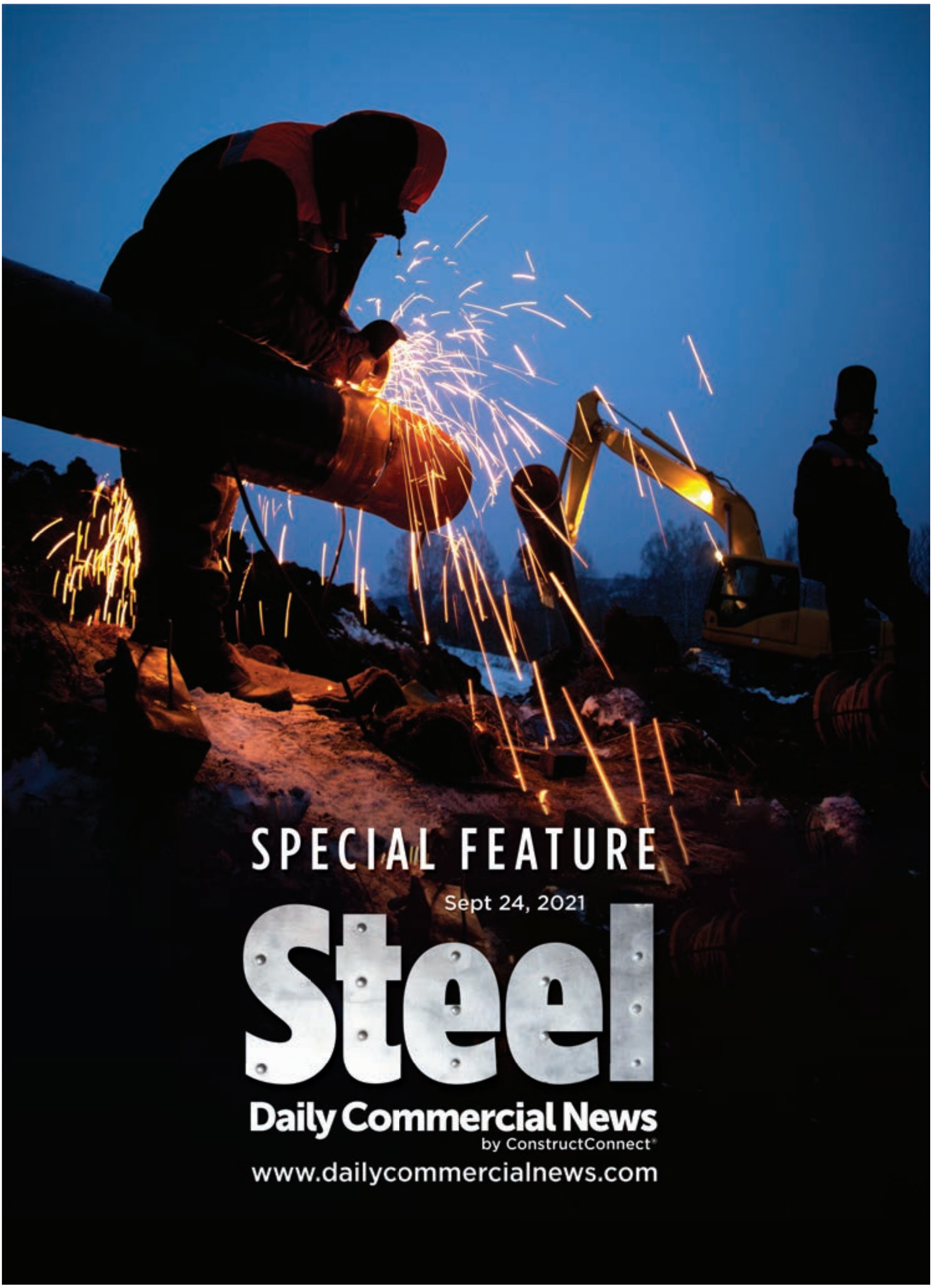


SPECIAL FEATURE

Sept 24, 2021

Steel

Daily Commercial News

by ConstructConnect®

www.dailycommercialnews.com

Steel the material of choice for cannabis facilities

GLOBAL STEEL BUILDINGS

Steel cannabis-growing facilities are ideal for cannabis growth, logistics and processing thanks to their lack of interior columns, allowing for more crop and equipment space.

