



COLD CHAIN CROSSINGS

Operators in Canada, Mexico and the United States navigate the moment.



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2021 was a year of many challenges but also of great success. As we reflect on the year, we are pleased to report membership has continued to grow along with the association's available resources, networking events and business development opportunities. Excitingly, we were able to host and attend multiple meetings and events and reunite as an industry face-to-face.

Our 2022 events calendar is published and appears on page 46. While this year did not start off quite as planned with the postponement of the WFLO Institute East and West, we have new dates in June for both events. And we confidently predict our GCCA European Cold Chain Conference in Rotterdam, Netherlands, will be held as scheduled in March.

For members with operations in the United States, your association successfully increased its presence and recognition in Washington, D.C. this past year. We did so while navigating the ever-changing regulations coming out of the administration.

Doubtless, the remainder of 2022 will present more challenges for our fellow members, but those will be accompanied by increasing opportunities to grow our essential industry. Both of us are honored to serve as chairmen during a period where the success of our industry is more critical than ever to securing the world's food supply through uncertain times.

We are thankful for our fellow board members, the GCCA staff and, of course, all our members worldwide for their support and commitment to this industry. 🌐



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The **World Food Logistics Organization (WFLO)**, which delivers education and research to the industry and empowers economic development by strengthening the global cold chain.

The **International Refrigerated Transportation Association (IRTA)**, which cultivates, fosters and develops commercial and trade relations between all those engaged in the transportation and logistics of temperature-controlled commodities.

The **Controlled Environment Building Association (CEBA)** represents the design and construction industry specializing in temperature-controlled facilities that prioritize product safety best practices. We are the source for best practices of building and maintaining the thermal envelope.

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BUSY REGULATORY OUTLOOK FOR 2022

GCCA expects heavy rulemaking activity to come.

By Lowell Randel

As the Biden Administration enters its second year, agencies such as the Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA) and the Food and Drug Administration (FDA) are preparing to take significant regulatory actions that will impact the cold chain.

On December 15, 2021, the Biden administration published its regulatory agenda, which outlines the plans of federal agencies across the government. The agenda includes proposals that will result in changes to several regulations impacting cold chain businesses. As a result, GCCA expects heavy rulemaking activity in 2022.

Following are descriptions of some of the most significant regulations scheduled for action in 2022.

EPA Risk Management Program – “Accidental Release Prevention Requirements: Risk Management Program Under the Clean Air Act; Retrospection”

The EPA Risk Management Program (RMP) has been the subject of several rulemakings over the last five years. At the end of the Obama administration, the EPA published a final RMP rule known as the “2017 Amendments” that added compliance requirements for regulated facilities in areas such as emer-

gency response planning, third-party audits and information sharing.

The Trump administration executed a rulemaking to reconsider these amendments, resulting in a rule that rescinded many of the 2017 Amendments.

The Biden administration is now considering further revisions to the RMP program.

On January 20, 2021, Executive Order 13990, Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis (EO 13990), directed federal agencies to review existing regulations and take action to address priorities established by the new administration including bolstering resilience to the impact of climate change and prioritizing environmental justice.

The EPA is considering developing a regulatory action to revise the current RMP regulations. The proposed rule would address the administration’s priorities and focus on regulatory revisions completed since 2017.

The proposed rule would also expect to contain a number of proposed modifications to

the RMP regulations based in part on stakeholder feedback received from RMP public listening sessions held on June 16 and July 8, 2021. GCCA participated in these listening sessions and suggested the recently finalized reconsideration rule took appropriate action and that no further rulemaking is needed.

The EPA currently plans to prepare a notice of proposed rulemaking that would provide the public an opportunity to comment on the proposal, and any regulatory alternatives that may be identified within the preamble to the proposed rulemaking. According to the regulatory agenda, the EPA is expected to issue a Notice of Proposed Rulemaking in September 2022 and complete a Final Rule by August 2023.

GCCA has actively participated in previous RMP rulemakings and will continue to engage with the EPA and like-minded partners to communicate the industry’s positions on regulatory proposals and their potential impact on regulated entities.

EPA HFC Phase Down – “Restrictions on Certain Uses of Hydrofluorocarbons Under Subsection (i) of the American Innovation and Manufacturing Act”

The American Innovation and Manufacturing (AIM) Act, enacted on December 27, 2020, provides the EPA new authorities to address hydrofluorocarbons (HFCs) in three main areas: phasing down the production and consumption of listed HFCs, maximizing reclamation and



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minimizing releases of these HFCs and their substitutes in equipment (e.g., refrigerators and air conditioners), and facilitating the transition to next-generation technologies by restricting the use of HFCs in particular sectors or subsectors.

Since enactment, the EPA has moved to implement the statute, including rulemaking in Fall 2021 that set the HFC baseline and schedule for phasing down consumption. The next step of the process will be establishing rules for various sectors and uses of HFCs. The regulatory agenda states that EPA is considering a rule that will restrict fully, partially, or on a graduated schedule, the use of HFCs in sectors or subsectors including the refrigeration, air conditioning, aerosol and foam sectors. The rule will also establish recordkeeping and reporting requirements and address other related elements of the AIM Act.

The EPA is planning to publish a Notice of Proposed Rulemaking in June 2022. A Final Rule is currently scheduled for April 2023. This regulation has the potential to impact industrial refrigeration systems using HFCs. GCCA will continue to update members as the rulemaking process moves forward.

OSHA “Process Safety Management and Prevention of Major Chemical Accidents”

The Obama administration initiated a rulemaking to “modernize” the OSHA Process Safety Management (PSM) regulation in

response to the explosion in West, Texas. OSHA went through a Request for Information and convened a panel under the Small Business Regulatory Enforcement Fairness Act to review potential impacts to regulated small businesses.

The Trump Administration placed the rulemaking on the “long-term agenda” effectively pausing any further considerations.

The Biden administration has since moved the rulemaking into the “pre-rule” stage and is planning to conduct a stakeholder meeting in 2022.

After considering the input from the stakeholder meeting, OSHA is expected to develop a Notice of Proposed Rulemaking. OSHA rulemakings historically have taken multiple years to complete.

GCCA has actively participated in this rulemaking from the beginning including having two GCCA members participate on the SBREFA panel. GCCA will continue to engage with OSHA throughout the process.

FDA FSMA Food Traceability Rule – “Requirements For Additional Traceability Records For Certain Foods”

The FDA Food Traceability rule would be a part of the food safety framework established through the Food Safety Modernization Act (FSMA). It represents the first new major regulation under FSMA in several years.

According to the FDA, the regulation would help the agency rapidly and effectively identify

recipients of higher risk foods to prevent or mitigate foodborne illness outbreaks and address credible threats of serious adverse health consequences or death.

At the core of the proposal is a requirement for those who manufacture, process, pack or hold foods on the Food Traceability List (FTL) to establish and maintain records containing Key Data Elements (KDEs) associated with different Critical Tracking Events (CTEs).

FDA published a Proposed Rule in September 2020. GCCA submitted formal comments on the proposal and has been working with the agency and industry partners on the issue. FDA is subject to a judicial consent decree that requires FDA to submit a final rule to the Office of the Federal Register by November 7, 2022. It is expected that FDA will complete this rulemaking by the deadline.

The Biden regulatory agenda shows aggressive plans to advance a number of regulatory initiatives that could impact businesses across the cold chain in 2022. GCCA has been, and will continue to be, closely engaged with the agencies to promote the interests of the cold chain as each of these rulemakings moves forward. 🌐

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By Alexandra Walsh



COLD CHAIN CROSSINGS

Operators in Canada, Mexico and the United States navigate the moment.

The ripple effect around the globe caused by supply chain disruptions at border ports along the U.S. Pacific Coast was documented in the January-February COLD FACTS cover article. But how has the cold chain industry at the borders to the north and south navigated bottlenecks, vaccine mandates, inventory fluctuations and driver and other labor shortages?

COVER STORY



Although it is far from business as usual, meaning pre-pandemic, cold chain companies at the borders in Canada, the United States and Mexico are taking advantage of factors beyond their control to reinvent processes and find new opportunities to add value for their customers.

The Northern Border

To the north in Vancouver, Canada, Tim Ludwig, President of Bradner Cold Storage, believes the overarching issue is that the supply chain is not nearly as consistent as it used to be, whether overseas, cross border or even domestic. “Historically, most of the supply chain took a set it and forget it approach, but today it’s all about supply chain resiliency and customers and more than one way to handle challenges.”

Ludwig says speed to market has always been a priority, but as port reliability becomes increasingly important, a consistent route is more valuable than a faster route. “The total lack of control over what goes on at port and the lack of predictability with overseas containers makes our customers take a fresh look at sourcing product from the southern United States and Mexico.”

Pascal Truyen, Vice President of Sales and Marketing at VersaCold, says they had hoped all the congestion at the California ports would create opportunities for U.S. producers to use the cold storage company as exporters to ship out of Vancouver. “Unfortunately, the bottleneck crept up the coast and eventually Vancouver was backed up also and ports further north lack the necessary infrastructure.”

Redefining Inventory

Ludwig notes fresh produce from Asia historically followed a predictable arrival pattern, but now container shortages and port delays can result in half of the product being discarded in some cases. “As the yield on the product starts to fall, some of those products may need to be reevaluated,” Ludwig says. He points out that even though the company’s natural choice is the local Port of Vancouver, they are exploring other ports for other products or multiple ports to minimize risk.

