



Canadian
Electricity
Association

Association
canadienne
de l'électricité

COPPER THEFT

from Canada's Electricity Infrastructure



DANGER

**DANGEROUS, EXPENSIVE AND
A THREAT TO RELIABILITY**

For more information

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EXECUTIVE SUMMARY

Electricity is central to our lives at home and at work, and to our prosperity as a nation. Canada's reliable and secure electricity system contributes to the high quality of life enjoyed by Canadians, provides businesses with a substantial competitive advantage, and is a key contributor to stability and economic growth.

As a stand-alone sector, electricity contributed \$30.5 billion to Canada's GDP in 2012, provided over 108,000 jobs in 2010 across the country, and added \$1.7 billion to our trade balance with the United States in 2012. Electricity is an enabler for every other sector of the economy. It is an essential input for growth in capital investment and in a range of key industries including energy, manufacturing, and mining.

Simply put, electricity is the backbone of Canada's national prosperity.

The next twenty years will be a transformative period for the sector as decades-old infrastructure will be renewed and expanded to meet growing demand and integrate new technologies. According to the Conference Board of Canada, the electricity sector needs to invest \$347 billion over the next twenty years, which will bring an additional \$1.9 billion per year in revenues to governments across the country through to 2030¹.

As Canada's electricity sector enters this transformative period, the way that we protect Canada's grid must also evolve to meet new and growing threats. Theft of copper from electricity infrastructure, while not a new threat, is a growing one that is dangerous, expensive and a threat to the reliability of Canada's electricity system.

Each and every year there are hundreds of copper thefts across the country which have resulted in power outages, increased costs to utilities that are ultimately passed on to Canadians, injuries, and in some cases, even deaths.

As the voice of the Canadian electricity sector since 1891, the Canadian Electricity Association (CEA) believes further action must be taken to deter copper theft in Canada. Decision-makers at all levels of government must begin to work together to address this serious and dangerous issue. This paper will outline, in detail, the dangers of copper theft, its costs, and its threat to system reliability. It will also provide an overview of actions that have been taken so far by the electricity sector, by stakeholders, and by provinces to combat copper theft, and it will outline four detailed recommendations that CEA believes are vital to deterring copper thefts in Canada.

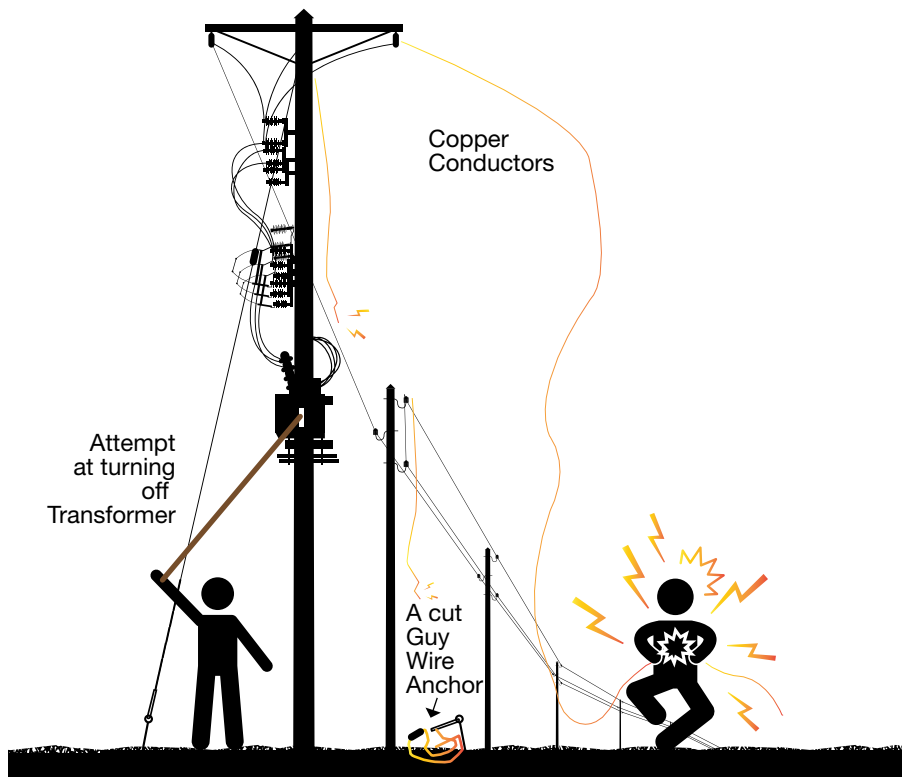
RECOMMENDATIONS:

1. **Action by All** – A National Action Plan to Implement Best Practices and Approaches Across the Country
2. **Coalitions to Combat Copper Theft** – Communities Working Together Locally to Deter Copper Theft
3. **Provincial Regulation of Scrap Metal Dealers** – Take the Cash Out of Copper Theft
4. **Amendments to the Canadian Criminal Code to Accurately Reflect the Severity of Copper Theft**

