Chargers," Bloomberg, September 23, 2024, https://www.bloomberg.com/news/articles/2024-09-23/america-s-public-ev-chargers-have-a-vandalism-problem

4 Barbara DeLollis and Glen Justice, "The state of EV charging in America: Harvard research shows chargers 78% reliable and pricing like the 'Wild West'," Harvard Business School, June 26, 2024, https://www.hbs.edu/bigs/the-state-of-ev-charging-in-america

5 Rania A. Ibrahim, Ibrahim M. Gaber, and Nahla E. Zakzouk, "Analysis of multidimensional impacts of electric vehicles penetration in distribution networks," Scientific Reports 14, 27854 (2024): https://doi.org/10.1038/s41598-024-77662-6

CASE STUDY: CABLE THEFT IN SEATTLE, WA

Like many municipalities across the country, the city of Seattle has experienced an increase in cable theft at charging stations. Seattle City Light, the city's public utility provider, owns and operates direct current fast charger (DCFC) charging stations across the city, and became the target of copper wire thefts. Between March 2023 and January 2024, criminal actors targeted 8 of Seattle City Light's 13 DCFC stations. On average, repairing and installing a single City Light DCFC cable costs roughly $2,500.[6] Similar to other U.S. cities affected by copper wire theft, the copper wire thefts at EV charging stations in Seattle created "charging deserts."[7]

Seattle City Light DCFC charging station.

CCC cables contain three internal copper wire conduits and a smaller section of communication wires. CHAdeMO cables contain two internal copper wire conduits and three smaller sections of communications wires.

SAFETY CONCERNS AROUND DAMAGED EV CHARGING STATIONS

EV charging stations targeted by copper wire thieves can pose a significant risk to first responders, law enforcement, maintenance personnel, and the general public. Their safety relies on several considerations.

Fire Hazards: Thieves may access the copper wire by burning away the rubber or plastic coatings, damaging the charging cable.[8] Tampering with the charging station can cause other types of damage to the electrical system. Like other electrical applications and equipment, improperly grounded charging stations damaged by thieves can lead to electrocution or fire. Lithium batteries, which are often used in EVs and at charging stations, pose particular fire risks. An increased risk of fire can ignite flammable, explosive, or combustible vapors or gases present at or near the damaged charging station.

Electrocution/Injury: Exposed copper wires inside a charging cable may have sharp edges and could cause lacerations to anyone not wearing personal protective equipment. Damaged cables may also be attached to functioning charging stations with live electric currents, making them live wires that should be treated with extreme caution.

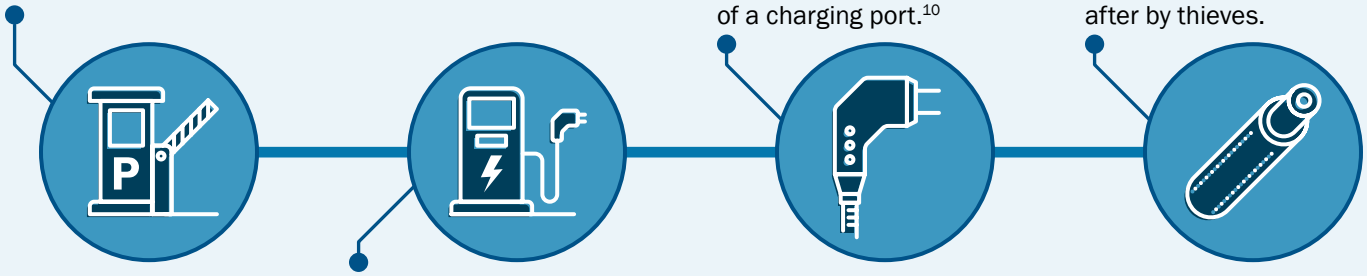
HOW TO IDENTIFY AND REPORT A DAMAGED EV CHARGER

Responding to copper wire theft at EV charging stations requires emergency personnel to understand the potential hazards particular to charging infrastructure. Identifying hazards begins with recognizing the components of charging infrastructure that thieves may target:[9]

Station location: Charging stations are often located in parking garages or lots and have one or more EV charging ports.