Nicholas Pedneault, President and CEO of Congebec, says the borders are as fluid as they can be given the current circumstances. “Supply chains were built for constant fluid motion to fulfill a just-in-time demand and economy, and that’s a model that cannot be sustained any further,” he says. “Nearshoring and looking at increased holdings as well as rethinking just-in-time manufacturing are all areas that are being explored in order to be less reliant on export and import activities and to bolster a fragmented supply chain.”

“Increasingly, different channels are utilized for direct-to-consumer delivery, and it is now a permanent style of distribution and one of many supply chain issues disrupting inventory strategies,” Ludwig adds. “We’re holding just-in-case stock and have a reduction in volume capacity despite all the challenges we have in this low vacancy market.”

Driver Shortages and Vaccinations

The warehouse labor and driver markets remain a challenge, admits Truyen. And while they strongly encourage employees to get vaccinated, they believe a mandatory vaccination policy would exacerbate the labor shortages and potentially impact operations.

From Truyen’s perspective, the main problem is the dearth of drivers. Since January 15, 2022, a Canadian regulation has been in place mandating Canadian drivers reentering the country from the United States have to quarantine for 14 days unless double vaccinated.

“With drivers shifting from cross-border to domestic routes, we have seen an uptick in driver availability for us as we only operate domestically. But ultimately, further capacity shortages linger if the vaccine mandates for truck drivers will go into effect domestically, and we will have to be prepared,” concedes Truyen. “The reduced capacity for cross-border freight will impact us indirectly if prices increase due to more demand than capacity, and if our customers are delayed in shipping and have to ship directly to the end user without warehousing.”

Pedneault’s perspective is driver shortages are a result of the increased number of retiring drivers, the hiring of unqualified drivers and subsequently an increased number of accidents and delays in obtaining parts to remain operational.

And while Pedneault believes it is too early to see the long-term impact of the new vaccine mandate for truck drivers reentering the country, he notes there is a projected decrease of 270 million pounds of product crossing the border daily and a 12% to 15% decrease in available capacity. “At the moment, we are experiencing one to two-day delays at border control, however most Canadian drivers are vaccinated and that helps mitigate the consequences.”

“The issue is trucks on the road are the weakest link in the supply chain as product moves from point A to point B,” Ludwig says. “We are likely to see a continued increase in rail, but the challenge is the interconnections – rail doesn’t end at the consumer’s door and typically involves drayage and port-to-rail connections.”

The Southern Border

“Today we observe a more interconnected, cross-border cold chain than ever before,” observes Mario Coronado, Chief Executive Officer at Qualianz in Mexico. “We increasingly serve the import/export border trade needs of our clients, particularly in recent months.”

“In the beginning of the pandemic, all our facilities benefitted from an increase in volume causing inventory to expand, and this helped us a lot,” recalls Guillermo Castro, Regional Director at Frialsa Frigorificos in Mexico. “And then came the first impact, but it wasn’t at the border, it was the collapse of food service and all our customers in that market suffered.”

On the U.S. side of the southern border, Mario Rodriguez, Manager, Cold Terminal of Laredo, Texas, notes there are some aspects of cold chain services at the border that are different than anywhere else in the country. “You have to know the culture of doing business at the border as there are a lot of moving parts.”

Rodriguez says for U.S. cold storage companies at the border to service packing houses that are exporting protein to the United States and Canada, they need to comply with specific United States Department of Agriculture (USDA) entry requirements to be able to process these service requests. One of these key requirements is having a USDA-approved lab/inspection facility. “In the United States, a truck comes in, you put the product in a freezer for two weeks, then it’s picked up and gone. At the border, you offer a value added unique service for proteins and produce.”

George Cruz, Senior Vice President, Southern Region, United States Cold Storage in Laredo, notes the city is very close to the cold chain industry and facilitates inbound cargo very aggressively. “The city added more lanes and fast lanes and offered preapproved driver status to cross the border – all evidence of a strong focus on the food industry and attracting more business to Laredo.”

Price of Raw Materials

Castro notes another consequence of the pandemic is the reduction in border crossings from the United States into Mexico. “Big food factories close and storage starts to reduce at the same time as the price of raw materials is increasing because of the low supply of products. If there is low production in the United States, we pivot and receive that product from another country.”

“The total lack of control over what goes on at port and the lack of predictability with overseas containers makes our customers take a fresh look at sourcing product from the southern United States and Mexico.”

TIM LUDWIG,
Bradner Cold Storage

Coronado adds that in Mexico, as in the United States, there has been a spike in the cost of raw materials for food production, but in Mexico, prices have not followed suit. “Here, labor costs and availability are not a problem. Production costs more because of the price of raw material but production never slowed down in Mexico during the pandemic, and it is U.S. consumption that is driving prices higher than they are increasing in Mexico,” Coronado explains. “Therefore, it makes sense to export the product rather than sell it here, and it can offset the price increase from the raw materials.”

To be certified by the USDA to ship from Mexico into the United States, structural changes were made to the facility and an inspector was hired to audit for USDA compliance to ensure product would pass inspection at the border, says Coronado. He adds it is extremely disruptive and very costly if you don’t get it right. “All the changes we made and retooling our process for certification were driven by demand, not something we pushed or planned, but it has added value and is very positive for our business.”

Inventory Trends

Cruz notes 2021 was a record sales year for retailers, which impacts inventory levels. “Many customers can’t keep product on the shelves – it’s getting sold as fast as it can be made or processed. This translates to smaller inventory held at the warehouse as it has to go to retailers to put on shelves.”

Trying to get as close to just-in-time inventory levels as possible has been the industry’s standard operating procedure for years, says Coronado. “There is a risk to operating that way and the risk materialized. For the past 18 months in the United States, scarcity has been

the name of the game for the food industry, and empty shelves are very disruptive for sellers and buyers,” Coronado acknowledges. “Now everyone is working to rebuild inventory at a higher safety level than pre-COVID.”

The lack of products coming into Mexico from the United States because of labor issues in U.S. plants has caused consumption habits to change, according to Castro. “With a shortage of U.S. beef, Mexican factories started to look to other countries and different suppliers of raw materials as well as finished products,” he says. “Proteins, especially poultry, is arriving in Mexico through other ports and from other countries, like Brazil.”

Driver Shortages

In Mexico, a lack of border crossing/transfer truck drivers as well as long-haul truck operators are an issue impacting their customers, says Castro. “Our customers are finding it difficult to move product from Colombia (across the border from Laredo) to the distribution centers in Mexico City.”

“With the shortage of drivers in the United States and Canada, it is very convenient for the United States to have this huge pool of commercial drivers across the border in Mexico,” Castro adds. “Now Mexico has a reduced number of long-haul drivers because they are looking for better opportunities elsewhere.”

Castro says the number of transfer-only operators (who cross the border to Laredo, pick up a trailer and cross back with it to Mexico) is declining because they all want to be B1 operators. “Having that designation makes it much easier to get hired as they can cross the border and drive into the United States.”



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Driver shortages are being supported by many companies that are hiring B1 drivers, says Cruz. B1 is a designation that permits Mexican nationals with worker's and commercial driver's permits to cross the border and drive further within the United States to make deliveries rather than being limited to border regions.

"Historically, Mexican carriers crossed over and stayed within the U.S. border where the product would transload and go on its way or into our cold storage facilities," Cruz notes. "Driver shortages have extended the avenue where the appropriate approvals and inspections can be obtained to points further north of the border. It's a big concern here on the border that trucks will go further up and bypass our facilities."

Outlook and Expectation

"Our ability to grow will depend very much on our customers' ability to operate their business to their full potential despite geopolitics, the pandemic and global supply chain issues," Truyen says. "Our focus remains on supporting our customers the best we can as we navigate these difficult times. And so far, we're navigating really well and managing to partner with customers and grow the business."

"Volume is moving up and down the West Coast and we will increase volumes north and south based on confidence in the reliability of the supply chain as opposed to bringing product in by sea," Ludwig points out. "It's the least carbon-efficient way to move it but the most reliable when there are increases in volume."

Pedneault believes companies have never taken the supply chain seriously. "We see this on a daily basis and have to educate current and new customers on the nuances of the supply chain and its overall fragile nature," he says. "Ultimately, it can be the single difference between growth and being dead in the water. The true impact is yet to come as the market starts to return."

He also believes in the need to focus efforts on agility and flexibility. "We need to have a contingency plan for everything we do, we have to drive increased holdings and become more self-sufficient (and pay more to do so) as a regional economy," Pedneault says.

"Driver shortages have extended the avenue where the appropriate approvals and inspections can be obtained to points further north of the border. It's a big concern here on the border that trucks will go further up and bypass our facilities."

GEORGE CRUZ,
United States Cold Storage

"The first half of 2021 was very difficult with lots of empty warehouses but now in my region we have better occupancy and different new projects and new value added services," Castro points out. "Now, we continue to analyze new opportunities for our customers such as repacking and acting as a buffer at the border distribution center in order to export product on their behalf. That's for an American company – that's huge."

Avocado is one of the biggest commodities exported from Mexico and one of the biggest commodities his company handles, says Cruz. "Traditionally, avocado farms have been limited to one region in Mexico but now that has been expanded to multiple regions with different microclimates and growing seasons. We expect that expansion to continue in 2022."

Cruz says future growth depends on Mexican production increases. "I'm getting feedback from our customers' projections that imports are going to be similar to 2021," he says. "In Mexico, it's an all-agricultural market and dependent on favorable weather and what happens with the weather is a force majeure. I've been in Laredo many decades and seen the highs and lows of what weather can do."