A. INTRODUCTION

THE IMPORTANCE OF COPPER TO CANADA'S ELECTRICITY GRID

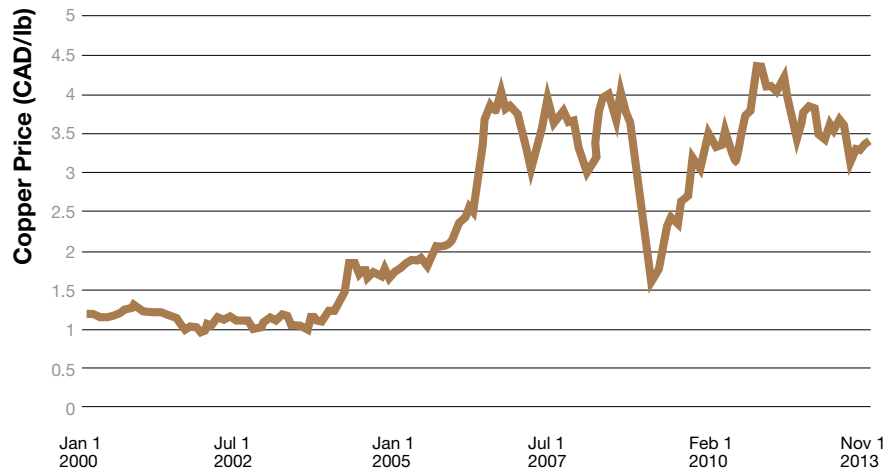
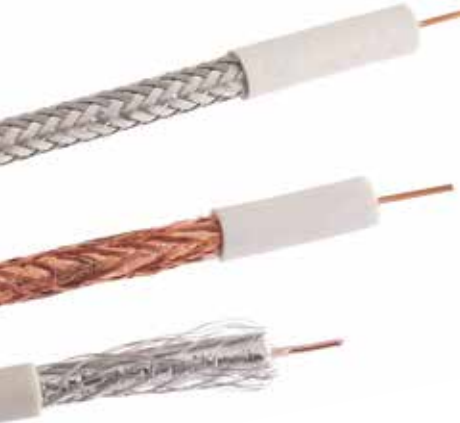
Copper is a ductile and malleable metallic element that conducts heat and electricity which is widely used for electrical wiring, water piping, and corrosion-resistant parts. Copper is the preferred electrical conductor in almost all categories of electrical wiring and is used extensively in power generation, transmission, and distribution infrastructure. An added advantage is that copper also allows utility workers to perform repairs on electricity facilities without fully powering them down, ensuring that Canadians and businesses have uninterrupted electricity service. As such, copper components can be found on the vast majority of transmission and distribution towers, poles, and substations located in every part of the country, from the smallest town to Canada's largest cities.



Above is an illustration that shows the components of a distribution pole, including copper conductors.

COPPER: A VALUABLE COMMODITY

Over the last 10 years, the value of copper in Canada has increased 209 per cent.² While the price of copper has decreased slightly in recent years, it remains very valuable and scrap metal dealers are still eager to buy copper.



The above graphic notes the significant increase in the value of copper over the past 13 years. (Source: InfoMine)

Unsurprisingly, as the price of copper has increased, so have copper thefts from electricity infrastructure. While utilities are constantly reviewing and improving security procedures, sharing best practices with other utilities, and participating in working groups and coalitions with other stakeholders, and despite the fact that some provinces have recently implemented new laws and regulations to address copper theft, the problem persists.

ELECTRICITY IS CRITICAL INFRASTRUCTURE

Canada's *Action Plan for Critical Infrastructure* deems energy and utilities to be one of Canada's ten critical infrastructure sectors. Providing these sectors with the tools—such as those outlined in this paper pertaining to copper theft—will enable the electricity sector to operationalize and implement the *Action Plan* principles and better protect Canada's critical infrastructure.

One of three key judgements in an unclassified 2008 Intelligence Assessment, *Copper Thefts Threaten U.S. Critical Infrastructure*, further highlights the severity of the issue across North America. According to this FBI assessment:

“Copper thieves are threatening US critical infrastructure by targeting electrical substations, cellular towers, telephone land lines, railroads, water wells, construction sites, and vacant homes for lucrative profits. The theft of copper from these targets disrupts the flow of electricity, telecommunications, transportation, water supply, heating, and security and emergency services and presents a risk to both public safety and national security.”³

The report also outlines the extent of the involvement of organized crime in copper thefts, and the increasing global demand for copper components that is contributing to a growing worldwide market for illicit copper.

FREQUENTLY ASKED QUESTION

Why can't electricity utilities simply build fences around all critical infrastructure and sites that have been affected by copper thefts in the past?

ANSWER – While most stations are enclosed by fence and equipped with warning signs in clear view, thieves ignore these warnings and cut through the fences. Moreover, many copper thefts occur to transmission and distribution towers and poles, as such it would be costly and impractical to enclose every structure across the country in fencing.



B. IMPACTS OF COPPER THEFT: DANGEROUS, EXPENSIVE AND A THREAT TO RELIABILITY

Copper theft is a dangerous and expensive crime that threatens the reliability of the electricity system upon which Canadians rely.

