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Best Practice Blueprint for Cold Chain Transporters

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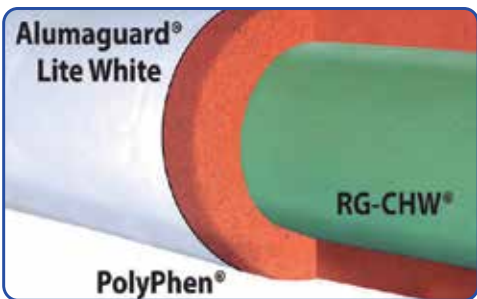
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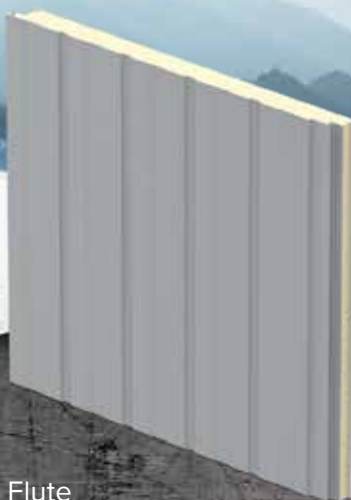


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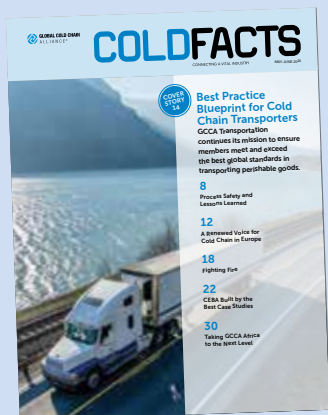


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GCCA's Certified Cold Carrier program turns five and the primary tool to achieving and maintaining compliance, the Cold Chain Transportation Best Practices Guide (BPG), is modified to make it more global in scope. See the article on page 14.



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GCCA Transportation: A New Name and Global Reach

AS WE HEAD INTO A NEW ERA FOR THE ASSOCIATION, GCCA TRANSPORTATION IS POISED TO MAKE A SIGNIFICANT IMPACT AS WE SUPPORT THE INDUSTRY IN BUILDING SUPPLY CHAIN RESILIENCY. OVERALL, THE TRANSPORTATION SECTOR FACES BOTH challenges and opportunities in 2024. It will be essential to stay informed and adapt to the changing landscape.

The transportation industry experienced a turbulent 2023. Last year was marked by a recession due to factors like surplus trucks, intense competition among drivers, inflation, economic instability, plummeting rates and record-high operating costs. By the end of the fourth quarter 2023, a significant number of trucking companies had shut down, highlighting the severity of the situation.

We are anticipating turning the corner soon while refrigerated transport capacity has decreased. Experts agree that the market should rebound in the not-too-distant future, although the exact timing remains uncertain.

We should see a return to balance with volume correlating with an expected robust gross domestic product. As inventory corrections work their way through the system, goods consumption in the economy is expected to return to historic levels. Reducing inventory will be positive for freight, especially in the second half of 2024. The trucking and transportation industry is projected to experience another slow but steady turnaround in 2024. Supply and freight demand are leveling out, and advancements in shipping technology are shaping a new sense of normalcy.

The need for reliable cold chain logistics continues to rise, driven by perishable goods transportation. Advancements in refrigeration systems, including electric alternatives to traditional diesel-powered systems, contribute to market expansion.

The push toward zero-emission (ZE) solutions in refrigerated transport is driven by regulations and environmental concerns led by the California Air Resource Board (CARB) in the United States and the European Commission in Europe by imposing new regula-

tions on emissions on transport vehicles. These regulations include ultra-low-emission requirements and zero-emission requirements as early as 2025.

CARB is leading the way in the United States, but other states are expected to follow suit soon. One of the challenges of EVs is they require significant energy, leading to large, heavy batteries and frequent charging needs. Innovative advancements have been developed in ZE trailers to repurpose energy from coasting and braking to provide auxiliary power and propulsion assistance, reducing emissions and noise. The deployment of zero-emission TRU that uses power generated in-wheel electric motor application are just a few of the recent advancements. In short, tightening regulations, environmental concerns and innovative technologies are driving the adoption of ZE solutions in refrigerated transport, which is here to stay, and we should keep exploring these solutions as the technology evolves.

GCCA Transportation is excited to relaunch the next iteration of the Cold Chain Best Practices Guide that has been updated and revised to become more global in its reach and relevance. See the article on page 14.

To be clear, a best practice is a best practice and if expressed correctly can be applied universally. An important initiative for the association is to provide value to the cold chain industry and grow the global membership. We continue our work on collaborative efforts with policymakers, regulators, and other cold chain stakeholders to advocate for refrigerated transportation.

The GCCA is a unique organization where the cold supply chain comes to collaborate, and where its members impact globally to deliver safe temperature-controlled goods. 🌐



DON DURM
CHAIRMAN
GCCA TRANSPORTATION

COLDFACTS

COLD FACTS magazine is published every other month by the **Global Cold Chain Alliance (GCCA)**, an organization that unites partners to be innovative leaders in the temperature-controlled warehousing, transportation and logistics industry.