GRANT CAMERON
CORRESPONDENT

Steel is currently used in everything from agricultural and self-storage buildings to garages, community halls and airplane hangers. Now, it's being touted as the material of choice for cannabis-growing facilities.

Jim Busch, founder and owner of Global Steel Buildings in Richmond Hill, Ont., which built a large cannabis-growing facility for a customer in Smiths Falls, Ont., says the clear-span design — and the fact there are no interior columns to get in the way — makes them more attractive to producers.

Grow-ops often have rows of hundreds of plants and an open design is important because it permits maximum use of floor space and makes it easier to use common sprinkler and heat systems he notes.

"A metal cannabis-growing facility is ideal for cannabis growing, logistics and processing," explains Busch.

"With no interior columns, our space will accommodate crops and the systems required for daily operation. Our metal buildings are built to be durable and secure. In the highly regulated field of cannabis-growing operations, high-level security is an important consideration. Global Steel Buildings Canada's metal buildings are designed to be compliant with government requirements for cannabis cultivation."

Indeed, the expansive, open interior of the structures make them ideal for using artificial lighting, dehumidification and irrigation control systems required for a commercial, multi-season cannabis-growing operation. The buildings also create a weather-resistant cultivation atmosphere that accommodates the necessary ventilation and air-conditioning important to a cannabis grow-op.

"Unlike other building systems, pre-engineered steel buildings are self-supporting," says Busch. "Straight-wall steel buildings, using a clear-span design, do not require interior walls or columns. Adding floor space for future expansion is economical. Additional space can be added at the end wall by adjoining an end-wall expansion steel building utilizing the same design. The addition length is virtually unlimited."

Global Steel got involved in the Smiths Falls project when approached by the cannabis company. Busch had partnered with the company on several earlier projects.

"The objective was to replace an aging and inefficient structure so that the grower can improve product growth and output," says Busch. "We provided a pre-engineered steel building, 50 feet wide by 120 feet long by 18 feet high."

Once the contract was signed, the team at Global Buildings went to work.

Because it was a clear-span, rigid-frame design, the structure required an engineered foundation. Global engaged a licensed engineer to design the foundation to Ontario Building Code and National Building Code requirements, taking into account local soil conditions and making sure the base could support the weight of the building and abide by all government-specified standards for wind, snow and seismic forces.

The building itself was erected in just two weeks but the interior finishing work to create an ideal growing environment took another three months.

Busch says that such buildings will last a lifetime. Global is involved in and manages all stages of the process, from quoting, designing, engineering and manufacturing.

Canadian Engineer Stamped Drawings are always provided as a part of your steel building package, he notes.

In order to further expand its growing space, the cannabis-growing company also decided to add more processing, product formulation and logistics facilities. The expansion tripled the company's fulfillment capacity.

According to Busch, pre-engineered steel buildings have come a long way since they were introduced in the 1940s because the material is so easy to engineer, fabricate and erect.

With Canada having made the recreational use of cannabis legal, and many U.S. states jumping on the bandwagon as well, construction of facilities for cannabis grow-ops has been steadily rising. A key requirement for businesses in the emerging market is getting facilities to market quickly to keep up with growth.

The pre-engineered building process, which allows a structure to be customized to suit a customer's needs, enables companies to get their structures built quicker than traditional brick and mortar construction methods.

When better physical security, climate-control, and fire resistance are added to the mix, steel becomes an ideal choice.

Busch says that steel buildings are also able to withstand dramatic Canadian weather changes and winter.

The buildings are especially attractive because they can easily and quickly be customized to customer specifications, he says.

"Metal buildings provide a quick return on investment as they can be erected quicker than structures built with traditional materials like wood and concrete block. These buildings are cost-efficient and offer excellent value for long-term performance."

But there are environmental considerations as well, according to Busch.

"By choosing a pre-engineered steel building for your growing facility, you are choosing sustainability. Steel construction produces less waste than any other building material."

The steel is recyclable and the pre-engineered building system is shipped to the jobsite with no cutting or fabrication required.