DANGEROUS

Copper theft not only puts the lives of the thieves at risk—with several fatalities occurring in recent years—but also the safety of emergency first responders, utility workers, and local residents.

EXPENSIVE

The theft of copper is quite costly to the electricity sector as well as to construction, telecommunication, and industrial companies. While copper is an expensive material to replace, costs to repair damaged infrastructure can be even more significant to these sectors.

A THREAT TO RELIABILITY

Copper is an essential component in ensuring electricity system reliability. It is vital to the safe and reliable generation, transmission, and distribution of electricity to our homes and businesses. Copper thefts cause unwanted disruptions to the services Canadians and businesses count on.



The Kitchen Cleaver: The tool of choice in copper thefts, despite the fact that it is extremely dangerous and never works. The kitchen cleaver above was recently used at an incident and immediately melted.

(Source: EPCOR Utilities Inc.)

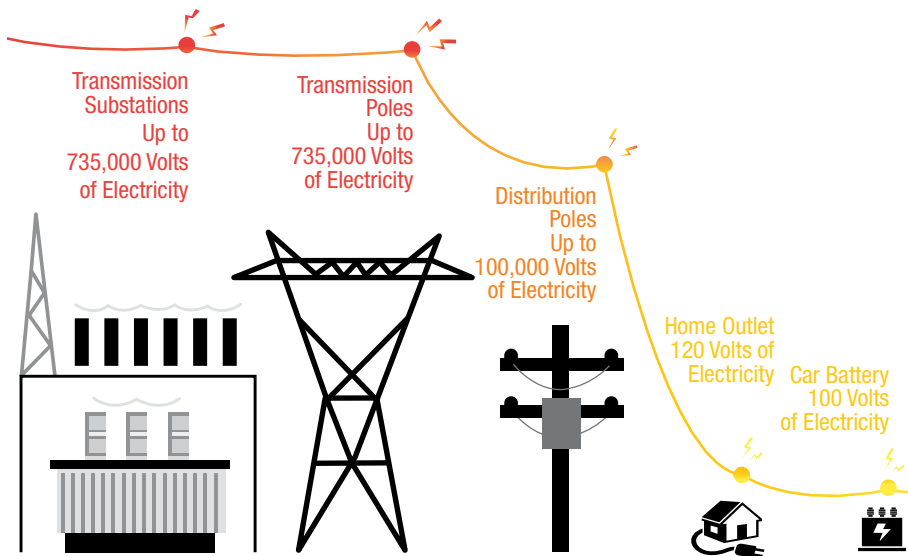
I. IN DEPTH: THE DANGERS OF COPPER THEFT

Stealing copper from electricity infrastructure is extremely dangerous. It not only puts the lives of the thieves in danger, but emergency first responders, utility workers, and local residents as well. Theft of copper from electricity infrastructure can cause fires, explosions, severe or fatal burns, and deadly electric shocks.

Based on media reports, since 2008, a number of Canadians have been seriously injured as a result of incidents of copper theft, and tragically, eight people have reportedly died. While all fatalities to date have been among the perpetrators, deaths of innocent citizens have been reported in the United States. It may only be a matter of time before a similar tragic incident occurs in Canada.

A surprising trend in copper theft is the lack of understanding the thieves have about the dangers of electricity. Many will attempt to use household tools like pliers, garden sheers and kitchen knives to cut the copper and only a pair of rubber gloves to protect themselves. Those rubber gloves may help protect from electric shock around the home, but do not stand a chance at a highly-energized substation or transmission line.

The voltage of electricity in transmission towers, poles and substations is over 6,000 times higher than the electricity entering homes—making it that much more dangerous.



The graphic above shows the significant difference in voltage from what is in your house and car to what is running in transmission and distribution towers, poles, and substations.

CASE STUDY – Copper Thefts on Vancouver Island Endanger Local Residents

March 2013, Vancouver Island, British Columbia – Thieves successfully removed copper grounds from transmission poles along a 62-kilometer stretch of isolated road. It is likely that the suspects took almost a year to complete this theft, removing copper grounds from each pole, piece by piece.

As a result of these missing copper grounds, the safety of families on a nearby First Nations reserve was at risk. Residents from the Ditidaht First Nation's Malachan reserve reported receiving electric shocks in their homes. In addition, they lost power for 72 hours while BC Hydro and Power Authority crews worked

overtime to replace the missing copper grounds and restore service. Children at a nearby school repeatedly received shocks and jolts from a fence that had become electrified in their schoolyard.

This incident is typical of others and put local children and residents in serious danger while causing a significant outage to an entire community.⁴

CASE STUDY – Copper Theft Claims the Life of a Young BC Man

May 2005, Langley, British Columbia – During his morning rounds, a BC Hydro and Power Authority employee came across a grisly scene, the body of a young man near an electricity distribution substation. The man was attempting to steal copper from an underground junction box and was fatally electrocuted in the process.