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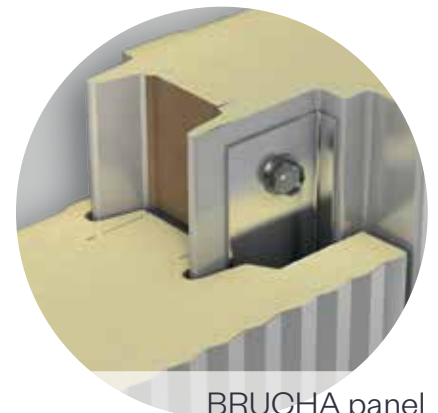
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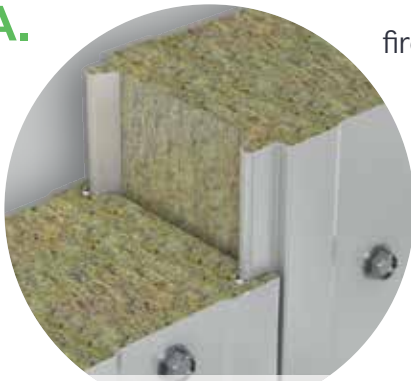
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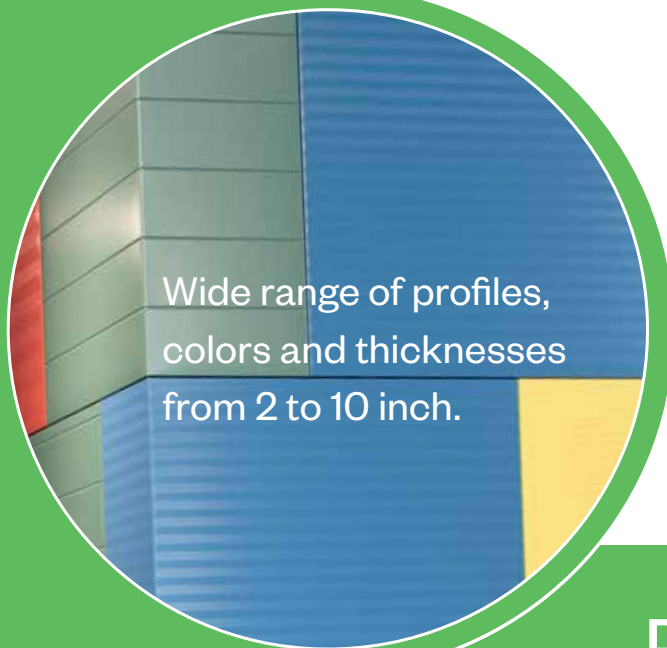
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PROCESS SAFETY AND LESSONS LEARNED

The U.S. Environmental Protection Agency issues 'Final Rule' for United States-based cold storage facilities that could cause chemical leaks or other hazards in the event of an accident.

By Lowell Randel

The U. S. Environmental Protection Agency (EPA) has published the Safer Communities by Chemical Accident Prevention Final Rule that makes changes to the agency's Risk Management Program (RMP). The move on March 11 is the latest in a series of rulemakings related to RMP over the last 10 years and reinstates several requirements similar to those mandated by the Obama Administration and later rescinded by the Trump Administration.

The Biden Administration believes the final rule will help further protect human health and the environment from chemical hazards through advancement of process safety based on lessons learned. The RMP changes seek to improve chemical process safety; assist in

planning, preparedness and response to RMP-reportable accidents; and improve public awareness of chemical hazards at regulated sources. Many of the changes return to policies enacted during the Obama Administration, but there are also new provisions that

address Biden priorities related to climate change and environmental justice.

Here is a summary of major provisions included in the Final Rule:

Natural hazards and power loss: Related to climate change, the Final Rule adds amplifying regulatory text to emphasize that natural hazards (including those that result from climate change) and loss of power are among the hazards that must be addressed in Program 2 hazard reviews and Program 3 process hazard analyses. The rule also requires back-up power for release monitoring equipment.

Facility siting: In the rule, EPA expresses concern that disadvantaged populations are disproportionately exposed to RMP-regulated facilities. To address this concern, the rule emphasizes that facility siting should be addressed in hazard reviews and explicitly define the facility siting requirement for Pro-

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gram 2 hazard reviews and Program 3 process hazard analyses. Facilities must provide a justification in the Risk Management Plan when facility siting hazard recommendations are not adopted.

Third-party compliance audits: Third-party audits have been a major topic in recent RMP rulemakings. Under this rule, when a facility experiences an RMP reportable accident, its next scheduled compliance audit must be a third-party audit. Third-party audits must meet independence and competence requirements. A third-party audit can also be triggered when an implementing agency (EPA or a state equivalent) requires a third-party audit due to conditions at the stationary source that could lead to an accidental release of a regulated substance, or when a previous third-party audit failed to meet the competency or independence criteria. If an implementing agency makes a preliminary determination that a third-party audit is necessary, written notice will be provided to the facility, and there is an appeals process to challenge the determination.

Root cause analysis: Requires a formal root cause analysis incident investigation when facilities have had an RMP-reportable accident. Report shall be completed within 12 months of the incident and include factors that contributed to the incident including the initiating event, direct and indirect contributing factors and root causes.

Employee participation: Requires employee participation in resolving process hazard analyses, compliance audit and incident investigation recommendations and findings. Outlines stop-work procedures in Program 3 employee participation plans. Requires Program 2 and Program 3 employee participation plans to include opportunities for employees to anonymously report RMP-reportable accidents or other related RMP non-compliance issues. Requires training on employee participation plans.

Community notification of RMP accidents: Requires nonresponding RMP facilities to develop procedures for informing the public about accidental releases. Requires release notification data be provided to local responders. Also requires partnering with local responders to ensure a community notification system is in place for notification of RMP-reportable accidents.

"GCCA encourages members with RMP-regulated facilities to familiarize themselves with the Final Rule and prepare for compliance with the new provisions."

Emergency response exercises: Requires a 10-year frequency for field exercises unless local responders indicate that frequency is infeasible. Requires mandatory scope and reporting requirements for emergency response exercises.

Enhanced Information Availability: New requirements for the facility to provide chemical hazard information upon request to the public living, working or spending significant time within six miles of the facility, in at least two common languages in the community. Under the previous regulation, facilities were not required to provide this information.