In addition, Cruz says labor shortages always must be considered whether in the United States or in Mexico and increased operational costs makes it difficult to manage growth for both sides.

Rodriguez says business looks promising, despite the challenges, and believes it is good times for the cold storage industry. "We see a positive trend in the border region. Mexico's exports to the United States and Canada continue to rise so the border region is a booming area. The key is knowing the culture and how to continue to cultivate the Mexican market."

Coronado's view is that most of the trends holding back growth for the industry in general are temporary, and once resolved, the industry is on track for rapid growth. And he expects present volumes to remain. "The factors that will unlock value and ultimately strengthen the cold supply chain – increased trade, heterogeneity in product consumption, safe inventory levels – will be material drivers of growth in the future." 🌀

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ASIA'S COLD CHAIN IS HOT

But are infrastructure and transportation up to the task?

By Karen E. Thuermer

Cold chain logistics are hot in the Asia Pacific region. Accounting for around 60% of the global population, the region represents a huge consumer base. Catalyzed by rising disposable incomes and a shift in dietary patterns, demand for premium products is increasing. So is the transportation to convey these products.

Of course, COVID-19 has impacted cold chain operations in Asia, including increasing concerns over food safety. This has accelerated already shifting consumer habits towards buying fresh and frozen food products from organized retail channels such as supermarkets rather than the traditional wet markets.

The growth of e-commerce and online food retail has also catalyzed the demand for frozen food. These trends have driven the demand for cold storage facilities in the region and bolstered further investments in infrastructure and transportation improvements.

View from Japan

Japan is regarded a mature market for cold chain logistics and is dominated by several players. One is Tokyo-based Nichirei Logistics Group Inc., which began business in 1945 as Nippon Reizo Inc.

Today the company provides warehousing, low-temperature storage and transportation services in Japan and abroad. Its low-temperature logistics services are provided to customers in a variety of industries such as restaurants, retail stores, food manufacturers, trading companies and wholesalers.

“The total number of facilities in Japan and overseas is 128,” says Hiroshi Goto of the company’s Overseas Business Development Division. “Currently, we are expanding our overseas business in a total of 12 countries in Europe, China and ASEAN.” As of 2021, this included Thailand and Malaysia.

Like the rest of the world, Nichirei Logistics was impacted by the COVID-19 pandemic. Goto says due to the disruption of the global distribution network (shortage of empty containers, delay in arrival, accelerated arrival), there were many cases where the arrival of cargo at the company’s warehouses was delayed.

“In addition, we received many inquiries from customers regarding securing containers and booking ships, and we handled them while sharing information with our overseas subsidiary,” Goto says. “We exchanged information closely with customers, secured storage space, and adjusted the container delivery schedule so that we could be flexible in dealing with problems such as ship arrival delays.”

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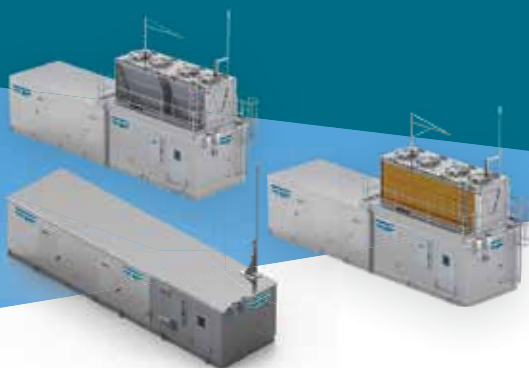
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Aside from the challenges imposed by COVID-19, Goto reveals that Japan's overall infrastructure poses challenges for cold chain operators.

"In Japan, the 'upper limit on overtime hours in automobile driving operations' will be applied from 2024, so there are concerns about the impact of this regulation on the transportation and logistics industries," Goto adds. "In order to deal with these issues, we are trying to reduce the burden on the transportation company by taking measures such as introducing a 'truck berth contact time reservation system' and 'pallet transportation.'"

Goto explains that his company believes that technological innovation plays a very important role. "We are currently promoting the automation of operations by utilizing advanced technologies such as AI and robotics," he says. "Technological innovation is also expected to be effective in terms of improving work efficiency, reducing work mistakes and preventing accidents."

In addition, the company would like to use the human resources freed up by technological innovation to enhance the value of the user experience. "This is what we call the added value that brings excitement and pleasant surprises to customers who use our services," he says.

The company is currently building a system to visualize the data and follow the instructions so that even newcomers can work with a certain level of efficiency. "Since it is impossible to fully automate warehouse operations, we are developing technology to reduce the percentage of work that people have to do," Goto says.

Like so many companies, Nichirei Logistics faces labor shortages because of the pandemic. "By utilizing advanced technology, we are trying to reduce the work burden on employees," he says.

The evolution towards ecommerce has also had a big impact on Nichirei Logistics and the cold chain throughout Japan.

"Currently, we operate a delivery base for the cold-required goods of a courier company," he explains. "But due to the recent expanded demand for e-commerce, we are required to expand the base."

Goto says in the future, there is a possibility of expanding in the business-to-business field by providing transportation and temporary storage from local food production areas to the company's bases, and then delivery to the courier bases.

China's National Plan

In recent years, the scale of China's cold chain logistics market has grown rapidly. The construction of national major cold chain logistics bases and cold chain facilities at the place of origin and sales has been steadily promoted, and the level of cold chain equipment has been significantly improved.

According to the Cold Chain Logistics Committee of the China Federation of Logistics & Purchasing, in 2020, the scale of the cold chain logistics market exceeded CNY 380 billion yuan. The capacity of cold storage was nearly 180 million cubic meters, a year-on-year increase of 17%, and the number of refrigerated vehicles was about 287,000, a year-on-year increase of 34%.

According to the Federation's incomplete statistics, the capacity of cold storage under construction in the first quarter of 2021 was 5 million cubic meters, the capacity of cold storage under construction in the second quarter was 3.85 million cubic meters, and the capacity of cold storage under construction in the third quarter was 3.02 million cubic meters.

When all counted, however, the Federation predicts the capacity of China's cold storage will exceed 195 million cubic meters and the number of refrigerated vehicles will exceed 320,000 in 2021.

Given the continuous improvement of living standards in China, the scale of the fresh food market continues to grow steadily. Consequently, the Federation reports that the total volume of China's fresh food retail market is predicted to exceed \$846.8 billion in 2021, with a year-on-year increase of 8%. The market of ready-to-cook vegetables and quick-frozen food is developing rapidly.

"At the same time, the new consumption model of a membership system that provides fresh retail plus catering is sought after by current consumers, which has brought broader development potential to the cold chain logistics industry," says Qin Yuming, Secretary-General of the Cold Chain Logistics Committee of the China Federation of Logistics & Purchasing.

In March 2021, China implemented mandatory traceability requirements for all food products transported through the cold chain, including dairy products, fruits and drinks. It was an expansion of efforts to prevent COVID-19 from entering the country via imported foods.

In December 2021, the General Office of the State Council issued its "Fourteenth Five-Year" Cold Chain Logistics Development Plan. The plan requires focusing on outstanding bottlenecks and pain points to smooth distribution channels. This will be accomplished by building four "horizontal" cold chain logistics channels in the north (Shandong, Shaanxi, Tibet, Yangtze River) and in the south, and four "vertical" cold chain logistics channels will be built in the west (Erguang, Beijing, Hubei, Fujian) as well as eastern coastal areas.

"This marks China's cold chain logistics officially entering the stage of high-quality development," Yuming says.

Both the horizontal and vertical national cold chain logistics backbone channel networks will have internal and external connections. To enhance cold chain international transportation capabilities, the plan relies on the China-ASEAN multimodal transport alliance base to expand the new western land-sea channel, sea-rail combined transportation, international rail combined transportation and cross-border highway shuttle international cold chain logistics business.

One major train route has already opened between China and Laos. The China-Laos railway, which began operations in late 2021, is regarded as an important part of the pan-Asian railway network. According to *China Daily*, it will ultimately connect Kunming in Southwest China's Yunnan province with Bangkok and Singapore. It will also allow Thailand to transport goods to China, Central Asia and every European nation that is taking part in China's Belt and Road Initiative.

Yuming emphasizes that in 2021, information, digitization and intelligence also became critical to China's cold chain industry.

"This shows that technology has imperceptibly affected the cold chain logistics industry," he says. "Whether it is the improvement of cold chain transportation efficiency and the maximization of inventory turnover, or the realization of multilevel, multisystem and cross-regional cold chain logistics traceability closed loop by 2025 proposed in the 14th Five-year Cold Chain Logistics Development Plan, they are both inseparable from the support of technology." 📧

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CASE STUDIES

By Keith Loria

ARCO Brings MTC Logistics Poultry Facility to Life

When MTC Logistics was looking to expand with a southeastern poultry distribution center in Mobile, Alabama, United States, it turned to ARCO Design/Build for the job.

After all, the company was very familiar with ARCO having used the company on two successful prior projects.

In March 2021, ARCO put the finishing touches on a new 295,761-square-foot cold storage and food processing facility for MTC Logistics. The result earned a ticket as a finalist for the Controlled Environment Building Association's 2021 Built By the Best Award.

"The facility allows MTC Logistics direct access to the Gulf Coast, while expanding its operation and increasing its daily blast freezing capabilities by more than 50%," says Brian Osterloh, Vice President of ARCO.

Getting Started

At the beginning of the design and planning stage, ARCO paid special consideration to the site's poor subgrade capacity. In addition, being the former home to a rail maintenance yard created a need for site remediation to remove waste and debris.