Connector: This plugs into the vehicle to charge it. Multiple connectors and connector types can be part of a charging port.[10]

Charging cables: Cables that transfer electric current to charge vehicles contain copper wire that is sought after by thieves.



EV charging port (or charger): Charging ports, sometimes called electric vehicle supply equipment (ESVE) ports, provide power to charge one vehicle at a time, although they may have multiple connectors. The unit housing the EV charging port is sometimes referred to as a charging post, which may contain one or more charging ports.

Record evidence, but do not disturb the scene. Wait for law enforcement to arrive and neutralize potential hazards.

Survey the type of damage to the EV charging station and note potential hazards. Potential hazards include the emission of any flammable, explosive, or combustible vapors or gases, which are highly dangerous and may be present at the charging station.[11]

Frayed cables, open or cracked EV connectors, and broken insulation should be treated as hazards.

Ensure only authorized personnel are on-site to respond. Consult with on-site staff while surveying the scene and notify them of hazards. Staff may also have training on managing charging stations and may be authorized to conduct emergency response procedures.

Locate charging infrastructure that may require immediate action. Authorized personnel will note where the emergency shut-off (e-stop) is located, which will allow the site host to disconnect power to the charging stations in an emergency. Charging stations may also have a charge circuit interrupting device (CCID) or ground fault circuit interrupter (GFCI) to cease the flow of electricity to stations. These may need activation at the time of response.

Identify the kind of wiring that has been stolen and any distinguishing features. Some copper wires obtained from Tesla chargers bear special markings from the manufacturer, such as "Property of Tesla Motors." Some cable manufacturers may also use theft deterrent systems that release dyes on cables that have been tampered with. This information may assist in investigations if thieves attempt to sell copper wire to scrap metal yards.

Some copper wiring, such as Tesla wires, bear distinctive markings.

WHO TO NOTIFY

Copper wire theft at EV charging stations is not merely a criminal issue, but an infrastructure threat with cascading impacts across transportation, public safety, and energy systems. Recognizing and addressing the vulnerabilities of EV charging infrastructure will be essential to sustaining reliable and secure access to EV charging nationwide.

Consult your Emergency Response (ER) or Emergency Action Plan (EAP) for steps to address damaged charging stations. *Points of contact to notify may include:*

- Emergency Services - Law enforcement or fire services
- Charging station owner
- Charging station manufacturer

6 Mo Haider, "Vehicle charging stations targeted by copper thieves, Seattle City Light says," KOMO News, January 16, 2023, https://komonews.com/news/local/vehicle-charging-stations-targted-by-copper-thieves-electric-tesla-public-seattle-city-light-car-wire-strang-curbside-puget-sound-washington-truck-drive-cable-app-supply-chain

7 Seattle-area EV drivers left searching for fast chargers due to 'epidemic' of cable theft," Geek Wire, accessed July 8, 2025, https://www.geekwire.com/2024/seattle-area-ev-drivers-left-searching-for-fast-chargers-due-to-epidemic-of-cable-theft/

8 Tom Krisher, "Thefts of charging cables pose yet another obstacle to appeal of electric vehicles," AP News, June 12, 2024, https://apnews.com/article/electric-vehicles-charging-cables-stolen-copper-tesla-5f003686cade63fade2e8d7dd3402f3a

9 "OCPI," EVRoaming Foundation, accessed May 20, 2025, https://evroaming.org/ocpi/

10 Ibid.

11 "CT4000 Networked Charging Station Site Design Guide," ChargePoint, accessed May 20, 2025, https://docs.chargepoint.com/ref-docs-sec/content/pdfs/2-ac/ct4000/ct4000-sdg.pdf