Safer technologies and alternatives analysis: Safer technologies requirements apply only to chemical and petroleum manufacturers (NAICS 324 and 325). Requires an STAA evaluation for all Program 3 processes. Facility must conduct a practicability assessment of inherently safer technologies and designs (IST/ISD) considered for processes (a) in Program 3 NAICS code 324 and 325 within one mile of another Program 3 NAICS code 324 or 325 process, (b) with hydrofluoric acid alkylation processes classified under NAICS 324, (c) having one RMP accident since the facility's most recent process hazard analysis. Requires the implementation of at least one passive measure at the facility, or IST/ISD, or a combination of active and procedural measures equivalent to or greater than the risk reduction of a passive measure for the same facilities required to conduct the practicability assessment.

Other Provisions/Clarifications:

- Program 3 process safety information should be kept up to date
- Program 2 and Program 3 requirements consistent for recognized and generally accepted good engineering practices (RAGAGEP)

- Hot work permits should be retained for three years
- RAGAGEP should be reviewed in process hazard analyses to determine gaps in safety.

Compliance Dates

The compliance date for most provisions, including: STAA, incident investigation root cause analysis, third-party compliance audit, employee participation, emergency response public notification, exercise evaluation reports and information availability provisions, is three years after the effective date of May 10, 2024. The compliance date for revised emergency response field exercise frequency provision is March 15, 2027, or within 10 years of the date of an emergency response field exercise conducted between March 15, 2017, and August 31, 2022. Updates and resubmission of risk management plans with new and revised data elements, four years after the effective date of the final rule.

GCCA encourages members with RMP-regulated facilities to familiarize themselves with the Final Rule and prepare for compliance with the new provisions. Please contact Lowell Randel (lrandel@gcca.org) if you have questions or would like additional information about the Final Rule. 📧

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A RENEWED VOICE FOR COLD CHAIN IN EUROPE

GCCA and others issue call to action to policy makers to support industry resilience.

By Shane Brennan

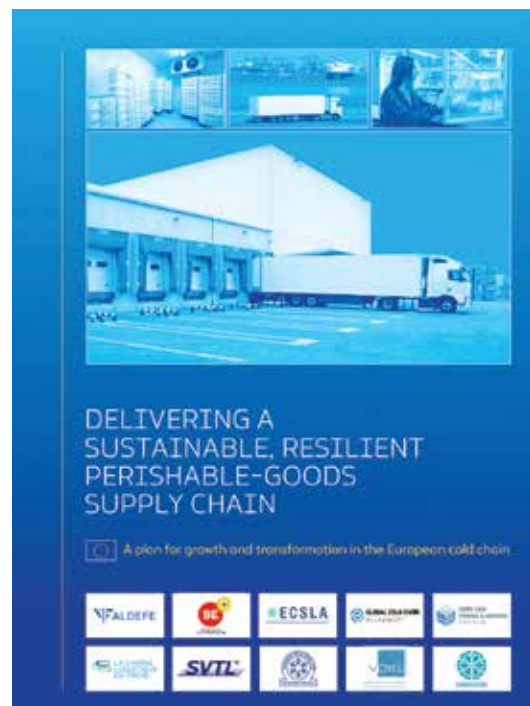
2024 has been billed as the year of elections with critical polls taking place worldwide. That is certainly the case across Europe, and the European parliamentary elections in June will have significant implications for the future of policy in a range of areas that affect the cold chain.

In advance of this, GCCA has come together with nine other organizations to issue a call to action that sets out how the cold chain will support Europe's goals, and what it needs from decision makers to make this happen.

Speaking at the launch, which happened alongside the GCCA European Conference in Brussels on 11 April, Julie Hanson, Europe Director at GCCA, says, "The cold chain is vital to our European economy and way of life. In recent years, we have proved just how resilient our sector is. Storage and transportation professionals fed Europe

during the pandemic and the ensuing energy crisis. During this time, policy-makers have realized they can't take supply chains for granted. Our call to action shows how they can support future success and resilience in our perishable goods supply chains."

This initiative, coordinated by GCCA, is part of a strategic investment made by the GCCA board to increase advocacy representation for the cold chain in key economic regions. Since mid-2023, GCCA has retained specialist advisors in Brussels who provide intelligent monitoring and



CALL TO ACTION

We urge all candidates, EU Commission team and national representatives in the European Council to acknowledge the vital role of cold chain businesses in the European economy and society, and collaborate with us to ensure positive outcomes for the future of our supply chains. The 4-Point Plan:

1. Cold Chain Is Vital to a Resilient and Sustainable Food System

We call on the EU to prioritize food security in the farm to fork strategy and recognize the importance of clear regulations and incentives for businesses offering storage and transportation capacity.

2. Cold Chain Will Thrive in a Decarbonized European Energy System

Cold chains need secure, consistent, and affordable energy. The recent energy crisis exposed vulnerabilities in our system. As Europe decarbonizes, it must prioritize food and pharma supply chain infrastructure. To do this, we can incentivize cold chain operators to invest in renewable energy and smart grid integration.

3. Cold Chain Enables European Trade And Economic Growth

Cold chain businesses must be consulted as the EU develops future trade policies to ensure that food security and resilience are at the heart of future trade policies. It must prioritize the capacity and quality of infrastructure for transporting and storing food and pharmaceuticals.

4. Cold Chain Provides Jobs for Today and Tomorrow

Logistics is a promising career path that Europe needs to recognize. Emerging innovations can bring productivity and safety benefits, and we must prepare people with the necessary skills for logistics jobs of the future.

advice on how to best identify the decision makers that matter most.

Alongside the launch of the call to action, GCCA held meetings with key European Commission officials in the Trade, Energy and Transport Ministries. As well as appearing before an important meeting of politicians and stakeholders in the European Parliament, having published the call to action, GCCA will be seeking further meetings through the election period and once the new Parliament and Commission are in place.

To follow GCCA's European advocacy work, sign up to our monthly briefing by emailing sbrennan@gcca.org with the word SUBSCRIBE in the subject line. 📧

SHANE BRENNAN is Senior Vice President for Global Communications at GCCA.