"In order to increase the structural support of the subgrade soil and improve its conditions, a surcharge load was placed on top of the existing soil to exert pressure and strengthen the subgrade," Osterloh says. "The project site was also located in a floodplain, which needed to be considered."

The ARCO team was tasked with maximizing as much storage space as possible on the allotted site footprint and set forth to increase distribution and storage capabili-



ARCO Design/Build created a cold storage facility for MTC Logistics capable of processing a million pounds each day. (Photo courtesy of ARCO Design/Build.)

ties. This was accomplished by implementing an innovative racking solution that provides flexible and modular space solutions to optimize resources.

"Flexspace 360 mobile racking increases storage density by 30% compared to traditional double deep racks," Osterloh says. "Nearly two miles of embedded rails in the floor slab allow for the rack to not only increase storage capacity, but also improve selectivity. The installation of this mobile racking required the team to design the

warehouse flooring slab tolerance to support very heavy dynamic loads to handle the equipment."

That was just one unique challenge of the project.

There were also the challenges created by the weather. Throughout the duration of the project, more than 188 inches of rain fell on the site, and the ARCO team also had to deal with three tropical storms and four hurricanes. Thankfully, the company's has experience working in different climates and



The 295,761-square-foot cold storage and food processing facility designed and built by ARCO for MTC Logistics increases its daily blast freezing capabilities by more than 50%. (Photo courtesy of ARCO Design/Build.)

weather zones across the United States.

“We worked in tandem with MTC Logistics to identify and account for any time impacts due to weather to ensure the project was still delivered without negatively affecting MTC business,” Osterloh says. “Since it is very likely this facility will encounter storms of this size in the future, high wind loads were taken into account so that the building can handle future extreme wind and weather events.”

In the end, the original timeline was adjusted to account for the storms as well as the pandemic. The project was still delivered on budget without negatively affecting MTC business.

Innovation Matters

For any large cold storage distribution facility, it is important to implement design and technologies that provide solutions for the significant amount of throughput coming in and out the doors each day. Osterloh explains this facility would be processing more than a million pounds a day.

“To maximize space, we needed the height of the building to allow for as much storage as possible,” he says. “The consequential loads drove us to use a higher performance slab system utilizing steel fiber reinforced concrete, which created sustained longevity of the floor slab and reduced joint degradation, while creating optimal load bearing.”

Additionally, HCR doors (also known as air curtains) were installed to combat humidity

“It was our goal from the very start of the project to complete a turnkey project for them that will have a positive impact on their business and the communities that they serve for years to come.”

BRIAN OSTERLOH,
ARCO Design/Build

and temperature deltas. They also ensure efficient air block even when the hard doors are open, decreasing air and temperature loss.

The facility was housed with 23,072 square feet of -20°F QuickFreeze technology complete with 42,000 pallet positions of Flexspace 360 mobile racking and a clear height of 50 feet, 6 inches. It features the ALTA EXPERT Refrigeration System, which has the flexibility of changing temperatures from low to high by easily adjusting the temperature set point.

The Design/Build Method

At its core, ARCO’s design-build method allows owners to manage one contact with a single point of responsibility, allowing the designer, contractor and subcontractor to be part of the same team from the beginning.

This is beneficial in many ways, including allowing more opportunities to innovate,

a better ability to fast-track projects, early knowledge of cost, shorter procurement period and fewer disputes.

“From the beginning, we saw the new MTC Logistics facility as a significant investment in not only meeting immediate demands but also establishing a foundation for MTC’s future success,” Osterloh says. “With ARCO’s centrally managed design-build construction process, our team of experts were able to make the most of that opportunity.”

He notes that as crucial as the design-build process is, the people behind it are just as important.

“MTC Logistics is a repeat client of ours, and we are grateful for partnerships like theirs,” he says. “It was our goal from the very start of the project to complete a turnkey project for them that will have a positive impact on their business and the communities



To create as much storage space as possible on the allotted site footprint, innovative racking solutions were implemented. (Photo courtesy of ARCO Design/Build.)

that they serve for years to come.”

That familiarity allowed for ARCO to offer solutions that optimized the building’s operational efficiency, which included the mobile rack storage to maximize pallet quantity on a limited area site; the strategic door opening sizes and locations to the QF area to offer higher energy efficiency; and utilizing industrial Freon EXPERT refrigeration units to provide consistent low maintenance cooling at reduced energy costs.

Sustainable Solutions

MTC Logistics was also looking for its new facility to be energy efficient, which meant the ability to freeze large quantities of product while maintaining low energy consumption.

“To accomplish this, the building’s main sustainability and energy conscious features include QuickFreeze technology, the waterless ALTA EXPERT Refrigeration System, mobile racking and the use of LED lighting throughout the building,” Osterloh says. “By using the QF+ technology, the facility is able to freeze over one million pounds of chicken per day at warmer temperatures. Contrary to the traditional freezing systems that blasts cold air at food products, the QF+ pulls air through the products. In turn, this creates faster, and more consistent freezing.”



ARCO provided a turnkey project for MTC Logistics in its new poultry distribution center. (Photo courtesy of ARCO Design/Build.)

Additionally, the in-rack and modular freezing/tempering technologies create energy-efficient cost savings while modernizing the facility’s freezing and cooling processes.

A series of other initiatives were put in place to make the building energy efficient, such as the mobile rack to increase the density of the building while decreasing the land disturbance and impact on the local energy grid.

Open for Business

MTC Logistics was able to open the facility in March 2021.

“Throughout the life of this building, this turnkey solution will continue to have a positive impact on the industry and local communities, while helping MTC Logistics further grow its business in the Southeastern region,” Osterloh says.

Ownership Change Creates Challenges for ESI Group USA

While change can be good, having an ownership change in the middle of a project is something that most companies probably would rather not have to worry about.

But that is what happened when ESI Group USA was in the midst of construction on a new food distribution facility for Reinhart Foodservice.

“Initially, the client expressed the need for growth and expansion based on their customer needs,” says Timothy Nguyen, Senior Vice President of ESI Group USA. “We looked at increasing their efficiencies within their existing space, but ultimately concluded a new facility would best meet their long-term needs and growth.”

The job, however, took a strange turn when Performance Foods Group acquired the client, and a redesign was required based on the new owner’s criteria.

“The team, which included office design, office project management, and on-site field construction managers, had to endure project shut down, shift and pivot due to new ownership requirements,” Nguyen says. “The team continued to stay focused, optimistic and energetic.”

That commitment and a successful outcome helped ESI Group USA become a finalist for the Controlled Environment Building Association’s 2021 Built By the Best Award.

A New Owner Takes Hold

ESI was selected by Reyes Holdings, the previous holding company for Reinhart Foodservice, to design and build a state-of-the-art food distribution center, working in collaboration with Reinhart’s director of facilities and design team leader – both of who had worked at ESI previously.

“They were very familiar with ESI’s design-build approach and that aided in a seamless process to get the project off the ground,” Nguyen says.

Shortly after construction, rumors started circulating that PFG was about to acquire the company.

“Once the acquisition moved forward, Reinhart’s team members and their roles began to change, making it difficult to obtain direction on the selection of office finishes



Energy efficient measures were incorporated in the refrigeration system including VFDs, energy efficient motors and an ammonia central system. (Photo credit Curtis Waltz, Aerialscapes. Photo courtesy of ESI Group USA.)

and other outstanding design elements,” Nguyen says.

Not surprisingly, PFG had its own idea about what it wanted, and that meant changes to the design – even though the project was already in motion.

Fortunately, ESI had previously worked with Performance Food Group on several buildings, so that enabled a positive collaborative approach to the challenges at hand.

Due to this change in ownership, and the fact that the project started and stopped, it also required working through the winter in Wisconsin.

“This made it extremely challenging due to the rain, snow, ice and cold,” Nguyen says.

Overall, weather accounted for the loss of 30 “man days,” and that impacted the schedule for site work, concrete paving, concrete wall panels, roofing and steel erection.

“Mother Nature is the biggest variable in a construction project and all a general contractor can do is adjust the schedule to

sequence work, when possible, to make up time lost,” Nguyen says. “It was decided by PFG that the completion schedule was imperative enough that stabilizing the soil to pour concrete foundations during the cold winter months must proceed.” Nguyen says measures were taken to treat the frozen ground, provide additives in the concrete mix and pour in heated areas during brutal cold temperatures.

The remobilization, winter conditions and design changes added substantial costs to the initial guaranteed maximum price. To minimize cost implications to the project, ESI worked with PFG to use up any previous cost savings from the project buyout before requesting any additional funds.

Innovative Effort

With the new design in place, the 242,706-square-foot facility was designed for multiple uses with its primary purpose to distribute food to the local region in and around Shawano, Wisconsin, United States.

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The 242,706-square-foot facility was designed for Performance Food Group by ESI for multiple uses with its primary purpose to distribute food to the local region. (Photo credit Curtis Waltz, Aerialscapes. Photo courtesy of ESI Group USA.)

PFG wanted a product demonstration kitchen constructed on the second floor of the office area. The two-story office design and the security system access points now allow for PFG to rent out the meeting rooms on the first floor and hold demonstrations for clients as well as training sessions all without interrupting the daily operations.

“A double door was installed with a safety gate to allow forklifts to deliver pallets of food and place them directly in the kitchen,” Nguyen says. “A soundproof partition wall sits between the kitchen and training center allowing for food prep without any disruption during training sessions. This allows PFG to maximize the use of each space.”