The man, only 35 years old, was painfully electrocuted by 14,000 volts of electricity.⁵

CASE STUDY – Copper Theft Leaves Utility Worker with Unforgettable and Damaging Images

2008, Edmonton, Alberta – While performing routine surveillance on a distribution substation, Darren, a power trouble employee from EPCOR Utilities Inc., witnessed an incident that had traumatic personal consequences. A young man who had attempted to steal copper grounding straps from a substation yard was left severely shocked, burnt, bleeding, and screaming from pain. Based on an interview with Darren, here is a recount of the situation and the troubling weeks that followed:

As a power trouble employee, getting a call early in the morning to help rescue someone attempting to steal copper out of a high voltage substation yard was really just one of a number of unusual calls trouble crews could expect to receive on any given shift. Through the rescue process, Darren’s head remained clear despite the gruesome nature of the scene and he successfully got the alive—but badly-injured victim—to emergency responders already on scene.

Following the event, Darren returned to the service centre and headed home feeling relatively normal, albeit a little bothered. But when he arrived home, he still couldn’t shake the feeling and it continued to get worse.

Darren explains: “I couldn’t keep it together, I couldn’t understand what was going on; this had never happened to me before.”

After calling in to work to tell his foreman that he was going to take the day off because he wasn’t feeling right, he thought he would feel better the next day. But the trauma of the copper theft victim rescue seemed to be sticking with him.

Earlier in his career at EPCOR Utilities Inc., Darren had been electrocuted on the job and the smell of burning flesh he smelled the night of the copper theft seemed to have triggered something in his brain relating to his own incident several years before.



EPCOR Utilities Inc. employee Darren recounts the details of a copper theft incident and the difficult weeks that followed.

(Source: EPCOR Utilities Inc.)



The substation yard where the thief broke in, attempting to steal copper.
(Source: EPCOR Utilities Inc.)

He continues: “I wanted to go back to work, but mentally I just couldn’t keep it together. I was in a daze”.

He spent the next three weeks off work, dealing with internal mental struggles that lead to interpersonal challenges not only at work, but at home as well. By working with a counselor from EPCOR Utilities Inc.’s third party employee support provider, Shepell, Darren improved and things seemed fine again.

Today, Darren has fully recovered from his response and actions to the 2008 incident, but still vividly remembers the horrifying details as they unfolded that morning.

These examples are a sad reminder that copper theft is dangerous and can have serious and sometimes deadly consequences, not only for the perpetrators, but also for local residents and utility workers.

FREQUENTLY ASKED QUESTION

Why don’t electricity utilities equip their infrastructure sites, especially ones with a large amount of copper, with security guards?



ANSWER – Equipping each site with a security guard would come at a monumental cost that would lead to increased costs for Canadians. While electricity utilities attempt to make their infrastructure as secure as possible with fences, video surveillance, and warning signs, more must be done nationally to deter thieves from stealing copper.

II. IN DEPTH: THE COST OF COPPER THEFT

Copper theft is costly to the electricity sector. With hundreds of incidents occurring in provinces and territories across the country year after year, the costs of copper theft to electricity utilities are significant. A typical incident can include the following costs:

- A minimum of \$500 for fence repairs;
- \$560 – \$1000 for a repair crew and truck for a typical 2–4 hour repair job (one truck and two-person crew cost around \$280/hour);
- \$300 – \$500 for replacement materials (this cost could skyrocket depending on the amount of copper stolen); and
- A minimum of \$100 for administration and investigation

While these variables provide a good estimate for the costs of a typical incident they often do not include the cost of additional jobs that are delayed while crews undertake repairs to replace the stolen copper, the cost of overtime, or the increased cost when large quantities of copper are stolen.

Based on the criteria listed above, CEA members across the country estimate that copper theft costs the Canadian electricity sector approximately \$40 million each and every year.

Canada’s electricity sector is not the only sector feeling the impacts. Notably, copper theft also impacts the construction, rail, and telecommunications sectors. TELUS estimated that theft of copper wire in 2011 cost the company approximately \$20 million in Alberta and British Columbia alone.⁶

In the United States, The U.S. Department of Energy recently estimated that copper theft costs U.S. businesses nearly \$1 billion in losses annually.⁷

Ultimately, for the electricity sector and other consumer-based sectors, costs are passed on to Canadians through higher electricity bills. By taking action to deter copper theft, we can save the electricity sector and Canadian companies money, which in turn protects the economy and ensures no additional costs for Canadians.

CASE STUDY – Single Copper Theft Incident Costs BC Hydro and Power Authority \$2.8 Million

April 2010, Vancouver, British Columbia – Seven men attempted to steal copper from a substation that resulted in \$2.8 million in damages and missing copper.

The men were spotted by an employee of the City of Vancouver who was working nearby. The employee saw the perpetrators loading wire into a van and called police immediately.

Using hacksaws and other household tools, the men cut through a chain-link fence and stripped large cables to access the copper, damaging a \$2.7 million cable. Another \$100,000 cable was removed from the site and never found.

While this was a huge cost to BC Hydro and Power Authority the men were lucky to have sustained no injuries. Their actions not only put their own safety at risk but the safety of the emergency first responders, utility workers, and local residents.