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BEST PRACTICE BLUEPRINT FOR COLD CHAIN TRANSPORTERS

GCCA Transportation continues its mission to ensure members meet and exceed the best global standards in transporting perishable goods.

For five years, GCCA's Certified Cold Carrier program has helped transportation companies comply with food safety laws. The bedrock of the Certified Cold Carrier, and the primary tool to achieving and maintaining compliance, is the Cold Chain Transportation Best Practices Guide (BPG).



The International Refrigerated Transportation Association (IRTA), now GCCA Transportation, worked with cold chain industry professionals and other stakeholders to develop the original BPG, which Cold Carrier Certification program participants agree to use. “What was accomplished was a comprehensive guide that all of industry could agree were the best practices,” says Don Durm, Vice President of Strategic Customer Solutions at PLM Fleet and Chairman of GCCA Transportation.

The BPG spells out industry best practices to help shippers, loaders, carriers by motor or rail vehicle and receivers involved in transporting human and animal food to use documented sanitary practices to ensure the safety of that food.

One of the key drivers in the development of the original BPG was that cold chain stakeholders needed to address new requirements laid down in the United States Federal Sanitary Modernization Act (FSMA). According to Durm, “The FDA [U.S. Food and Drug Administration] specifically stated 33 times within the rule that it will rely on ‘industry best practices’ for enforcement,” he says. “All the stakeholders in the cold chain – warehouse, logistics, transportation, equipment manufacturers and the scientific community – came together and agreed on what the best practices should be.”

Durm explains the GCCA, as the place where cold chain stakeholders go to meet and collaborate, was in the best position to drive the discussion of cold chain best practices.

First published in 2016 – it was time for the BPG to be updated.

Members of GCCA Transportation volunteered to review the BPG and identify any modifications, unclear items or missing subject areas. Since the BPG is the foundation reference for the Certified Cold Carrier program, the Transportation Board of Directors also considered how any modifications affect the Cold Carrier Certification criteria.

The GCCA Transportation members that participated in the BPG review group are PLM Fleet, J.B. Hunt, United States Cold Storage Transport, FLGO Freight and Midwest Refrigerated Services, Inc.

Their efforts on modifying the BPG are now complete.

A few of those members share their thoughts here on the modifications to the BPG, the review group experience and the impact of being a Certified Cold Carrier.

Global Scope

“A best practice is a best practice and if expressed correctly can be applied universally,” says Don Durm, PLM Fleet, addressing the modifications to the BPG. “Initially, the key driver was to establish a benchmark for industry standard FSMA rules, and we provided guidance to meet regulatory compliance, but now we needed to make the BPG more global in scope.”

Durm notes the BPG documents may have been confusing audiences outside of the U.S. regulatory environment.

“Simplification,” is why the BPG was modified, says Wib Zook, Transport Compliance Consultant at United States Cold Storage. “It merged GCCA, IRTA and IARW to better assist and be inclusive of shippers, loaders, carriers and receivers in helping all to better understand the value of consistent best practices of handling and food safety. And hopefully it will encourage other carriers to become active partners with these initiatives.”

Addressing Challenges

“The transportation industry is often viewed from a grand scale – big equipment, large quantities, long hauls,” says Lauren Wilson, Senior Manager of Food Safety, Health Science and Animal Welfare at J.B. Hunt. “While those are certainly important, it’s also essential that we pay close attention to the small details so they aren’t overlooked in the mix, especially from a safety perspective. And safety and efficiency go hand-in-hand.”

Wilson says whether it’s something as small as a temperature reading or the numbers on a bill of lading, the details can make a significant impact on product quality and safety.

“The Cold Chain Transportation Best Practices go a long way in this regard, because the shippers are made more aware of the significance of these details,” Wilson says. “If a trailer arrives and it doesn’t meet all sanitary standards, the shipper will be able to reject it before contamination could ever occur.”

Zook points out the temperature-controlled

transportation market is extremely competitive. “Being best in class requires proven processes and credibility. The Certified Cold Carrier program provides exactly that with the appropriate training for staff and drivers on how to stay current with the best practices in food safety management.”

Durm says one of the biggest challenges was the lack of standardization of best practices across trading partners, or even within companies, that could be relied on.

“It was my experience working all along the cold chain that everyone had an operational best practice and they were all different,” Durm says. “This created potential hazards or gaps during handoffs, both internally and externally between warehouse, to picker, to loader, to transport, to the receiver.”

“Another common challenge we see is that cold chain stakeholders may not be familiar with refrigerated transport equipment and will put requirements on the load that yield no benefit to product integrity and add expense to transport that can’t be recaptured,” says Durm. “The Cold Chain Transportation Best Practices become a starting point to have a conversation that is critical in the execution of ensuring safe, efficient and compliant transportation.”

Advantages to Certification

“The Certified Cold Carrier program provides a set of standards that give companies like J.B. Hunt a way to measure success, evaluate operational performance and ensure the safety of its deliveries for customers,” says Wilson. “Our customers, on the other hand, have a way to recognize that success and feel safe, knowing that their provider is meeting all sanitary standards in their deliveries.”

Zook says there are a number of positives for United States Cold Storage Transport in partnering with the Certified Cold Carrier program, and one is that certification provides visibility. “As our trucks travel the many highways, the Certified Cold Carrier logos are a visible means of conveying our commitment to food safety practices.”

Certification creates a sense of pride and is far more than just a means of keeping United States Cold Storage current with industry standards, says Zook. “Our associate drivers

take pride in responding to questions such as what is the Certified Cold Carrier logo, and being an advocate for these initiatives. They're proud of the logos on their trucks," he says. "It reinforces our commitment to 'Best in Cold' and fuels the passion that motivates our drivers."

Zook adds Certified Cold Carrier initiatives and processes assist company personnel to be better prepared for both internal and external audits.