Global is planning construction of more cannabis-growing facilities in future.

"We have a number of projects in the planning stages that surpass the size and scope of our Smiths Falls project," says Busch.

Economic Snapshot

Supply chain bottlenecks raise risk of higher interest rates

John Clinkard

With many of the negative economic impacts of COVID-19 finally receding, surging demand has put global supply chains under extreme stress. Rising demand for commodities such as iron ore, metallurgical coal, corn, and wheat has caused the Baltic Dry Index, which tracks international ocean freight rates, to jump from 540 in early 2020 to a ten-year high of 4,000 in the middle of this year. While this climb is due in large part to China's expanding appetite for raw materials, it has been augmented by a vaccine-fuelled increase in global growth.

Strong global post-pandemic demand + shortage of ships = record freight costs

Driven by strong demand for manufactured goods, most of which are sourced in Asia, the Freightos' Baltic Index, the leading international freight rate index (i.e., it tracks the average price to ship a standard 40-foot container) has risen from $1,461 at the beginning of 2020 to $11,109 in September of this year. An acute shortage of ocean transportation capacity is restricting U.S. and Canadian import flows from Asia. As a result, the Freightos' China/East Asia to North America sub-index hit an off-the-charts $22,173 in early September, more than twice its print at the beginning of July of this year. The most recent surge in the pricing of containers comes on the back of the Suez Canal blockage in March which tied up approximately 321 ships for 14 days.

Due to supply-chain bottlenecks at ports in Los Angeles and Long Beach, that together handle approximately one-third of U.S. imports, a record 55 container ships are at anchor waiting to be unloaded. According to the National Retail Federation, "the bulk of the upturn in U.S. inflation has been driven by supply chain bottlenecks and low levels of inventories."

In Canada, the Port of Vancouver is also experiencing longer than usual line-ups of ships waiting to be unloaded. According to Omnitrans customs brokers, vessel wait times have increased to 5-7 days with frequent delays of 5 days to two weeks to load containers onto rail. In line with U.S. west coast ports, the cost to ship a 40-foot container from China to Vancouver has risen to record levels over the past 12 months.

Consumer price inflation in Canada and the U.S. hit multi-year highs in mid-2021

On both sides of the border, the impact of supply chain bottlenecks is spreading to consumers. In the U.S., the consumer price index has accelerated from +1.3% y/y to +5.3% y/y over the past 12 months. While a portion of this increase is the result of a post-pandemic surge in energy prices, a recent *Wall Street Journal article* noted that "leaders of some of the busiest U.S. ports expect congestion snarling maritime gateways to continue deep into next year". Given the acceleration in the consumer price index and the prospect of persisting supply bottlenecks, it is not surprising that the *Federal Reserve of New York's Survey of Consumer Expectations* found that short and long-term inflation expectations hit series highs of +5.2% y/y and +4.2% y/y respectively in August.

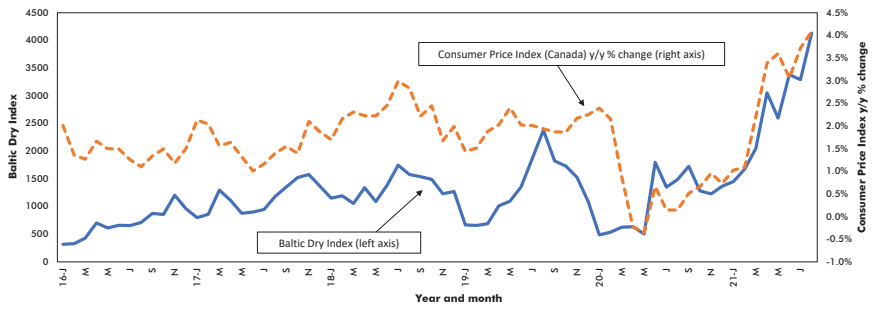
In Canada, the combination of supply chain bottlenecks and higher energy costs pushed import prices up by +3.8% y/y in July from -0.3% y/y 12 months prior. At the consumer level, Canada's all-items Consumer Price Index has accelerated from -0.4% y/y in May of 2020 to an 18-year high of +4.1% y/y this August.

