

May 19, 2021

Teck Brief to the House of Commons Standing Committee on Transport, Infrastructure and Communities on the Study of Targeted Infrastructure Investment: Copper in Infrastructure to Protect Human Health, Advance Social Outcomes and Improve the Lives of Canadians

As the House of Commons Standing Committee on Transport, Infrastructure and Communities advances the study of *Targeted Infrastructure Investment*, Teck is pleased to submit the following comments and recommendations for its consideration.

Proudly Canadian, Teck is a diversified natural resource company and global sustainability leader with business units focused on copper, steelmaking coal and zinc, as well as investments in energy assets. Headquartered in Vancouver, we own, or have interests in, 10 operations in Canada, the United States, Chile and Peru. In Canada, we own four steelmaking coal mines; the country's largest open-pit copper mine; an integrated zinc and lead smelting and refining complex; and interests in a port facility and an oil sands operation. Teck directly employs over 10,000 people around the world, including 8,000 people across Canada.

Operating in Canada for over 100 years, Teck understands the importance of targeted infrastructure investments. From conducting pre-feasibility work to operating and managing environmental performance to moving millions of tonnes of product across the country and then shipping it abroad, we know that reliable and modern infrastructure is needed at every stage of the mining cycle to ensure the competitiveness and sustainability of our industry. We also know the important role that our products play in developing modern infrastructure around the world.

Set against the backdrop of COVID-19, the main purpose of this brief is to highlight to the Committee that copper – recently listed by Natural Resources Canada as one of Canada's 31 critical minerals¹ – has unique antimicrobial properties and is proven to continuously kill up to 99.9 percent of bacteria and viruses when installed on high-touch surfaces. As a result, there is growing use of copper in infrastructure across the world to reduce the spread of infections in transit, commercial spaces, airports, and most importantly, healthcare facilities. Installing copper on surfaces to reduce transmission of infections is effective because it is a passive measure that requires no human cooperation on an individual basis – such as disinfecting and hand washing – and its action is continuous rather than episodic.

In keeping with the above, and in consideration of Canada's post-pandemic future, we encourage the Committee to consider the use of copper as a targeted health and safety investment within the scope of its study for advancing social outcomes and improving the lives of Canadians:

“That, pursuant to Standing Order 108(2), the committee undertake a study on the *ability of targeted infrastructure investment to influence social, economic and environmental outcomes and improve the lives of Canadians, and underserved vulnerable communities*; that the committee examine the socioeconomic profile of where infrastructure funding has flowed historically; and that the committee study the best practices in Canada and abroad for ensuring infrastructure investments reach communities most in need with a specific emphasis on rural Internet”.

¹ Natural Resources Canada: [“Critical Minerals”](#).

Federal Budget 2021 stated: “While finishing the fight [against COVID-19], Canada must also learn lessons and take steps so it can be prepared for future threats”.² For preparing for the future, we believe the Committee’s study is a timely opportunity to raise awareness of the health and safety benefits of copper and how its application on high-touch surfaces is an important targeted infrastructure investment for Canada.

In particular, Teck would recommend the following actions to Infrastructure Canada and other federal government departments:

- Actively integrate and advocate for the use of antimicrobial copper in high-traffic public infrastructure, including public buildings and public transportation infrastructure, and support the private sector and small business to install antimicrobial copper in their organizations in support of Canada’s economic reopening;
- Advocate for a nationwide strategy to implement antimicrobial copper in the highest risk healthcare settings, including retrofits to intensive care units, emergency departments and long-term care facilities; and
- Through Health Canada, work to reduce barriers to making new antimicrobial copper products commercially available by improving processes and timelines for new product registration.

Background

Copper & Health at Teck

Teck launched the Copper & Health program³ in 2017 after learning that copper can continuously eliminate up to 99.9 percent of harmful bacteria and viruses, twenty-four hours a day. We created the Copper & Health program to achieve two goals: to improve health outcomes for people and to raise awareness about the important role that metals play in our everyday lives. The program provides no material commercial benefit to Teck, as the volume of copper used for these applications is negligible. We are committed to making a difference by building partnerships, raising awareness and protecting the health and safety of our communities.