Regulators provide significant flexibility to operators to ensure that they are implementing the best procedures for the circumstances and purposes under which they operate, notes Durm. "However, I know from experience that businesses appreciate a strong, clear reference point to benchmark what constitutes industry best practices and that is what the Certified Cold Carrier program delivers," he says. "The added benefit to the day-to-day business execution in implementing the best practices will yield operational efficiency, saving time and money in a highly competitive environment."

Driving Culture and Creating Trust

"Going through the Certified Cold Carrier program helps align companies and personnel with the cold chain transportation best practices that will help drive a food safety culture within the company," says Durm. "Safety is the single most crucial responsibility of businesses charged with transporting a nation's food, and the Certified Cold Carrier plays a pivotal role in ensuring safe, efficient and compliant transportation within the cold chain industry."

Durm adds, "And consumers benefit from a highly professional, experienced, and well-regulated food supply chain."

Wilson says one of the company's brand foundations is people you trust, and that trust was developed over decades. "Our safety culture is very much a part of why our brand remains strong and trustworthy," she says. "We keep our safety culture sharp and current through regular training that emphasizes not just the importance of our protocols, but the why behind them."

She says each person plays a vital role, and the company's culture emphasizes they understand the value of their contribution to the overall process. "Best practices become

Top Advice From the Cold Chain Transportation Best Practices Guide

GET IT IN WRITING	KEEP IT COOL
Agree IN WRITING the expectations of the customer/shipper before taking on a job. This includes specifying expectations for: <ul style="list-style-type: none">• Packaging• Stowage• Temperature management• Sanitation, and• Handling Keep RECORDS and be OPEN to inspection	Leave NOTHING TO CHANCE when managing temperature on collection, delivery and whilst on the move – ensure: <ul style="list-style-type: none">• Equipment is to the necessary standard and working correctly• Vehicles are pre-cooled before loading• Air circulation is possible when loaded
USE TECHNOLOGY, BUT HAVE BACK-UPS	FOCUS ON RISKS
Technology provides significant time and cost savings and ensures transparency at a level not possible 20 years ago – wherever possible, invest in real-time: <ul style="list-style-type: none">• Load tracking• Temperature monitoring• Record keeping BUT do not use technology as a substitute for visual checks, driver use training because systems fail sometimes	Food safety is based on awareness and control of risks. Stay ahead of the most prominent risks: <ul style="list-style-type: none">• Cross contamination• Allergen exposure• Food crimes (like fraud or malicious contamination) Join, participate and learn with fellow practitioners in the GCCA network

second nature in a culture where each person feels valued, and violations are met with a 'not on my watch' mindset."

"The culture at United States Cold Storage is driven by the motto 'Best in Cold' and represents who we are," says Zook. "Understanding what our customers need and how the best carriers operate help drive our initiatives, and our Customer and Carrier Advisory Boards help provide valuable feedback and critique to strengthen our trusted network. This supports our mission to stay well aligned with the Certified Cold Carrier best practices and share the success with our customers."

The Reviewer Experience

Zook says the experience of being an instrumental part of the group that revised the BPG was eye opening, educational and an opportunity to network. Also, he says he grasped a better understanding of the values

and benefits of temperature-controlled food handling and safety in a competitive industry. "I've become an advocate for and promoter of these Certified Cold Carrier best practices initiatives."

"It has been my honor to have been a part of this document since its inception and contribute to the Best Practices Guide, which will enhance the brand and image of carriers globally," says Durm. "The majority of refrigerated motor carrier capacity is fragmented across thousands of logistic companies, and the best practices provide a level playing field for everyone. The Certified Cold Carrier designation allows carriers to differentiate themselves among their peers."

"Because J.B. Hunt was one of the first certified cold carriers in the program, I was afforded an early opportunity to take our own program to the next level," says Wilson. "I learned so much from this collaboration

and came away from the experience feeling energized.”

Wilson says it's great to see the Cold Carrier Best Practices Guide expand from a limited set of best practices to ones that are more robust and widely applicable. “Being able to play a part in that expansion is a true source of pride for me personally.”

ALEXANDRA WALSH is a Senior Publishing Consultant with Association Vision and Editor-in-Chief of COLD FACTS.

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10 Benefits of Being a Certified Cold Carrier

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5. Is accepted by shippers that understand the high standards that certification from GCCA brings.
6. Provides documented use of the refrigerated transportation best practices that reduce food waste, improve operational fleet efficiency and save on fuel consumption.
7. Helps companies prepare for audits.
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Today, cold storage operators have more options to manage the risk of fire – conventional sprinkler systems, linear heat detection and newer oxygen reduction systems. (Photo courtesy of Fisher Construction.)

FIGHTING FIRE

Automated warehouses have unique fire risks. Experts weigh in on options to manage exposure.

By Gina Veazey

Few threats pose a greater risk than fire. Beyond costly property damage, fire can disrupt business operations and imperil employees and others. Only cyber incidents and natural catastrophes were greater concerns for the global respondents to the 2024 Allianz Risk Barometer.

Recovery from fire can take longer than from many other threats. Rebuilding a damaged facility and restoring operations to full capacity can take years. In fact, Allianz says fire is the most frequent driver of costly business interruption insurance claims, accounting for more than a third of claims by value.

New Risks From New Tools

Electrification and widespread use of lithium-ion batteries have driven an increased risk of fire in recent years, Allianz reports. Cold storage industry fire experts agree, noting that operators are leaning into technology and automation with stacker

cranes and automated storage retrieval systems (ASRS). Many also use lithium-ion battery-driven shuttle systems.

These automated systems may also expose cold storage operators to greater threat of fire. Both stacker cranes and ASRS use sensors to automate storage and retrieval and are connected through a vast and complex network of wires and cables to the warehouse management system (WMS). Shuttle systems also integrate with the WMS and leverage a degree of automation.