Given the strong linkages between economic activity in Canada and the United States, the persisting effect of global supply chain bottlenecks noted above will probably maintain upward pressure on consumer prices in Canada well into 2022. As in the U.S., this prospect is reinforced by two recent forward-looking surveys of inflation expectations. First, the August *Business Barometer* published by the Canadian Federation of Independent Business reported average pricing plans hit a 12-year high of +3.8% y/y, up from +2.1% at the beginning of this year. Second, according to the most recent (Q2/2021) Bank of Canada *Business Outlook Survey*, the percentage of respondents expecting inflation over the next two years to average above +2.0% hit a 16-year high of 86%.

As noted in Snapshot #14 titled *High Inflation Raises Risk of Higher Interest Rates,* it is still quite possible the global commodity price surge will ease, thereby taking pressure off consumer prices and reducing the risk that central banks will be forced to tighten in the second half of 2022. However, the above-noted prospect of persisting global supply chain bottlenecks reinforces the view that central banks will be forced to dampen inflationary expectations by tightening monetary policy sooner than they currently plan.

John Clinkard has over 35 years' experience as an economist in international, national and regional research and analysis with leading financial institutions and media outlets in Canada.

Baltic Dry Index vs Y/Y% change in the Consumer Price Index (Canada)



Data Source: Statistics Canada, Bloomberg/Chart: ConstructConnect — CanaData.

constructconnect

Vol. 19, Issue 18

Rebar dumping in Canada decision results in import duties

SHUTTERSTOCK

GRANT CAMERON
CORRESPONDENT

A finding by the Canadian International Trade Tribunal (CITT) that concrete reinforcing bar was dumped into Canada from seven other countries, causing injury to its steel industry, sends a clear signal to those trying to undermine the regulations, states the Canadian Steel Producers Association (CSPA).

"Indeed, we're very pleased with the ruling," says CSPA president and CEO Catherine Cobden. "The ruling does a few things for us. One is that it does establish there was dumping and injury from seven countries and when that happens duties are placed and that prevents further dumping. That's very important.

"But there's another aspect to it, too. When these rulings take place it sends a message, I believe, and that message is that Canada does stand up for fair trade practices and will penalize countries that do not participate in fair trade."

The CITT investigated allegations the countries were illegally dumping concrete reinforcing bar into the Canadian market, in contravention of section 42 of the Special Import Measures Act (SIMA). The countries named in the investigation included Algeria, Egypt, Indonesia, Italy, Malaysia, Singapore, and Vietnam.

The CITT specifically looked at whether hot-rolled deformed steel concrete reinforcing bar in straight lengths or coils, commonly referred to as rebar, was being dumped by the countries. The rebar investigated was in various diameters up to and including 56.4 millimetres, in various finishes, excluding plain round bar and fabricated rebar products.

The CITT also probed "whether the rebar dumping caused injury or retardation or is threatening to cause injury" to the Canadian market.

> "We must continue to evolve our trade-remedy practices in Canada to keep pace with what those unfair traders do,"
>
> Catherine Cobden
> Canadian Steel Producers Association

The CITT said in its ruling that it took into account that the president of the Canada Border Services Agency (CBSA) previously issued a determination in May that the reinforcing bar had been dumped, and therefore pursuant to subsection 43(1) of SIMA, the dumping caused injury to the domestic industry.

The CBSA began its probe in September 2020 after complaints were filed by AltaSteel Inc. of Edmonton, Alta., ArcelorMittal Long Products Canada of Quebec, and Gerdau Ameristeel Corporation of Whitby, Ont.

As a result of the decision, duties will now be imposed on imports of reinforcing bar from the seven countries.

Cobden says the ruling shows other countries around the world that Canada will not stand for rebar dumping.

"You need the countries that were dumping to face the duties," she says.

Another aspect to the ruling, though, is the message it conveys to other countries that are still trying to dump concrete reinforcing bar into Canada, as well as those that are trying to find creative ways around the ban.

Codben says there is a glut of steel around the world and many other countries are trying to find workarounds.

"What I mean by that is there is simply too much steel being produced in the world that's trying to get into our borders."

The global over-capacity of steel is driving countries to find innovative ways to dump product, says Cobden.