The finished project consists of a dry dock, dry storage, storage mezzanine, +40-degree dock, +35-degree cooler, +45 degree produce cooler, +55 degree produce cooler, +28-degree meat freezer, +55 degree will-call cooler, and -10 degree freezer.

There are also support system blocks for electrical, controls room, refrigeration equipment skid package, dry grocery receiving office, perishable food receiving office, operations, and transportation office as well as administrative/executive office areas. Accessory buildings total another 16,465 square feet. This is made up of a truck service center to manage PFG’s truck and trailer fleet.

“The team, which included office design, office project management, and on-site field construction managers, had to endure project shut down, shift and pivot due to new ownership requirements. The team continued to stay focused, optimistic and energetic.”

TIM NGUYEN,
ESI Group USA

“During construction, PFG added power chocks to the exterior of the dock that lock trucks in place and require a release by Reinhart staff before the tractor/trailer can leave the dock position,” Nguyen says. “From a safety standpoint, the truck cannot move or roll, and staff can ensure forklift drivers are out of the trailer before the truck is released.”

In addition, this protects the integrity of the thermal seal at the dock door helping to maintain cold chain temperatures as items are transferred between the tractor/trailer and the refrigerated dock opening.

While this facility’s client did not formally apply to achieve LEED certification, LEED principles were incorporated throughout design and construction.

“Primarily energy efficient measures were incorporated in the refrigeration system,” Nguyen says. “VFDs, energy efficient motors, ammonia central system, hot gas defrost, glycol floor warming, controls energy management system and LED lighting were all included.”

Keeping to the Schedule

As with any project, the schedule was paramount for the project as the client wanted to coordinate all operations including IT, sales, and purchasing to seamlessly coordinate with the construction sequencing.

Final electrical and fire protection testing were tightly coordinated to ensure all entities had adequate requirements. This process was coordinated not just daily but sometimes

hourly to ensure proper protocols and the schedule would be satisfied.

Nguyen explains that typically, ESI finishes the construction of the entire project before turning over the facility. However, since operations wanted to ensure that deliveries to the client would not experience disruption, ESI opened certain areas of the offices, operations, and transportation for use after receiving the certificate of occupancy. This allowed business operations to continue while final punch-list items were being completed during the construction phase.

“The end product of workmanship, quality and overall aesthetics of the facility are top notch and excellent – the ESI team is very proud,” Nguyen says. “In the end, the project was completed satisfactorily even considering the weather, transfer of ownership and new facility start-up. Considering these factors, the client was very happy with the final product. The quality, workmanship, and design will allow PFG to become more efficient and bring on new business because of this new state-of-the-art facility.”

KEITH LORIA is an award-winning journalist who has been writing for major newspapers and magazines for close to 20 years, on topics as diverse as sports, business and technology.

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The CEBA Built by the Best Award, acknowledges association members for their expertise and innovation in constructing, renovating and or modernizing controlled environment buildings. The award is open to project teams comprised of contractor/design-build companies, processor/end-user/warehouse/third-party logistics companies and supplier sub-contractors that are association members. Nominations are now being accepted for the 2022 Built by the Best award. Visit the GCCA website to submit a nomination or get more information.



Truck washing station. (Photo credit Curtis Waltz, Aerialscapes. Photo courtesy of ESI Group USA.)



A double door was installed with a safety gate to allow forklifts to deliver pallets of food and place them directly in the test kitchen. (Photo credit Curtis Waltz, Aerialscapes. Photo courtesy of ESI Group USA.)



A POOL FOR SECOND CHANCES

A largely untapped labor market can help cold storage companies excel.

By Gina Veazey

It is beginning to set in that the labor crisis isn't a short-lived, pandemic-induced phenomenon likely to right itself in time. Locked in a competition for workers and driven by public outcry for greater social equity, some of the largest private employers in the nation are taking a second look at hiring people who have a criminal record.

Second Chance Catching On

In the cold storage industry, Nor-Am Cold Storage has nearly 25 years of experience with second-chance workers, already employing dozens of people with a criminal record across its locations in five states across the Midwest United States. But, in the case of Nor-Am, it has nothing to do with the labor crisis and everything to do with the company's culture.

"These are people that a lot of companies would write off because of their past issues with drugs, you get a background check on them and they have felonies and maybe they're on parole or probation," says Ashley Albers, Vice President of Human Resources at Nor-Am Cold Storage.

Roughly 77 million Americans have a criminal record, a number that works out to one in three adults. Advocates for hiring from this labor pool point to high-quality work and

strong productivity, as well as lower turnover rates. Despite this, the unemployment rate among previously incarcerated people in the United States, even before the COVID-19 pandemic, was 27% — higher than at any other point in U.S. history, including during the Great Depression.

"Business has an important role to play in making it easier for people with criminal backgrounds to get back on their feet," said JPMorgan Chase & Co. Chairman and CEO Jamie Dimon in a press release announcing formation of the Second Chance Business Coalition (SCBC), which he co-chairs. "Providing a second chance will give people dignity and allow them to provide for their families, and it helps companies like ours expand the number of people we hire to ensure we get the best talent."

How to Find Second-Chance Workers

For employers that are ready to hire people with a criminal record, Albers says a great way to start is by reaching out to state reentry coordinators. Typically, the contact information for this office can easily be found on state department of corrections sites. "In my experience, they will call you back almost immediately if you tell them that you are interested in hiring recently released individuals," says Albers.

Re-entry coordinators can offer everything from job postings with local probation and parole offices to setting up hiring events at the parole officer's office. The re-entry coordinator in Missouri invited Nor-Am to participate in job fairs inside the prison, allowing Albers and her team to meet people scheduled for release.

In addition, the website 70millionjobs.com gives employers a place to post "misdemeanor- and felony-friendly" job openings.

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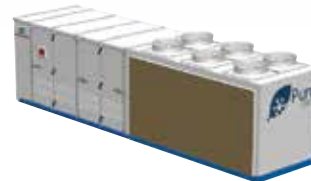
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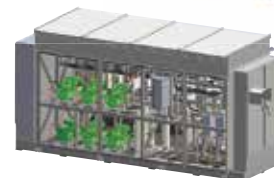
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Making the Case for Second Chance Workers

The Second Chance Business Coalition (SCBC), as part of its work to encourage other employers to give people with criminal records a better shot at employment, offers a wide variety of resources. Companies looking to explore the benefits of second-chance employees will find research, case studies and other help on the SCBC website.

Many of the organizations that lead SCBC offer targeted resources or are taking action to advocate on behalf of the initiative with policymakers:

- The SHRM Foundation
- Business Roundtable
- Dave's Killer Bread Foundation
- Georgetown University Pivot Program
- Stand Together

At last count, 35 large employers have joined SCBC, committing to expand opportunities to employment and greater upward mobility for people with criminal records. In addition to JPMorgan Chase & Co., the initiative is backed by companies representing a large range of industries, including Union Pacific, McDonald's, Walmart, Kroger, Best Buy, The Home Depot, P&G and others.

Unlike these companies, Albers says Nor-Am "didn't set out one day to start being a second chance employer, to start trying to rehabilitate felons in the workplace." She traces the influx of these workers to the company's 2009 acquisition of Artesian Ice in St. Joseph, Missouri. It was the first time the company had taken on a large number of workers – about 75 in all.

St. Joseph is unique. Two prisons — one in town and another about 35 miles to the east — release felons into the community every day. Albers, who works out of Nor-Am's St. Joseph facility, observes that, "These felons have to stay because they're being assigned to probation and parole here. If as employers we can offer actual opportunities to the people who truly want to change their life, that's how we will impact our community."

Benefit of the Doubt

Although Nor-Am conducts background checks at the supervisor level and above, Albers says the company gave existing hourly workers at the St. Joseph facility the benefit of the doubt. "We weren't regular in that community, and we went in saying, 'You all have been working here, and if you can pass your drug screen and you show up every day and

you're a good employee, we have no reason to not offer you the same job that you've already been doing successfully.'"

Over time, Nor-Am built rapport with its new employees, learning about their backgrounds along the way. With a sizeable number of employees relatively fresh out of the prison system, Albers says the concern was how Nor-Am could help.

"We looked at what extra support could they need? What things should we be aware of in terms of the flexibility they might want to go meet with their [parole officer], or to go for a drug screen — they only get 30 minutes to go no matter what time they get called up," Albers says. "These were just the needs of our employees."

In December 2021, Nor-Am shared a poignant video in which several of its employees talk candidly about their experience finding work with the company. Their stories illustrate the range of barriers encountered by people recently released from prison and the powerful impact of an employer's trust and flexibility.

"They are some of our strongest and most loyal and dedicated employees," says Albers. "They go above and beyond to help out their coworker, because they saw we gave them a chance and now they want to give somebody else a chance." 🗨️

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Easing the Sting

For cold storage companies that may be on the fence about hiring people who have a criminal record, Albers points to the Work Opportunity Tax Credit (WOTC). This federal tax credit is for employers that hire and retain people from certain groups known to encounter substantial barriers to employment. Nor-Am is on target to earn a \$50,000 tax credit under the program, Albers reports.

"That helps offset some of the sting of taking a little bit of a risk," she explains. "I might have a little higher turnover at first while we try to acclimate, but there's also some financial incentive as well."

Of course, employers have to jump through some administrative hoops to earn the tax credits, but there are numerous companies that specialize in streamlining this process. HIREtech, the company that Nor-Am partners with to qualify employees for the program and track the credits, indicates that WOTC is authorized through 2025. The HIREtech website notes that there is no limit on the number of employees who can qualify, and any excess tax credit may be carried forward for 20 years.