“Think of a warehouse that is just a dark room. If you walk in, manually put in a pallet without any ignition threat or source, there’s no fire risk,” says Frank Siedler,

Global Account Director, Fire Protection for Cold Chain Logistics at WAGNER Fire Safety Consulting based in Germany. “But now, with all this new technology, there is a threat of fire in ASRS high bay cold storage. Think about lithium-ion battery-driven shuttle systems. People forget the cold storage atmosphere is very dry, which has an additional catalyst effect.”

Approaches to Manage Fire Risk

Although fire risk cannot be fully eliminated, it is well understood and can be closely managed.

Today, cold storage operators have more options to manage the risk of fire – conventional sprinkler systems, linear heat detection and newer oxygen reduction systems (ORS or low-O).

The use of water to fight fire is not a new concept. Neither is the idea of an early warning system to detect temperature spikes. But the emergence of high-stack cold storage warehouses and ORS, as well as ongoing

innovations by sprinkler and fire detection providers, have expanded the conversation about fire protection.

“The key to mitigating risk is to understand the nature of the hazard and to utilize the correct detection and suppression system for the hazard,” says Brooke Fishback, Director of International Sales at Protectowire FireSystems. “Cold chain operators should consult with fire industry professionals – fire protection engineers and manufacturers – in order to understand the options and to ensure the best systems are selected.”

Owners should make informed decisions about the type of protection used in their facilities. “There is a balancing act between cost and efficacy of the selected system,” says Glenn Warga, National Sales/Project Management at Ahern in Wisconsin, United States. “If the facility is an unoccupied ‘dark ASRS,’ then low-O is an alternative that can offer benefits of eliminating water-based systems that are susceptible to false discharges in freezers, which is never a good thing. However, owners should also consider soft costs of the selected systems, such as maintenance and energy costs.”

In a manually operated facility, the risk of a false sprinkler discharge is mitigated with a double interlock preaction system. This prevents false discharges in the event an operator inadvertently hits a sprinkler or the wire since two devices are required to discharge water to the systems.

In addition to the risk of a false sprinkler discharge, densely packed ASRS warehouses limit the space available for sprinkler protection, piping, and other protection devices. Warga says the combination of height and the densely packed storage arrays present a challenge for operators and their CEBA partners.

Sprinkler systems often require more space between tiers and an elevation gain over multiple tiers. When sprinklers are the chosen protection method, flue spaces are necessary to allow fire to move up to the ceiling and water to discharge down into the flue. The flue space requirements will add space to the overall design. This is a required space between pallet loads and can result in the need for several additional feet of vertical and horizontal space.

Sprinkler systems are continually advancing to minimize these limitations, says Warga. Ceiling-only sprinkler systems, which do not require in-rack sprinklers, are currently capable of providing protection up to 55 feet. Above that, Warga says the standards have been evolving to stretch the distance between sprinkler levels.

This is where ORS fills a gap. “I don’t see low-ox fighting sprinklers,” says Siedler. “I think where sprinklers get to a limit, we can bring in oxygen reduction to have our customers get sufficient fire protection. So, it’s not a battle. Oxygen reduction has a few requirements, which are easy to fulfill in a cold storage, but it’s still a niche.”

Indeed, the constraints of sprinkler systems often lead cold storage operators and their CEBA contractors to look at an ORS as an option, or to augment a fire protection system. But these systems require space, too, and incur ongoing costs.

Entertaining the low-O conversation requires answering tough questions about the amount of space required for equipment and its cost, as well as the ongoing costs of energy to operate the equipment.

An ORS works by adjusting the composition of ambient air. Typically, the air we breathe is about 21% oxygen (O_2) by volume, a level that exceeds the ignition threshold of many materials. Cardboard boxes, for example, are combustible at ambient temperature in an atmosphere of 15% O_2 by volume or greater. In this use case, an oxygen reduction system could be set up according to ISO standard to generate and pump nitrogen into the air as needed to reduce and maintain the proportion of O_2 at a level below the ignition threshold, plus a safety margin, such as 13.9% by volume.

These systems require a machine room with nitrogen generators, control units and electrical cabinets. Piping to disperse nitrogen throughout the facility and sensors to continually detect O_2 levels are also needed. The system is paired with fire detection equipment and an organizational hazard management program.

Another option is linear heat detection. It uses a unique cable that detects a specific temperature anywhere along its length, and

The Fire Triangle

“People think fires are not possible because of the cold, which is unfortunately not true,” notes Siedler.



Although heat does play a role in fire, cold does not. The so-called “fire triangle,” which illustrates the elements needed to ignite a fire, includes:

- Fuel, or a combustible material, to feed the fire
- A source of combustion, like an electrical spark, capable of raising the heat of combustible material beyond its ignition temperature
- Oxygen (O_2), readily available in ambient air, to sustain combustion

it activates when that temperature is reached. Fishback says, “In cold storage warehouses and freezer applications, linear heat detection is typically used as the pre-action on single- and double-interlock sprinkler systems.”

Fire detection systems have historically been required to mitigate fire risk, and these technologies are evolving too. For example, environmental monitoring sensors, thermal cameras and fiber optic systems are available to identify overheating conditions and other anomalies, and to prevent failures and fires before they occur.

“This is especially important as cold storage facilities update their existing technologies,” says Fishback. “For example, automated warehouses are increasingly turning to rooftop solar panels to supply power to their facility. He notes these are a new and distinct fire hazard and must be monitored.

“Selecting and installing a system designed to detect over-heating and fire conditions in

rooftop solar panels needs to be a part of the discussion at the outset when solar panels are being considered,” Fishback advises.

Combination Approach

Demonstrating how these partners often work together, Ahern and Wagner are currently working with Fisher Construction to complete a NewCold warehouse in the U.S. state of Indiana. When complete, the cold storage facility will be the largest in North America, and according to NewCold, it will have a total of 200,000 pallet positions.

“We believe this facility sets a new benchmark for our industry,” says Bram Hage, NewCold Founder and CEO. “We are building a more resilient, reliable and sustainable food supply chain to better serve our customers.”