The Organization for Economic Co-operation and Development indicates there is presently 648 million tonnes of excess steel being produced around the world, or 42 times the entire Canadian production, and countries with an oversupply are still trying to find places to sell their product.

"In this particular case, there were seven countries but there's many others," says Cobden. "I could give you many other country examples like China, Taipei, Turkey, Spain, Portugal, Russia, I mean the list goes on and on."

The problem with dumping is that it erodes the domestic market and hurts the industry, as it creates an uneven playing field, she says.

"You're dumping, you're selling below cost, you're taking market share away from the domestic industry because you're undermining the pricing environment.

"We have a very good track record in the domestic steel industry on wages, on environmental aspects and human rights, in addition to the actual job creation we do and not so for some of the countries that are doing this. So, there's a whole number of levels in which this impacts the industry and causes problems not just for the industry but for the country."

The CSPA believes the investigation by the CITT was very thorough and, while it took about 10 months for the ruling to come down, Cobden is still glad it's on the books as it will ensure duties are imposed on imports from the offending countries.

"Some rulings take six months, some take longer. Under COVID there's been a lot of extensions so that's been problematic. But in general, I think you can appreciate from the domestic producers industry, every month that goes by causes more pain so we want these procedures to be as time-efficient as possible."

While there is a ruling on the books, the war against illegal dumping is not yet over.

"Unfair traders are very creative and we must remain ever-vigilant," says Cobden. "So, yes this is great, it puts duties in place, it sends market signals that we stand up for fair trade, but I also want to emphasize that we must continue to evolve our trade-remedy practices in Canada to keep pace with what those unfair traders do."

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OSSFA: A Trade Association for Ontario Structural Steel Fabricators

The Ontario Structural Steel Fabricators Association (OSSFA) represents 40 fabricator and supplier members, employing over 15,000 people across Ontario. OSSFA has been operating for 4 years, working to help represent the needs of today's structural steel fabricators in Ontario.

OSSFA helps inform and educate our industry and industry partners and creates a better approach to working within the structural steel marketplace. First and foremost, our members want to meet their clients' expectations. That begins with clearly understanding budgets and project scheduling. With our best practices, as defined in our **OSSFA Form 11.3** (this document can be downloaded from our website), our membership has laid out the specific steps we need to present to the entire project team to work more effectively to achieve a positive outcome.

OSSFA members are ready to tackle your next Section 5 structural steel project. Today, our membership has invested in the latest CNC fabrication, plasma, laser, water cutting and robotic technologies as well as advancements in 3-D steel detailing and engineering programs to service our clients. Please see the list of our members across Ontario below.

We recently shared the current state of steel material availability and price increases with our friends at ACEC Ontario. We are all receiving more calls from engineers asking for help and information on structural steel. We have told them what products we can and can't receive from the mills (that sometimes changes weekly), and to allow flexible options in designing roof and floor systems to get the project built quicker. Mills are telling some suppliers to send them a blank purchase order: they will put you in the queue and provide a final delivery date and final cost later. How can our members perform within these scenarios? The fact is they can't. Today's market presents a serious challenge, but our members (suppliers and fabricators) are doing their very best to find solutions, source materials, fabricate to challenging schedules and get the steel to site. It has not been easy, but by working together everything is possible.

To see the full OSSFA Sponsored Content article on the Daily Commercial News website, please visit: https://bit.ly/3Ck4isN

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List of Our OSSFA Members: (s) designates Affiliate (Supplier) members, all other companies are Structural Steel Fabricator members.

ACL STEEL LTD.
AKAL STEEL (2005) INC.
BENSON STEEL LIMITED
BETTER IRONWORKS LTD.
BRAMALEA STEEL WORKS LTD.
CANAM BUILDINGS (s)
COOKSVILLE STEEL
CRAWFORD METAL (s)
ETOBICOKE IRONWORKS
FALCO STEEL FABRICATORS
IBL STRUCTURAL STEEL LTD.
JCT METALS INC.
KIMCO STEEL SALES LTD. (s)
KUBES STEEL (s)
LAMBTON METAL SERVICE
LINESTEEL (1973)
LORVIN STEEL
MAPLE INDUSTRIES
MIRAGE STEEL
M & G STEEL LTD.
NORAK STEEL
PITTSBURGH STEEL GROUP
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REFAC INDUSTRIAL CONTRACTORS
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TREVCO STEEL
TRIAD METALS (s)
UNITED STEEL FABRICATORS
VICTORIA STEEL
VULCRAFT CANADA (s)
WALTERS INC.