It is estimated that in 2011, BC Hydro and Power Authority losses related to the theft of metal—mainly copper wire, totaled over \$1 million.⁸

CASE STUDY – Copper Theft Costs Mining Company Big Bucks, Delays Re-Opening

October 2011, Gays River, Nova Scotia – The theft of 150 meters of copper wire from a zinc and lead mine in Gays River, Nova Scotia delayed the re-opening of the mine in 2011.

The stolen wire connected the pumps that drain water out of the open pit mine. Without the wire, the mine flooded.

Luckily, no one had been in the mine at the time of the theft as it could have posed a significant danger.

The total cost to replace the stolen copper wire was \$23,000 and the total cost to repair all damages and drain the mine was \$50,000—a setback the company was certainly not expecting. The mine's opening was delayed for over a month.⁹

On top of the cost of replacing the wire and draining the mine, 31 employees had their jobs put on hold and new hiring was frozen—costing Canadians, their families and the economy.



Copper wire that has been tampered with at an electrical substation in Ontario.

(Source: Hydro One Inc.)

III. IN DEPTH: A THREAT TO RELIABILITY

While the dangers and costs of copper theft are significant, the impacts of copper theft on system reliability have the potential to have the greatest impact.

While power outages are inconvenient for families, they can also jeopardize critical infrastructure like emergency care in hospitals and disruptions to vital services resulting in lower productivity and losses for business.

By deterring copper theft, we can ensure Canadians can continue to rely on electricity each and every day to power their homes, communities, and businesses.

CASE STUDY – Leaving Canadians in a Vulnerable Position

May 2012, Delta, British Columbia – A large copper wire theft left 2,800 TELUS customers without 9-1-1 services for 24 hours.

This is only one example of the many incidents where Canadians are left without access to critical services because of copper theft. Service disruptions caused by copper theft impact an array of services and necessities including emergency response systems, health care, 9-1-1 services, street and traffic lights, highway warning signs, and railway signals.¹⁰



Toronto, Ontario:
Commuters were delayed
up to 40 minutes due to
severed GO Transit train
signaling cables.
(Source: GO Transit)

CASE STUDY – 45,000 Commuters Stranded and Delayed Because of Copper Theft

August 7, 2013, Toronto, Ontario – Thieves looking for copper wire severed Toronto GO Transit train signaling cables early one morning.

The cut cables caused delays of up to 40 minutes for 24 trains on GO Transit Lakeshore East line, delaying up to 45,000 commuters on their way to work. An investigation into this incident continues.¹¹

CASE STUDY – Metal Theft Disables Landing Lights at Airport in Western Newfoundland

November 17, 2007, Stephenville, Newfoundland – Theft of copper wire at the Stephenville Airport in Newfoundland disabled the lights on a runway, impacting air traffic throughout the province.

The theft damaged the whole approach system on Runway 27 and disabled the use of its instrument landing system. Usually, if there is bad weather at other airports across the island, including the St. John's International Airport, flights are diverted to the Stephenville Airport. However, because of this incident, this was not an option.

Luckily, the issue was addressed before any flights attempted to land, ensuring the safety of air passengers.

The Stephenville Airport Manager estimated that the metal theft, which contained mainly copper wire, caused damages of around \$150,000.¹²

CASE STUDY – Copper Theft Forces Doctor's Office to Treat Patients by Candlelight

October 2013, Surrey, British Columbia – A Surrey family clinic that serves over 200 patients per day was left struggling for resources for more than two days because of copper theft.

Thieves stealthily cut the wire on a utility pole and awaited BC Hydro and Power Authority to come and shut off the power. Once the power was shut off, the thieves ventured to remove five meters of braided copper wire. The incident left the family clinic without power for two days, affecting the treatment of hundreds of patients.

The physician at the clinic noted that he couldn't understand why people would target a medical clinic where people are in dire need of seeing a family doctor. Working quickly, the clinic began to see patients by candlelight as they waited for an electrician to fix the power.¹³

As evidenced in these examples, copper theft is a serious threat to the reliability of the electricity upon which Canadians rely daily. It can put Canadians in vulnerable situations—cutting off access to 9-1-1 services, shutting down clinics, and stranding customers who rely on public transportation.



Surrey, British Columbia:
A copper theft incident left a family clinic without power for two days, affecting the treatment of hundreds of patients.

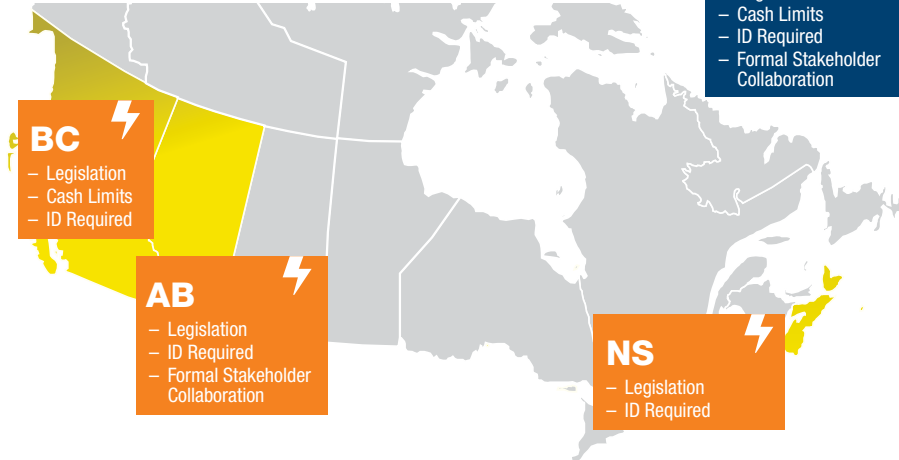
C. ACTION TAKEN THUS FAR

To date, CEA members, some provinces, and other stakeholders have taken action to deter copper theft in their own regions. While this has been quite successful in some areas, more work remains to be done.