In the project’s first phase, a 43-meter-high facility with 100,700 pallet positions and nine automated stacker cranes, Fisher and NewCold chose to leverage the Wagner ORS. This phase has been complete and in operation since 2023.

“It’s a fully automated system,” says Chris Wright of Fisher Construction Group. “You don’t have any individuals working in the high rise, it’s all cranes running back and forth 24 hours a day.”

Construction of the second phase of the facility has just begun and will also use an oxygen reduction system.

“There are different applications for different environments, and it doesn’t mean either one of them is right or wrong in those respective areas,” Wright says, “but the combination and the approach to use both of these teams has allowed us to construct larger buildings faster, for a lower cost to the owner and to continue to provide the fire protection that keeps everybody safe.”

“There’s a ‘we need to do this right’ attitude,” says Warga. “Everybody is as transparent as possible and, quite honestly, you need to be when you’re embarking on something that is newer and innovative.”

Fisher’s role is not only significant from a building construction point of view, but also from a design perspective. “They’re a design-build general contractor, so they have processes to bring in design partners early on to make sure that everything is constructed appropriately,” says Warga. “When Fisher brings in a team, they’re very orchestrated. They bring everything together and lead the charge, especially from a design perspective,



Ceiling-only sprinkler systems, which do not require in-rack sprinklers, are currently capable of providing protection up to 55 feet. (Photo courtesy of Fisher Construction.)

and then move into a construction sequence.”

“We are all under the umbrella of the Global Cold Chain Alliance, and it’s good to work with people who share the same spirit,” Siedler says. “I’m happy that we are on board with a customer that is a GCCA member, NewCold, and with Fisher Construction, a big player in general contracting with a clear mindset on how to execute that kind of project to make it easy for the customer.

Add Ahern, a rock-solid U.S. fire protection company in the United States, and it is just the perfect match.”

The project fell under the permitting authority of the U.S. Department of Homeland Security. ☞

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Oxygen Reduction Systems Acceptance

ORS suffers from its own success. Burning buildings make headlines. Buildings that are not burning just don’t.

Nonetheless, ORS has gained significant traction with standards for its use in many countries. In some parts of the world, like Germany and its neighboring countries, ORS is fully embraced by authorities and insurers.

In other countries, like in the United States, acceptance is evolving quickly. Siedler says the U.S.-based National Fire Protection Association (NFPA) is currently exploring ORS and the need for a standard in the United States.

Insurers have also begun to embrace low-O systems. Siedler says FM Global, for example, has its own design standard

and refers to low-O systems as a “viable alternative” to sprinklers.

Other insurers continue to view ORS as a useful addition to conventional sprinkler systems, rather than as a viable option to them. A 2020 Allianz technical bulletin, for example, says it “does not typically consider a standalone [oxygen reduction system] as an alternative solution to active or passive fire protection systems.” However, Allianz recognizes the value of ORS in spaces, such as cold storage specifically, that are normally unoccupied. Its technical bulletin outlines key design and technical requirements.



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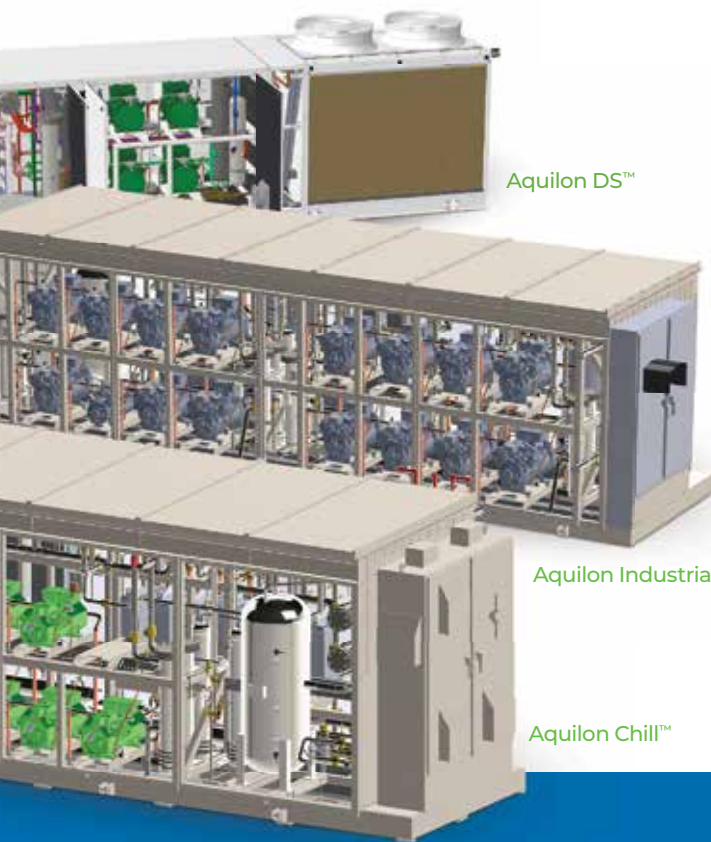
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CASE STUDIES

By Keith Loria

FCL BUILDERS CREATES FLEXIBLE COLD STORAGE

FCL Builders was enlisted by Cold Summit Development to create a flexible cold storage facility – Cold Summit Chicago I – a 212,375 square-foot, multi-tenant cold storage facility.

Cold Summit Development was brought to FCL through PRG, a capital partner with which FCL has a long-standing relationship.

Great Partners

“Cold Summit Development was looking for an honest partner to not only build in an efficient manner but also deliver a building that would stand the test of time as a long-term asset that required minimal maintenance,” says Derek Allbright, Project Executive, National Cold Storage at FCL. “I was lucky enough to be the project manager for their Chicago facility, and in our initial interview, we knew that they knew exactly what they wanted built. Their construction group brought a wealth of experience and knowledge to the project.”