Steel integral to new St. Lawrence Market North building

DON PROCTER
CORRESPONDENT

Two five-storey structural steel barrel vaults will form the architectural signature of the new St. Lawrence Market North building in downtown Toronto.

The 200,000 square foot steel building — which will feature a five-storey high central atrium, skylights and an integrated green roof — is a lump sum project management contract by Buttcon Ltd. in joint venture with the Atlas Corporation.

Buttcon's Jerry Rynda says like many major construction jobs in the city's core, the big steel project has required an extensive logistics and sequencing program to complete the work efficiently and on time.

Brad Peddle, senior superintendent, Atlas Corp., explains that the steel structure is being erected in five sequences from south to north, with each sequence being about 18 by 42 metres.

He says because of the limited laydown space, the construction team has aimed for just-in-time deliveries of the large steel elements. Each truck is unloaded onto the slab and erected within a day or two, depending on the size of the members. Some loads have only four steel columns; others have 200 smaller pieces.

Rynda points out that through the pandemic steel prices have increased and procurement lead times have stretched.

"To keep the budget right and maintain schedules our team has been extensively managing the process of delivery and procurement."

One of the construction challenges is the precise installation of the prefabricated barrel vault structures, says Rynda, noting that if the foundation or other elements of the structure are "out" slightly, the steel might not line up and bolt together.

Peddle points out that steel nodes are cast into the top of architectural high-strength (60 MPa) columns from the ground to second level; the second half of the steel node is welded to the bottom of the steel columns, extending from level two to the fifth level. The two pieces of node are bolted together.

Some of the steel elements are box columns, but most are I-beams or HSS, Peddle says, adding nuts are welded to the inside with access doors to complete the connections. "There is little tolerance for error."

ES Fox Ltd. is erecting the steel. Steel 2000 Inc., based in Sudbury, is fabricating most of the steel, which is transported overnight to avoid traffic congestion. The trucks have been staged on the street and unloaded by a Terex Peiner SK 315 tower crane, says Peddle.

He says the architecturally exposed structural steel (AESS) is erected using kevlar slings to prevent damage to the steel finish. To meet fire code, the steel will have a protective intumescent coating that expands many times its size in a fire to protect the steel.

There are about 2,000 structural steel pieces for the project weighing 3.1 million pounds.

Rynda says an extensive safety program was set in place from day one not only for the workers but the community around the site largely because of the size of the steel members being moved about.

The pandemic has caused disruptions to the project — particularly at manufacturing where mandated health and safety protocols have slowed production. While delivery delays might be past at the St. Lawrence project, they still are a factor on "long lead" steel items on other projects, says Rynda.

"There are some very long lead times on open web joist structures, rebar…it's all being affected."

Budgets tabulated two years ago are often outdated because of steel price hikes throughout the pandemic, he points out. "There is such an increase in steel pricing that they have to go back and rethink projects. You have to manage a project on a daily basis."

St. Lawrence Market North is an architectural design by the award-winning British-based firm Rogers Stirk Harbour + Partners in conjunction with Adamson Associates Architects of Toronto.

The building will house a farmers' market, antique market, Toronto Court Services courtrooms and administrative offices on the four upper floors plus a 250-space underground parking garage.

DON PROCTER

Extensive logistics and sequencing is required on the St. Lawrence Market North project. The steel structure is being erected in five sequences from south to north, with each sequence being about 18 by 42 metres.

DON PROCTER

Two five-storey structural steel barrel vaults will form the architectural signature of the new St. Lawrence Market North building in downtown Toronto.

Steel giants AMD, Algoma and feds invest heavily in cleaner production

GRANT CAMERON
CORRESPONDENT

The odds of Canada's steel industry getting to net zero emissions by 2050 improved dramatically thanks to the federal government and steel giants ArcelorMittal Dofasco (AMD) and Algoma announcing billions of dollars of investment in carbon dioxide (CO2) cutting projects during the production process.