PROVINCIAL AND TERRITORIAL LEGISLATIVE AND REGULATORY ACTION

- British Columbia introduced the *Metal Dealers and Recyclers Act* in October 2011, a law that came into effect in July 2012. This new law requires metal dealers and recyclers to register with the province before purchasing regulated metal; ensure

Action Taken by Provinces and Territories



potential clients provide proper identification; record information about the seller and the sale; provide a summary report of the purchase to the police on the same day of sale; and limit cash purchase to \$50 and under, ensuring all other purchases are paid by cheque.

Since the *Metal Dealers and Recyclers Act* came into effect, electricity utilities and other sectors in British Columbia have noticed a decline in copper thefts. Prior to the legislation, BC Hydro and Power Authority was experiencing 30–40 copper thefts each month; but as of December 2012 they experienced less than 20. Similarly, TELUS in British Columbia has seen a 50% decline in thefts since the legislation came into effect.¹⁴

- Alberta introduced a similar bill, the *Scrap Metal Dealers and Recyclers Identification Act*, which requires scrap metal dealers to seek proof of identification; keep a record of information on the seller for a minimum of one year; and provide that information to law enforcement on the same day of the sale. This Bill passed in May 2013 and regulations are currently being developed.
- Nova Scotia introduced and passed the *Safe Collection of Scrap Metal Act* in 2011, requiring dealers and recyclers to confirm the identity of the seller with a valid identification card; obtain and record all information about the transaction; keep the information for one year; and provide the information to the authorities if asked. Regulations are currently being developed.

COLLABORATION BY STAKEHOLDERS AND LAW ENFORCEMENT

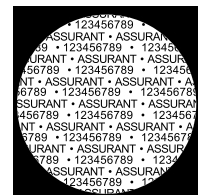
- AltaLink, an electricity transmission company in Alberta, has initiated a collaborative and inclusive working group on copper theft. The *Provincial Electricity Physical Security Group* is comprised of representatives from the electricity, construction, and communication sectors; law enforcement; government; and the criminal justice and legal communities. The group meets regularly to discuss the broader issue of copper theft and share best practices with the goals of increasing education and awareness, and developing mitigation strategies and sustainable solutions.

The *Provincial Electricity Physical Security Group* has also led to a change in approach by Crown Prosecutors, who will now consider charging copper thieves under Section 430(2) of the Criminal Code *Mischief Endangering Life* if electricity utilities can demonstrate that the copper theft endangered life. This requires the utility to train safety staff—often called as expert witnesses—on court procedures and the legal requirements to provide testimony that the copper theft in fact endangered life.

- According to a 2013 RCMP *Critical Infrastructure Intelligence Assessment*, special police units have been created across the country to specifically target metal theft.
- Public awareness campaigns by groups like Crime Stoppers have been initiated to highlight the potentially fatal consequences for thieves, and the effects of copper theft on communities and infrastructure.¹⁵ Crime Stoppers produces and distributes brochures and magazines alerting residents about the dangers of copper theft, how they can help stop it, and its effects on vital services. Crime Stoppers Calgary produced and distributed a brochure warning of the dangers of the “Red Gold Rush”.
- The Institute of Scrap Recycling Industries and the Canadian Association of Recycling Industries have developed an alert system—the Scrap Theft Alert System, www.scraptheftalert.com—to share information on thefts in a timely manner in Canada and the United States.

ACTION BY ELECTRICITY UTILITIES

- Many utilities have begun stamping their copper wire with their company’s name so if stolen and sold, the copper could be identified as stolen property. This is particularly helpful in British Columbia where there is a legislative backstop. In provinces and territories without legislation, recyclers and metal dealers are not required to report or inspect the wire, thereby limiting the effectiveness of the stamping.
- Various utilities have also begun using DataDot™ technology which is sprayed onto a cable for identification. The markings are the size of a grain of salt, with lines of text applied using a sophisticated laser process. The DataDot™ technology is virtually invisible to the naked eye but can be detected with the use of a UV light.
- All electricity utilities post warnings of dangerous sites that are susceptible to theft. Additionally, most utilities have also installed cameras and motion sensors, and patrol their sites nightly. EPCOR Utilities Inc. and others have also hired additional personnel to focus specifically on deterring metal thefts.
- Hydro-Québec and Hydro One Inc. have produced educational videos in collaboration with law enforcement to inform police officers and security personnel in their regions about copper theft, its dangers, and its consequences.



Virtually Invisible

The above image is what the DataDot™ looks like to the natural eye. The top image is what is encoded in the DataDot™.