In addition to ex-felons, WOTC is available for employees who are recipients of certain federal aid; some veterans; people with physical or mental disabilities who have been referred to the employer by specific state and federal programs; certain long-term unemployment recipients; and some residents of certain economic development zones.

In addition to WOTC, the U.S. Department of Labor offers a bonding program, Bonds for Jobs, to give employers greater peace of mind about the risk associated with hiring people who have a criminal record. The program, which costs employers nothing, is available for any job with any employer in any state. It provides \$5,000 worth of fidelity bond coverage in the first six months of employment.

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From fresh produce to life-saving pharmaceuticals, cold storage has become a vital and rapidly-growing part of the supply chain. Whether you're building a new facility, upgrading a warehouse, or converting an existing building to cold-storage use, find the expertise you need by talking to a GAF cold storage specialist. gaf.com/coldstorage

GCCA ANNOUNCES 2022 VIRTUAL GLOBAL POLICY FORUM



GCCA COLD CHAIN POLICY FORUM
VIRTUAL
AUGUST 9–11, 2022

GCCA is excited to build on the momentum created around advocacy in 2021 by expanding its activities in the United States and globally.

In 2021, GCCA established the Advocacy Fund, which enabled new investments in resources to help GCCA promote and protect the industry with policy makers. GCCA rolled out new member services including the Washington Weekly newsletter, monthly Advocacy Webinars and a grassroots mechanism connecting members with their elected officials in the United States.

GCCA was also fortunate to be able to execute an in-person Policy Forum last year just before the Delta variant surge.

In 2022, GCCA is looking to expand its advocacy reach to other countries and regions of the world. One of the ways GCCA is planning to deliver new advocacy pro-



gramming to members is through the newly rebranded Global Policy Forum to be held August 9-11, 2022.

The Global Policy Forum is envisioned as the premier policy event for businesses engaged in temperature-controlled logistics. As with previous Policy Forum events, it will feature education sessions and keynote presentations focused on rules, regulations and legislation that directly impact the industry and provide the opportunity for engagement with key government officials.

Over the past few years, the Policy Forum has been held in-person in Washington, D.C. However, due to ongoing COVID-19 restric-


tions and protocols limiting our in-person engagement opportunities, we have chosen to move the event to a virtual format in 2022. The virtual format will enable us to deliver a much broader program and reach a global audience. Committees that normally meet at the Policy Forum will also conduct their meetings virtually at times and dates yet to be determined.

GCCA intends to return to an in-person event in the United States in 2023 as well as continuing to build on global advocacy program offerings.

The primary audience for 2022 Virtual Global Policy Forum includes third-party

transportation, warehousing and logistics providers, design-build firms, food processors and manufacturers, retailers and related industry associations.

As in previous years, the focus on U.S. regulatory and legislative issues will continue. In addition, GCCA will offer programming to include policy updates from across the globe including Canada, Brazil, Latin America and South Africa.

We are excited to truly provide a global perspective on the industry at this year's forum and hope that you will join us on August 9-11. For more information, please visit gccca.org. 

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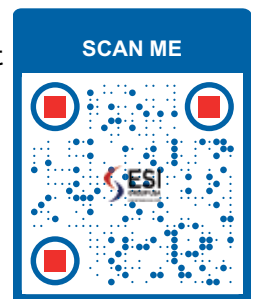


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COLD CHAIN DEVELOPMENT

NEWS ABOUT WFLO INTERNATIONAL PROJECTS

This column features news about key projects of the World Food Logistics Organization (WFLO), a GCCA Core Partner, and its work with members, aid organizations and international development partners to help emerging economies and lower-income countries meet the challenges that arise when growing a safe and efficient global cold chain.

NEW PROJECTS

Benin Projet d'Appui à la Compétitivité des Filières agricoles et à la Diversification des Exportations (PACOFIDE), 2022

Partnered with LixCap

In the first new WFLO project award of 2022, the organization signed a contract with GCCA member LixCap to provide technical support to ensure the safe and commercially viable operation of temperature-controlled facilities in Benin.

GCCA/WFLO was requested by the government of Benin to develop preliminary designs for the project and will be supported by GCCA technical experts Richard Dowdell and Manuel Cabrera Kabana.

The client, PACOFIDE, will soon launch a tender process for the conditioning facility in the Grand Nokoué wholesale market. This tender process directly follows the successful cold chain rapid response and strategy developed by the consortium.

Burundi Projet de Développement Local Pour l'Emploi (PDLE), 2022

Partnered with LixCap

WFLO signed a contract with GCCA member LixCap to provide technical support to ensure the safe and commercially viable operation of temperature-controlled facilities in Burundi.

The team is focused on delivering a concept design for state-funded cold chain facilities and design and tender documentation for the facilities.

CEBA member CT-Technologies was awarded the contract to build the cold storage facility in the airport of Bujumbura, Burundi, in December 2021. This is WFLO's second new project award of 2022.

ACTIVE PROJECTS

Bangladesh Trade Facilitation (BTF) Project, 2020 – 2025

Partnered with Venture37 and LixCap

WFLO continues to support Land O'Lakes/Venture37 in the USDA-funded BTF project. WFLO provides cold chain resources and expertise to improve the cold chain at air and seaports in the country.

The team is focused on training, SOP development and supporting an operational audit system in 2022.

WFLO completed a cold chain rapid assessment in Vietnam in 2020 as part of the Southeast Asia EMP project. Pictured is a wet market the team visited while learning about the cold chain systems in the country.



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Manni Group Design Award – Ghana Food Innovation Center

GCCA has partnered with Manni Group, Young Architects Competitions (YAC) sponsored by SACE (an Italian Export Credit Agency that supports sustainable projects in Italy and abroad) and Fondazione Promozione Acciaio (a cultural institution promoting the advancement of steel building and infrastructures) to launch the third edition of the Manni Group Design Award.

This year's competition looks at the development of the cold chain in Africa and will focus on the design of the Ghana Food Innovation Center.

Developed by Manni Group and InspiraFarms, the Ghana Food Innovation Center will be a technological and cultural hub for sharing knowledge and technologies to combat harvest loss with the population to meet their needs, develop new strategies to make their activities more competitive and generate thousands of high-quality jobs.

The third edition of the Manni Group Design Award challenges architects and engineers worldwide to create the best design for this cold hub and educational center.

More information on the competition can be found at www.blog.mannigroup.com/en/ghana-innovation-farm-mannigroup-design-award-2021.

Dominican Republic TraSa Project, 2021 – 2025

Partnered with International Executive Service Corps (IESC)

In 2021, WFLO closed the year by hosting a successful webinar on investment opportunities in the DR with GCCA member LixCap.

Looking at 2022, WFLO will review relevant cold chain legislation in the country and coordinate with local cargo and retail associations on cold chain training as well as plan two study tours to demonstrate cold chain best practices on land and at air and seaports in the United States and Latin America.



In 2019, WFLO completed a cold chain rapid assessment in Cambodia as part of the Southeast Asia EMP project. Pictured is the PP Autonomous Port.

Egypt Rural Agribusiness Strengthening (ERAS) Project, 2019 – 2024

Partnered with Abt Associates Inc.

The Feed the Future Egypt Rural Agribusiness Strengthening (ERAS) Project employs a buyer-led, systems-strengthening approach to improve the competitiveness of horticulture producers and related downstream businesses and food processors by developing their ability to respond to domestic and international buyer demand.

WFLO will provide short-term technical assistance on postharvest handling practices for key crops. Dr. Elhadi Yahia, expert on Postharvest Technology of Perishable Foods for the WFLO Scientific Advisory Council (SAC), will travel to Egypt in April 2022 to provide support and training on mangoes.

Georgia Agriculture Project, 2018 – 2023

Partnered with Cultivating New Frontiers in Agriculture

WFLO is developing various remote training modules for the Republic of Georgia. The modules have grown from 10 to 13 and cover deep dives into harvesting; grading, sorting, and packing; packaging for fruit and vegetables; ethylene management; shelf life and temperature; cold storage; lights, floors, doors, and corridors; design build focus points; ultra-low oxygen; business model case studies; marketing channels; and public private partnerships.

Training will be provided by WFLO SAC and GCCA members as well as GCCA technical experts.

North African Cold Chain Skills Gap Analysis and Trainings, 2021 – 2022

Partnered with USA Poultry and Egg Export Council (USAPEEC)

WFLO has completed the first phase of the cold chain skills gap analysis and training in North Africa.

With the information gained during the skills gap analysis, WFLO has recommended relevant trainings and resources for the region to enhance cold chain logistics across all levels of the supply chain. With implementing partner USAPEEC, WFLO will offer these resources to various 3PL providers in the region with the support of GCCA technical experts and members of the association.

Southeast Asia Emerging Markets Program (EMP), 2019 – 2022

WFLO is conducting a comprehensive baseline assessment of the cold chain situation in Vietnam, Thailand and Cambodia. This activity is a part of the USDA-funded Emerging Markets Program (EMP), which helps U.S. organizations promote exports of U.S. agricultural products to countries that have, or are developing, market-oriented economies and have the potential to be viable commercial markets.