Reducing Healthcare-Acquired Infections

At the time our program launched, copper surfaces were installed in 300 healthcare facilities around the world, yet Canada lagged behind. Not a single Canadian hospital or healthcare facility was utilizing copper as an infection control measure. Yet, healthcare-acquired infections (HAIs) are a significant public health threat to Canadians. More than 220,000 patients in Canada will contract an infection while receiving care annually, and 12,000 of these patients will lose their lives as a result. HAIs cost the Canadian healthcare system more than \$1 billion annually, and most of these infections are preventable.

Supporting the fight against COVID-19

In 2020, world priorities shifted with the emergence of COVID-19 and the impacts of a global pandemic. Hospitals were pushed to their limits, and the world received a rude awakening on the need to focus on reducing the spread of infection both within healthcare and more generally in public spaces. Recent research has found that copper surfaces inactivate SARS-CoV-2 in as little as one minute. There are numerous opportunities for copper to play a role in community health, especially in high-touch and high-traffic locations such as transit, airports, entranceways and more. Working in tandem with proven public health actions such as hand-washing and physical distancing, copper infrastructure can help reduce the

² Finance Canada: “[Budget 2021: A Recovery Plan for Jobs, Growth, and Resilience – Chapter 1: Keeping Canadians Healthy and Safe](#)”, page 60.

³ Teck Resources Limited: “[Copper & Health](#)”.

spread of infection, reopen our communities, and improve the health and safety of Canadians. Our comments and recommendations below are set within this context.

Comments and Recommendations

Recommendation 1: Actively integrate and advocate for the use of antimicrobial copper in high-traffic public infrastructure, including public buildings and transportation infrastructure, and support the private sector and small business to install antimicrobial copper in their organizations in support of Canada's economic reopening

Copper is proven to continuously kill bacteria and viruses that cause infection, is safe for people and the environment, and is the only solid metal touch surface registered as an antimicrobial public health product by Health Canada. As such, we believe the application of copper in high-traffic infrastructure can contribute to Canada's long-term pandemic response and to future pandemic preparedness. If copper were to be installed on high-touch surfaces in busy public spaces, this could yield health-related benefits by preventing the spread of viruses and result in fewer people getting sick and needing medical attention at Canada's healthcare facilities. It will also make Canadians feel safer in busy public spaces as we shift to a post-pandemic world.

As an example of a copper initiative in high-traffic infrastructure, in November 2020, Teck launched a partnership with TransLink, Vancouver Coastal Health, the Coalition for Healthcare Acquired Infection Reduction ("CHAIR"), and the University of British Columbia to test antimicrobial copper coatings on high-touch transit surfaces on buses and subway cars in Vancouver. Based on sample-testing performed on transit and in a lab, the trial concluded that select copper products on transit are durable and kill up to 99.9 percent of all bacteria within one hour of the bacteria's contact with the surface.⁴

We believe that integrating the installation of copper as a requirement into new publicly funded infrastructure would improve the long-term well-being of Canadians. This initiative is currently advancing in the New York Legislature as Senate Bill S3905⁵ and Assembly Bill A998.⁶ If these bills pass and are signed into law, the State of New York would require the use of copper on surfaces in new publicly funded construction projects "in order to reduce the presence of disease-causing bacteria, viruses, and yeasts on commonly used touch surfaces and therefore protect public health."

Recommendation

We recommend that Infrastructure Canada work with federal government agencies as well as private sector partners to deploy copper on high-touch surfaces in public and healthcare settings to protect the health of Canadians now and for the future. Opportunities for copper installation to support this recommendation may include hospitals, long-term care facilities, transit buses and subways, shopping centres, convention centres, government buildings, and more. These actions may be supported by building antimicrobial copper as a requirement into updated standards and codes as well as allowing for federal funding programs in support of private sector and small business economic recovery to be directed at the installation of antimicrobial solutions including copper.

⁴ Teck Resources Limited: "[Copper kills 99.9% of bacteria on transit surfaces, study finds](#)", March 2021.

⁵ New York State Senate: "[Senate Bill S3905, Relates to requiring the use of solid antimicrobial copper alloy for touch surfaces in new construction](#)", February 2021.