(Source: EPCOR Utilities Inc.)



Hydro Ottawa
Holding Inc. Signage

(Source: Hydro Ottawa
Holding Inc.)

CASE STUDY – Efforts Implemented at Hydro-Québec Reduce Metal Thefts and Associated Costs

Hydro-Québec allocates significant resources to tracking and preventing copper thefts in Québec. These efforts include the development of communications products such as brochures and pamphlets, working with local law enforcement, and the production of an educational video on the effects of copper theft.

Since 2006, Hydro-Québec has experienced over 2,700 incidents resulting in over \$19 million in losses, with the highest amount of incidents and losses occurring in 2011, with 585 incidents totaling \$4.5 million in losses for that year alone.

However, recent efforts to deter and prevent copper thefts appear to be working. In fact, data for the years 2012 and 2013 indicate that thefts are occurring less and less. This translates to fewer theft-related injuries and a reduction in associated costs.

CASE STUDY – Nova Scotia Power Inc. Creates a Prevention Model to Crack Down on Copper Theft

Nova Scotia Power Inc. experienced over 100 copper thefts in 2009 that resulted in significant costs.

These thefts caused some short-term power outages, damaged equipment, and posed dangers to the public. Given this significant surge in copper thefts, Nova Scotia Power Inc. decided to try a new approach to deter copper theft across the province.

Nova Scotia Power Inc. implemented a Prevention Model that consisted of a variety of practices to help prevent copper thefts. This prevention model included:

- A tracking program to help quantify and identify which infrastructure needed most attention;
- A communications strategy to share best practices to field staff in areas that were susceptible to threats including outdoor storage facilities, substations, generation facilities, and transmission crews;
- The substitution of CopperWeld® instead of actual copper. CopperWeld® works similarly to copper but has little value as scrap metal;
- The installation of cameras and motion sensors at sites that had been previously hit by copper thieves; and
- A trial use of DataDot™ to detect which copper at scrap metal dealers belonged to them.

Their prevention model has been successful and copper thefts are beginning to decline. However, to ensure continued success, Nova Scotia Power Inc. hired several investigators on an as-needed basis to serve the company throughout the province. These investigators work with law enforcement to help find the perpetrators responsible for the thefts and learn new ways to prevent thefts from happening in the future.

While these actions have certainly seen success, more action is required to ensure that Canada, as a whole, is doing everything possible to deter copper theft across the country.

D. CEA RECOMMENDATIONS

CEA urges the federal, provincial and territorial governments to work together to deter copper theft in Canada. We believe that by implementing the following recommendations, the theft of copper would decrease significantly across the country. This would ensure fewer incidents of injury or death, reduced costs for the electricity sector and Canadian businesses, and enhanced system reliability that Canadians can count on each and every day.

1. ACTION BY ALL – A NATIONAL ACTION PLAN TO IMPLEMENT BEST PRACTICES AND APPROACHES ACROSS THE COUNTRY

CEA believes that the federal, provincial and territorial governments need to have a frank discussion on how best to deter copper theft in Canada. A National Action Plan for copper theft needs to be developed and implemented at all government levels and departments that deal with the various aspects of copper theft. Doing this will ensure that copper theft isn't simply pushed from one jurisdiction to another. It will also initiate a forum that enables all governments to share best practices and begin coordinating activities and actions to reverse current trends. This action plan will aim to implement best practices and approaches that have been proven successful in provinces across the country.

2. COALITIONS TO COMBAT COPPER THEFT – COMMUNITIES WORKING TOGETHER TO DETER COPPER THEFT

Some utility companies have formed working groups—coalitions of sorts—to deter copper theft within their province. These groups include law enforcement, the legal community, security personnel and others who are interested in deterring the theft of copper. These on-the-ground, local approaches are models that should be implemented across the country. While national and interprovincial efforts are important, there is no greater force than individuals who are directly involved on the ground in impacted communities.

3. PROVINCIAL LEGISLATION – TAKE THE CASH OUT OF COPPER THEFT

Three provinces—British Columbia, Alberta, and Nova Scotia—have already passed legislation to deter copper theft in their jurisdictions and there is evidence that these actions are having positive impacts. However, unless all provinces and territories take similar actions—namely more stringent regulation of the various aspects of the purchase and sale of copper—there will always be a more lenient jurisdiction in the province next door where stolen copper can be shipped for sale.

Provinces should regulate the purchase and sale of copper by using the following requirements as a starting point. Metal and scrap dealers must:

- Request proper provincial identification from each seller;
- Record information about the seller and the sale;
- Keep the recorded information on hand for up to 1 year;
- Relay to local law enforcement within 24 hours of the sale; and
- Take the cash out of copper completely – ensure all sales are paid in a manner that ensures a record of transaction.

To ensure an effective and efficient system, a database for law enforcement and scrap metal dealers should be initiated to reduce the burden and red tape for both business owners and authorities. This will also allow quick access for law enforcement when investigating suspects.