In March 2022, GCCA technical experts Kent Sisson and Manuel Cabrera Kabana will travel with GCCA staff member Madison Jaco to Thailand to support the activity. @

COOL SOLUTIONS

SCIENTIFIC ANSWERS TO COLD CHAIN CHALLENGES

This section highlights a cold chain question and answer submitted through the GCCA Inquiry Service to the team of experts on the WFLO Scientific Advisory Council (SAC), the roster of SAC members and abstracts on cool solutions written by SAC members.

To get instant advice from a private, online community of over 4,000 cold chain professionals, simply post your inquiry in the GCCA Online Community. All GCCA Members and their employees can access the GCCA Online Community at community.gcca.org/home.

Q: We have a lot of new employees in training during our busy season, which has led to some damaged cases and exposed product. We must hold on to damaged product until the product owner determines the disposition, so we cannot just dispose of it as it happens.

For example, a few cases on a pallet may be slashed open by a forklift as the driver is storing product next to it. The pallet is marked as damaged, but the customer wants to take it back for rework since most of the product is intact.

What are some best practices for handling damaged product? We do not want to make the problem worse by unstacking pallets and potentially damaging more product in the process.

A: If undamaged products on the pallet can still get damaged later (for example, if liquids drip from damaged products), it seems that unstacking the pallets may be the best path forward. Unstacking also seems the way to go if damaged products can become airborne, such as powder.

If damaged products stick out on the sides of the pallets, this will need to be remedied and some unstacking is unavoidable.

In all other situations, the issue is largely about safely transporting the pallet without products falling off the pallet caused by lower stability due to the damage. Shrink wrapping the entire pallet can be an easy solution in that situation if the product allows for it.

Answer provided by Dr. Kees Jan Roodbergen, Logistics and Operations Management Expert, University of Groningen. 📧

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The WFLO Scientific Advisory Council is an eminent group of food scientists, logistics, and packaging experts from around the world. The council provides cutting-edge research and advice to members of the Global Cold Chain Alliance and its Core Partners.



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University of Groningen,
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Dr. Subramaniam Sathivel

Louisiana State University,
Frozen Food Quality Expert



Dr. Elhadi Yahia

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Technology of Perishable Foods
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**Have a burning cold chain question?
Submit an inquiry to the Scientific Advisory Council
at www.gcca.org/inquiry**

COOL SOLUTIONS: ABSTRACT

SCIENTIFIC ANSWERS TO COLD CHAIN CHALLENGES



DR. KEES JAN ROODBERGEN,
University of Groningen,
Logistics & Operations Expert

Warehouse space is scarce and so is labor. Dr. Roodbergen's team at the University of Groningen in the Netherlands investigate methods to design more efficient warehouses and develop more effective decision support systems for controlling warehouse processes. They also research fleet sizing and route

planning for trucks delivering goods from warehouses to customer locations.

Several projects are conducted in close cooperation with companies. For example, last year the team worked with a large food distributor to calculate the number of electric trucks the company needed to purchase to comply with the new CO2 reduction regulations of the European Union. Dr. Roodbergen also worked with a company to rethink their warehousing processes to reduce labor requirements while keeping automation at minimal levels.

Dr. Roodbergen aims to develop methods that are generally applicable or provide new insights into commonly occurring situations. There is one question that the team is continuously trying to find better answers

to: *What is the best method for deciding which product should be stored in which location in the warehouse?*

In one project, Dr. Roodbergen helped develop novel mathematical formulas to assess the efficiency of a specific order-picking area. Using these formulas, new layout patterns for the order-picking area were demonstrated that provide a higher labor efficiency.

Read more of Dr. Roodbergen's work at <https://research.rug.nl/en/publications/exact-route-length-formulas-and-a-storage-location-assignment-heu>.



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DR. DONALD W. SCHAFFNER
Rutgers, The State University of New Jersey,
Microbiology Expert


Listeria monocytogenes outbreaks have been linked to dairy foods, smoked seafood, sprouts, and fruits and vegetables. While *L. monocytogenes* causes relatively few outbreaks linked to whole fresh produce, the U.S. Food and Drug Administration Recalls, Market Withdrawals & Safety Alerts webpage lists

more than 60 product recalls between 2017 and 2020 that were associated with produce. Previous research suggests that studies are needed to elucidate critical factors influencing *L. monocytogenes* growth including initial inoculum levels, relative humidity, nutrient profile and availability on the surface and its effect on whole, intact produce. These studies evaluated computer models for predicting the fate of *L. monocytogenes* on 10 whole, intact raw fruits and vegetables and contrasted the effect of wet versus dry inoculation as influenced by temperature and food substrate.

The researchers found that use of a liquid inoculum (versus dry inoculum) resulted in markedly increased *L. monocytogenes* growth rate and growth magnitude on whole produce surfaces. This difference was highly

influenced by temperature with a greater effect seen with more commodities at higher temperatures (22 and 35°C), versus lower temperatures (2 and 12 °C).

The degree to which wet or dry inoculation techniques more realistically mimic contamination conditions throughout the supply chain (e.g., production, harvest, post-harvest, transportation or retail) should be investigated.

Read more of Dr. Schaffner's work at <https://meridian.allenpress.com/jfp/article/84/10/1793/466402/Wet-versus-Dry-Inoculation-Methods-Have-a> and <https://meridian.allenpress.com/jfp/article/84/4/597/448757/ComBase-Models-Are-Valid-for-Predicting-Fate-of>. 



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ASSOCIATION NEWS

NEWS ABOUT GCCA CORE PARTNERS

GCCA is pleased to announce several staff promotions: Brian Lynch as Executive Vice President, Business Development and Executive Director of the Controlled Environment Builders Association (CEBA); James Rogers as Vice President, Business Development; Katie Sastre as Manager, Business Development; and Madison Jaco as Manager, International Programs.

In addition to these promotions, GCCA has also added two new staff members – Lydia Barr has joined GCCA as Coordinator of Education and Programs. Barr served in event, programming and communication roles at the TRSA the Association for Linen, Uniform and Facility Services Industry and the American Society of Human Genetics (ASHG). Ecaterina (Kate) Leonova joins GCCA as Finance Coordinator and will report to GCCA's Chief Financial Officer, Omizak Kadirbergenov.



Over 75 **GCCA** members and industry partners from Canada participated in a recent webinar with the Canadian Ministry of Environment. The focus of the webinar, conducted in partnership with the International Institute of Ammonia Refrigeration (IIAR), was to help members understand and comply with new Canadian environmental regulations impacting the cold chain industry.

The E2 Regulations, 2019 repealed and replaced the previous version of the Regulations and came into force on August 24, 2019. As of that date, any facility in Canada that had anhydrous ammonia at or above 4.5 metric tonnes (~ 2000 USWG), in either the (1) maximum expected quantity (most amount at one time in a calendar year) or (2) capacity of the largest container system, had 90 days (until November 22, 2019) to submit a Notice Regarding Substances Located at a Facility (Schedule 2) to ECCC.

Under the new E2 Regulations, 2019, all Notices must be submitted into the Environmental Emergency Regulations Reporting System available at: www.ec.ss.ec.gc.ca. To view a recording of this webinar visit <https://www.gcca.org/resources/industry-topics/webinar-recordings>.



New dates are announced for the recently postponed WFLO Institutes East and West. **WFLO** Institute West will take place June 2-5, 2022, at the Tempe Mission Palms in Tempe, Arizona, United States and WFLO Institute East will take place June 12-15, 2022, at the Georgia Tech Hotel & Conference Center in Atlanta, Georgia, United States.



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All students who were signed up for the original January/February dates had their registrations transferred to the June dates. If you would like to register for one of these training courses, registration is now open for both events.

The WFLO Institute Latin America will be held in Mexico City, July 11 - 13, 2022. And with the news that Australia is opening back up to international travel, the search is underway for a location for the WFLO Institute Australia, currently scheduled to take place in Melbourne in October.



The **CEBA** Built by the Best Award, acknowledges association members for their expertise and innovation in constructing, renovating and or modernizing controlled environment buildings. The award is open to project teams comprised of contractor/design-build companies, processor/end-user/warehouse/third-party logistics companies and supplier sub-contractors that are association members. Nominations are now being accepted for the 2022 Built by the Best award. Visit the GCCA website to submit a nomination or to get more information. 



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2022 GCCA Education, Training & Networking Events

Make 2022 the year to get back together to expand your knowledge and grow your organization to improve the cold chain industry.

We can't wait to see you.

MARCH

25TH GCCA EUROPEAN COLD CHAIN CONFERENCE & EXPO

23-25 MARCH 2022

Rotterdam, Netherlands | Hilton Rotterdam

Here, delegates gain a better understanding of market trends, industry challenges, business solutions, and technological innovations. The conference also provides ample networking opportunities, enabling attendees to meet and connect with professionals from throughout Europe and around the world.

Audience: Executives and managers from temperature-controlled, third-party logistics companies.



25TH EUROPEAN
COLD CHAIN CONFERENCE
23-25 MARCH 2022
ROTTERDAM, NETHERLANDS

JUNE

58TH WFLO INSTITUTE WEST

2-5 JUNE 2022

Tempe, Arizona, United States | Tempe Mission Palms Hotel at Arizona State University

This event, designed for employees with clear management potential and executives new to the industry, features more than 40 classes in warehouse management and transportation management taught by leading experts in the industry.

Large Company Audience: Warehouse managers, operations managers, warehouse supervisors, shift leads, workers with high potential for management, customer service managers, business development managers, transportation managers, executives new to the industry.

Small to Medium Company Audience: Warehouse managers, operations managers, workers with high potential for management.