"These investments not only support our great jobs, but also the Canadian economy and our efforts on climate change as a country," says Catherine Cobden, president and CEO of the Canadian Steel Producers Association (CSPA), which represents the primary steel and the pipe and tube industry across the country.

"The estimate is that it will reduce the emissions in total by six million tonnes annually — equivalent to almost two million cars being taken off the road."

> "The government understands the steel industry can and does have an important role to play in the future of our low-carbon economy,"
>
> Catherine Cobden
> Canadian Steel Producers Association

Together, the anticipated reduction by the two companies will represent almost one per cent of Canada's annual CO2 emissions.

At an AMD plant in Hamilton, a federal investment of up to $400 million, and an investment of $1.35 billion by the company, will lead to construction of a new direct reduced iron (DRI) furnace, along with an electric arc furnace (EAF) which will replace the company's coke ovens, blast furnaces and basic oxygen furnace.

The DRI furnace will use natural gas to convert iron ore to liquid iron. The natural gas furnace will reduce GHG emissions significantly. The EAF will use low-carbon electricity to further process the liquid iron into steel using scrap steel.

The DRI furnace will also be built so it can be run on hydrogen once it becomes available sometime after start-up. Hydrogen would remove oxides from ore with zero CO2 emissions if it is produced with carbon-free electricity.

The new furnaces are scheduled to be operational by 2028 and will lead to a reduction of approximately three million tonnes of CO2 from the AMD plant.

Algoma, meanwhile, announced construction of two EAFs that will rely on scrap steel as a feedstock, phasing out its coke ovens and blast furnaces which emit more CO2. The electricity-based process is expected to cut greenhouse gas emissions by more than three million metric tonnes per year by 2030.

A federal investment of up to $420 million is coming from the Net Zero Accelerator Initiative (NZAI). Total cost of the project is $703 million. As many as 500 jobs will be created as a result of the project.

The changes will enable Algoma to use low-carbon electricity and dramatically reduce CO2 emissions. The project is expected to take 30 months.

Cobden says the NZAI is a federal program that is available for really dramatic and significant CO2 reductions so it is encouraging to see the two Ontario steel firms factor into the program.

"There are two of them that have made it through that system from the steel industry," she says.

The initiatives are important, she notes, because it shows that government is a supportive and willing partner in very substantial projects aimed at reducing emissions in the steel industry.

"I also believe it demonstrates that the government understands the steel industry can and does have an important role to play in the future of our low-carbon economy. So, I think that is quite critical."

Canadian companies are already producing some of the "greenest" steel in the world and the investments will further that cause, Cobden says.

Indeed, Global Efficiency Intelligence, an energy and environmental consulting and market research firm in the U.S., did an international benchmarking study and ranked Canada's steel production facilities as first and second in categories related to CO2 emissions, well ahead of other key steel-producing nations.

The CSPA has been working to get steel producers to take action to curb CO2 emissions. In March 2020, the association released a Climate Call to Action that outlines the key conditions needed to ensure the long-term sustainability of the domestic steel industry.

> "This is going to take effort to promote green steel, this is going to take an effort to look at procuring green steel, protecting our borders even more from dumping,"
>
> Catherine Cobden
> Canadian Steel Producers Association

Part of the call to action is demonstrating to governments — and Canadians — that the CSPA is a partner in the climate-change fight. Another is getting financial support for transformational projects for the industry.

"There is no one-size-fits-all here," explains Cobden. "There is a broad array, frankly, of policies that probably all large emitters are going to need to achieve this objective and so that's what our plan does. It gives policy-makers those direct recommendations on what's going to help us get to net zero."

With funding now in place for projects at the two large steel producers, the companies and industry must get down to doing the "long-haul work," she says.

"This is going to take research, this is going to take effort to promote green steel, this is going to take an effort to look at procuring green steel, protecting our borders even more from dumping of steel that's not green."

As technology evolves, there will also be new ways found to produce greener steel, including what role hydrogen might play in the production of steel.

"We're very excited about that question, but it's not going to be a question that's going to be answered in the next 10 years," says Cobden. "We see it actually requiring 20, 30 years to get there."