4. AMENDMENTS TO THE CRIMINAL CODE TO ACCURATELY REFLECT THE SEVERITY OF COPPER THEFT

At present, the Criminal Code penalties do not accurately reflect the severity of copper theft—they do not take into account the dangers copper theft pose to emergency first responders and local residents, nor the fact that many of the thefts occur to critical infrastructure. Currently, the Criminal Code does not contain a separate category of offences for tampering with, or theft from, electricity facilities. Those apprehended can only be charged with “theft under \$5000”, the same as stealing a bicycle—hardly a proportional sentence or deterrent for future offenders.

One of the several 2013 charges laid against the two men accused of an alleged Al-Qaida supported terror plot to attack a Via Rail passenger train in April 2013 related to interference with transportation facilities (Section 248 of the Criminal Code). This highlights how the Criminal Code can be used to target thefts that impact a specific sector:

“Section 248. Every one who, with intent to endanger the safety of any person, places anything on or does anything to any property that is used for or in connection with the transportation of persons or goods by land, water or air that is likely to cause death or bodily harm to persons is guilty of an indictable offence and liable to imprisonment for life.”

Section 248 could be used as a model for a new section to address copper thefts from electricity infrastructure.

Proposed new language:

“Everyone who, with intent to interrupt the flow of electricity that forms part of Canada’s electricity infrastructure, that is likely to cause death or serious bodily harm to any person or a disruption to the North American Electricity Grid is guilty of an indictable offence and liable to imprisonment for life.”

E. CONCLUSION

CONCLUSION

By working together and implementing the four recommendations—implementing a national action plan; forming coalitions to combat copper; introducing provincial legislation; and amending the Criminal Code—CEA believes that, collectively, we can be successful in significantly reducing copper theft across the country.

By doing so, we can reduce injuries and fatal accidents, achieve cost savings for the electricity sector and Canadian consumers, and ensure Canadians can continue to have access to reliable electricity.

After all, electricity is the backbone of the Canadian economy, and we must do everything we can to protect it and ensure its reliability today and into the future.

ENDNOTES

1. "Shedding Light on the Economic Impact of Investing in Electricity Infrastructure." The Conference Board of Canada. February 2012. www.conferenceboard.ca/e-library/abstract.aspx?did=4673
2. Forberg, Sigrid, "Copper Crime on the Climb," *RCMP Gazette*. Vol.75 (2013).
3. The Federal Bureau of Investigation, "Copper Thefts Threaten U.S. Critical Infrastructure," *Reports and Publications*, www.fbi.gov/stats-services/publications/copper-thefts.
4. "Remote Vancouver Island Community Loses Power for Days due to Copper Theft," *Global News*, March 17, 2013 www.globalnews.ca/news/410419/remote-vancouver-island-community-loses-power-for-days-due-to-copper-theft/.
5. "Would be Copper Theft Electrocuted," *The Vancouver Sun*, May 30, 2006, www.canada.com/vancouver/news/westcoastnews/story.html?id=23300fcd-ae18-48dc-bef1-43935f702213.
6. Courtney Whalen, "Thieves Steal Phone Service from Customers," *Drayton Valley Western Review*, June 19, 2012, www.draytonvalleywesternreview.com/2012/06/19/thieves-steal-phone-service-from-customers.
7. "Copper Theft 'like an epidemic' Sweeping US," *CNBC News*, July 30, 2013, www.cnn.com/id/100917758.
8. "Copper Thieves Destroy \$2.7M BC Hydro and Power Authority Cable," *CBC News*, April 14, 2010, www.cbc.ca/news/canada/british-columbia/copper-thieves-destroy-2-7m-bc-hydro-cable-1.882024.
9. "Copper Theft Delays Re-Opening of Gays River Mine," *CBC News*, October 14, 2011, www.cbc.ca/news/canada/nova-scotia/copper-theft-delays-reopening-of-gays-river-mine-1.978656.
10. Michael Miu, "Copper theft leaves 2,800 without 911 service in Delta," *24hrs Vancouver*, May 7, 2012, www.vancouver.24hrs.ca/News/local/2012/05/07/19728181.html.
11. Katrina Clarke, "GO-Train Signalling Cables Severed by Thieves Looking for Copper Wire: Police," *National Post*, August 7, 2013, www.news.nationalpost.com/2013/08/07/go-train-signalling-cables-severed-by-thieves-looking-for-copper-wire-police/.
12. "Theft Disables Airport Landing System in Stephenville," *CBC News*, November 16, 2007, www.cbc.ca/news/canada/newfoundland-labrador/theft-disables-airport-landing-system-in-stephenville-1.661775.
13. Tom Zytaruk, "Doctor Treating Patients by Candlelight due to Thieves" *The Now Newspaper*, October 15, 2013, www.thenownewspaper.com/news/doctor-treating-patients-by-candlelight-due-to-thieves-1.659627.
14. Shannon Moneo, "BC Law puts Huge Dent in Metal Thefts," *The Globe and Mail*, December 20, 2012, www.theglobeandmail.com/news/british-columbia/bc-law-puts-huge-dent-in-metal-thefts/article6616499/
15. "Calgary Crime Stoppers Copper Theft" www.calgarycrimestoppers.org/programs/coppertheft/aboutcoppertheft