WFLO
INSTITUTE
WEST

58TH WFLO INSTITUTE EAST

12-15 JUNE 2022

Atlanta, Georgia, United States | Georgia Tech Hotel & Conference Center

This event, designed for employees with clear management potential and executives new to the industry, features more than 40 classes in warehouse management and transportation management taught by leading experts in the industry.

Large Company Audience: Warehouse managers, operations managers, warehouse supervisors, shift leads, workers with high potential for management, customer service managers, business development managers, transportation managers, executives new to the industry.

Small to Medium Company Audience: Warehouse managers, operations managers, workers with high potential for management.



WFLO
INSTITUTE
EAST

JULY

WFLO INSTITUTE LATIN AMERICA

11-13 JULY 2022

Mexico City, Mexico | Hilton Mexico City Reforma

This event, designed for employees with clear management potential and executives new to the industry, features extensive classes in warehouse management and transportation management taught by leading experts in the industry.

Large Company Audience: Warehouse managers, operations managers, warehouse supervisors, shift leads, workers with high potential for management, customer service managers, business development managers, transportation managers, executives new to the industry.

Small to Medium Company Audience: Warehouse managers, operations managers, workers with high potential for management.



WFLO
INSTITUTE
LATIN AMERICA

AUGUST

GCCA SOUTH AFRICAN COLD CHAIN CONFERENCE

4 AUGUST 2022

Cape Town, South Africa

This event is South Africa's one and only venue bringing together cold store operators, controlled-environment builders, equipment suppliers and service providers to discuss opportunities and innovations of this essential sector. The conference provides leadership experience, knowledge, and exclusive networking with decision makers from across South Africa and beyond, in a relaxed yet professional atmosphere.

Audience: Executives and managers from temperature-controlled, third-party logistics companies.



AUGUST

GCCA GLOBAL POLICY FORUM

9-11 AUGUST 2022

Virtual

The GCCA Global Policy Forum is the premier policy event for businesses engaged in temperature-controlled logistics. Featuring education sessions and keynote presentations focused on rules and regulations that impact the cold chain, the Global Policy Forum is a must attend policy event for multiple regions across the world.

Large Company Audience: Executives with compliance and regulatory responsibility, members of safety and government affairs committees.

Small to Medium Company Audience: Owners, CEOs, executives with compliance and regulatory responsibility, members of safety and government affairs committees.



GCCA GLOBAL POLICY FORUM
AUGUST 9-11, 2022

OCTOBER

131ST IARW-WFLO CONVENTION

8-12 OCTOBER 2022

San Diego, California, United States | Omni La Costa Resort & Spa

This annual gathering for IARW and WFLO features education, networking and business development opportunities for third-party logistics companies and warehouse operators.

Large Company Audience: Owners, CEOs, presidents, executive leadership teams.

Small to Medium Company Audience: Owners, presidents, senior executives.



IARW-WFLO Convention
8-12 October 2022
San Diego, California

GCCA BRAZILIAN COLD CHAIN CONGRESS

20 OCTOBER 2022

Sao Paulo, Brazil

This educational event focuses exclusively on the temperature-controlled logistics industry and features opportunities and solutions for business development.

Audience: High-level executives in temperature-controlled warehousing or logistics.



BRAZILIAN
COLD CHAIN CONGRESS

WFLO INSTITUTE AUSTRALIA

TBD OCTOBER 2022

Melbourne, Australia

This event, designed for employees with clear management potential and executives new to the industry, features more than 40 classes in warehouse management and transportation management taught by leading experts in the industry.

Large Company Audience: Warehouse managers, operations managers, warehouse supervisors, shift leads, workers with high potential for management, customer service managers, business development managers, transportation managers, executives new to the industry.

Small to Medium Company Audience: Warehouse managers, operations managers, workers with high potential for management.



WFLO
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AUSTRALIA

NOVEMBER

42ND CEBA CONFERENCE & EXPO

8-10 NOVEMBER 2022

Amelia Island, Florida United States | Omni Amelia Island Resort

This annual meeting of CEBA members offers education, business development opportunities and networking for company executives managing the building of new cold storage facilities and cold storage builders.

Large Company Audience: Chief engineers, regional facility managers, regional facility maintenance leads, construction engineer managers.

Small to Medium Company Audience: Owners/CEOs who are building or expanding facilities, chief engineers.



42ND CEBA
CONFERENCE & EXPO
AMELIA ISLAND, FL
NOVEMBER 8-10, 2022

GCCA LATIN AMERICAN COLD CHAIN CONGRESS

16-17 NOVEMBER 2022

Bogota, Colombia

This meeting enables GCCA members and leaders in the temperature controlled industry to interact, learn about industry trends and expand their knowledge. The Congress also serves as a discussion forum for issues of interest to multi-regional cold chain industry leaders.

Audience: Senior executives in temperature-controlled warehousing or logistics.



LATIN AMERICAN
COLD CHAIN CONGRESS

Find out more at www.gcca.org/events

Many events are in flux due to COVID-19 and are subject to change. All of our virtual events and Regional Cold Connections will be posted online as they are scheduled. Please check gcca.org for updates.

MEMBER NEWS

NEWS FROM MEMBERS OF GCCA CORE PARTNERS

CONTROLLED ENVIRONMENT SYSTEMS LLC, specializing in the design and construction of cold storage facilities and metrology, pharmaceutical and biotech cleanrooms, announced its acquisition of **COLDROOM SYSTEMS INC**, a provider of thermal envelope and low-temp construction solutions.



JAMISON DOOR COMPANY announced a merger with BMP Europe, S.r.l., a designer and manufacturer of high speed industrial doors headquartered in northern Italy. The headquarters for the combined entity's North American operations will continue to be at Jamison's Hagerstown, Maryland, location. The current Jamison management team will continue to lead the North American operation.

LINEAGE LOGISTICS has bought Van Tuyl Logistics, H&S Coldstores and Frigocare Rotterdam growing Lineage's presence in the Netherlands. Van Tuyl Logistics is a Dutch provider of temperature-controlled logistics with 60 trucks, 90 trailers and 30,000 temperature-controlled pallet spaces. H&S Coldstores, based in Beneden-Leeuwen, Netherlands, has a pan-European network and operates with 250 subcontracted vehicles and more than 1,500 tanks for liquid foodstuffs. Frigocare Rotterdam imports frozen fish mainly from the North Atlantic and Asia. It will add 15,000 pallet positions in its 20,000-square-meter warehouses to Lineage's operations in Rotterdam.



LINEAGE LOGISTICS has acquired **AUSCOLD LOGISTICS PTY LTD**, a South Australian transport and warehousing com-

pany. The acquisition includes a warehouse in Adelaide, Australia, and a fleet of more than 70 GPS tracked, temperature-controlled trucks. The integration will complement Lineage's regional distribution center in Adelaide, providing a total of 32,000 square meters of cold storage capacity and 27,700 pallet positions across the two facilities.



PLM FLEET LLC announced Kevin Brix has joined the sales leadership team as Vice President Sales over Fleet Leasing for the East Region. His responsibilities at PLM Fleet will be to manage refrigerated trailer leasing and cold supply chain management through customized specifications and terms. His



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territory broadly includes the east and north central region of the United States.



RLS LOGISTICS recently welcomed two additional partners to its network of cold chain solution providers: U.S. companies Hutt Trucking and Logistics out of Holland, Michigan, and Performance Cold Storage of Salt Lake City, Utah. The companies will be known as RLS Hutt and RLS Performance.



STELLAR, a design, engineering, construction and mechanical services firm, has published a new e-book about the critical elements of a process safety management (PSM) training program for facilities operating an ammonia refrigeration system. The e-book, “7 Keys to a Compliant PSM Training Program for

Ammonia Refrigeration,” outlines questions a facility’s program should address and questions that trained plant personnel should be able to answer. Topics covered include:

- Safety hazards and health considerations.
- Emergency shutdown procedures.
- Addressing deviations from system operating limits.
- Risks and costs of non-compliance with regulatory standards.

The new e-book is available to download for free on Stellar’s website.



TIPPMANN INNOVATION is working with Investex, Ltd. and the Renna family to build a state-of-the-art cold storage facility in the heart of Central Texas – Triple Temp Cold Storage.


Upon completion, the 125,000-square-foot public refrigerated warehouse will be the first

modern cold storage warehouse in the city of Round Rock, Texas, and will have 25,000 pallet positions and 50-foot clearance heights. Triple Temp Cold Storage will also utilize an environmentally conscious low-charge ammonia system to allow for three temperature zones: a cooler, a freezer, and an ultra-low freezer.



TRINITY LOGISTICS based in Delaware has acquired Arizona-based Team Eagle Logistics. Trinity is a division of **BURRIS LOGISTICS** and provides truckload, less-than-truckload, intermodal, expedited, drayage, international, warehousing and technology solutions.



TWINTEC USA has acquired concrete flooring contractor Kalman Floor Company. 



HIGH-BAY WAREHOUSE FOR DEEP FREEZE INTRALOGISTICS AT ITS BEST

In Burley, Idaho, NewCold celebrated the grand opening of one of the largest frozen storage facilities of its kind. This impressive project includes a high bay warehouse with 90,000 pallet positions supplied by SSI SCHAEFER.

The demand for deep-freeze products continues to grow. As volumes increase, requirements placed upon deep-freeze logistics are getting more complex. SSI SCHAEFER offers flexible, modular, and scalable solutions that optimize storage, picking processes, and profitability within cold storage facilities.

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NEW MEMBERS

NEW MEMBER COMPANIES OF GCCA CORE PARTNERS

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