⁶ New York State Senate: "[Assembly Bill A998, Relates to requiring the use of solid antimicrobial copper alloy for touch surfaces in new construction](#)", January 2021.

Recommendation 2: Advocate for a nationwide strategy to implement antimicrobial copper in the highest risk healthcare settings, including retrofits to intensive care units, emergency departments and long-term care facilities

Teck's Copper & Health program has successfully partnered with local hospitals in British Columbia and Ontario to support installation of copper-infused surfaces and equipment in emergency rooms, intensive care units, medical and surgical centres and other high-infection risk areas to make hospitals safer for patients, employees and visitors. This includes the first use of antimicrobial copper in a Canadian hospital when installed in the Vancouver General Hospital ICU in 2016, up to the recently completed Cross-Canada Durability Study. This study,⁷ published in 2020, showed copper products exhibited continuous, long-term efficacy in the four hospitals participating (Vancouver General Hospital, BC Children's and Women's, Toronto's Mount Sinai and North York General Hospital).

Antimicrobial copper's impact in reducing HAIs is proven, including most recently its inclusion in the 2020 Canadian Standard's Association published standard on Healthcare Cleaning & Disinfection, which included the recommendation of copper as a self-sanitizing surface. Teck is currently in dialogue with the Province of British Columbia on either piloting or expanding initiatives to upgrade public intensive care units, emergency departments and long-term care facilities at scale across the British Columbia healthcare system.

Recommendation

We recommend Infrastructure Canada work with federal and provincial government departments to reduce HAIs across Canada through a concerted program to retrofit antimicrobial copper into highest risk healthcare settings, including intensive care units, emergency departments and long-term care facilities. While it is recognized that retrofitting healthcare settings is within provincial jurisdiction, the federal government can encourage the prioritization of these activities through federal healthcare transfer programs, direct investments in healthcare innovation, and policy measures through Health Canada.

Recommendation 3: Through Health Canada, work to reduce barriers to making new antimicrobial copper products commercially available by improving processes and timelines for new product registration

Antimicrobial copper and copper products are regulated by Health Canada through the Pest Management Regulatory Agency (PMRA) under the *Pest Control Products Act*. Through this process, products are reviewed and registered with Health Canada in order to make claims with respect to antimicrobial properties and are also deemed safe for use by Canadians. This registration process significantly increases the marketability and commercial viability of these products.

Like Health Canada, the US Environmental Protection Agency (EPA) has approved the registration of hundreds of antimicrobial copper alloys. Copper is the first solid surface material to receive this type of EPA registration, which is supported by extensive antimicrobial efficacy testing. EPA registration is based on independent laboratory tests showing that copper, brass and bronze kill greater than 99.9 percent of bacteria within two hours of exposure. Additionally, in February 2021, the EPA approved certain copper alloys for residual use against coronavirus specifically. Currently, EPA registration of products is

⁷ AVS Science and Technology of Materials, Interfaces, and Processing: "[In Vitro evaluation of antimicrobial efficacy and durability of three copper surfaces used in healthcare](#)", February 2020.

significantly advanced compared to the registration of products by Health Canada, and Health Canada does not recognize EPA approvals as equivalent to their own.

Teck strongly supports the role of Health Canada and the PMRA in ensuring that antimicrobial copper products are effective in their claims and safe for use by Canadians. However, we also recognize the challenges that extended registration timelines and costs can bring to the development of new products at a time when infection control is of paramount public interest.

Recommendation

We recommend that Health Canada – potentially supported by other federal government departments like Infrastructure Canada – make continued efforts to expedite the evidence-based research and registration of proven antimicrobial copper products to make more product options commercially available to the Canadian public and institutions. This may include bringing closer alignment between approvals made by the EPA and those made by Health Canada through increased information sharing and equivalency opportunities between agencies.

Conclusion

Teck appreciates the opportunity to contribute to the Committee's study of *Targeted Infrastructure Investment*. If there are any questions or comments about Teck's brief or the use of antimicrobial copper in Canadian infrastructure, please contact Jay Schlosar, Director, Copper & Health, at Jay.Schlosar@teck.com.