Cold Summit Chicago I is situated on an 11.2-acre site that includes 7,000 square feet of office space and fully convertible temperature-controlled suites. The facility was designed to accommodate two tenants and includes four initial cooler/freezer convertible rooms capable of -20 to 55 degrees Fahrenheit with future planning for up to 10 separate cooler/freezer convertible rooms, offering maximum flexibility.

It also houses a battery-charging room with scrubber dump, future battery charging points, electrical gear, and three manual tap boxes ensuring operational continuity



(Photo courtesy of FCL Builders.)

during outages.

Allbright says they started the project in September 2021, poured foundations through January, stood precast in February and began steel erection in March. The building was substantially complete by October 2022. “In Spring 2023, a tenant moved into the building resulting in a minor tenant finish-out due to the master planning that was put in place from day one with the Cold Summit Development team,” he says.

Challenges of Course

There were challenges of course, Allbright says. The FCL team had to work around

multiple easements during construction as it was a fairly urban landlocked site. Real estate was at an all-time premium and strategic placement of material was paramount to the project’s success.

“At the time, material escalations were still very prevalent; we were able to avoid overages with early orders and long-standing relationships,” Allbright says. “Cold Summit’s motto is ‘Love, Listen, Communicate.’ We had a great team and enjoyed communicating with like-minded builders who ultimately became friends in the process.”



(Photos courtesy of FCL Builders.)

Sustainable Measures

When it comes to sustainability, the project's proximity to major intermodal hubs such as a CSX rail yard within a mile, along with major highways and airports nearby, results in expedited logistics and reduced fuel consumption, according to Allbright.

"In addition, the building's envelope with oversized dock doors allows refrigerated trailers to back up to a dock position and open the doors into a refrigerated cold dock, maintaining what we call the cold chain, adds to the building's efficiency," Allbright says. "The building is refrigerated with a state-of-the-art, low-charge ammonia system with roof-mounted refrigeration equipment maximizing the useable interior cubic footage along with ease of maintenance without disturbing operations."

The roof structure accounted for loading and installation of future solar panels to enhance the buildings overall efficiency. In

addition, the site included the utilization of four underground storm water detention basins called storm traps. This allowed for additional parking to be placed over the storm traps, maximizing the sites useable space.

Fire Safety

The entire facility is fortified with a Quell (k-17 head) fire protection system designed by Shambaugh & Sons that includes a 200,000-gallon bolted tank and a 2,500 GMP diesel fire pump in an on-site pump house for enhanced safety measures.

"The Quell system is critical to the safe and functional operation of a facility like Cold Summit," Allbright says. He adds that it allows storage in buildings up to 55-feet high, which is 10 feet higher than most sprinkler systems allow. Quell is a dry system leading from the exterior riser room into the building, minimizing the risk of operational inconveniences with in-rack sprinklers. This building is fed

from a large exterior fire water tank with a 2,500 gpm diesel fire pump.

"Shambaugh was a great partner to ensure this system was designed and installed with precision," Allbright says.

The development encompasses a multifaceted design tailored for cold storage needs, showcasing efficient space usage, strategic partnerships and advanced systems integration.

Allbright says the response upon delivery was, "a job well done," and relationships that have since grown to friendships.

"Together, we have developed other pursuits and projects that support our teams moving forward," Allbright said. "The fit and finish of the building, coupled with the decades of master planning that went into the design, allowed for minimal 'upfit' with tenant move-in and allowed them to be operational in an effective, efficient manner."





SUBMIT YOUR 2024 NOMINATIONS BEFORE AUGUST 30

The Controlled Environment Building Association (CEBA) has opened the process for members to submit nominations for construction projects to compete for the prestigious Built by the Best Award in 2024.

In its ninth year, the award is a unique opportunity to celebrate the dedication, quality and innovation of the controlled environment construction community worldwide.

Find out all the details and download the application pack at <https://www.gcca.org/about/awards/built-by-the-best-award/>

Does My Project Qualify?

- ✓ Is your contractor or design-build company a CEBA member?*
- ✓ Does the completed building maintain a controlled environment?
- ✓ Was the project completed between January 1, 2023 and March 31, 2024?
- ✓ Was it completed on or ahead of schedule?
- ✓ Are you ready and willing to receive the recognition that your business, your partners and your team deserve for a job done to the highest standards of innovation and quality?

- ✓ Are you able to complete a submission by close of business Friday 30 August 2024?
- Late applications will not be accepted.

** The Processor/End User/Warehouse/Third-Party Logistics company that commissioned and operates the facility does not need to be a member of CEBA or the GCCA.*

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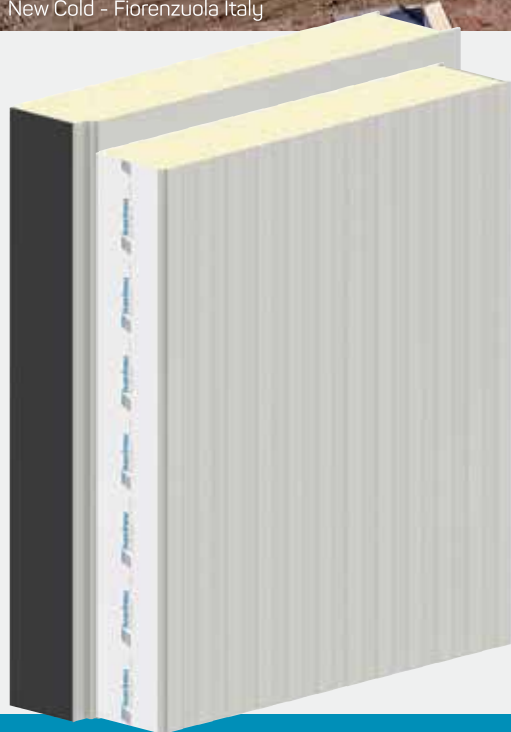
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What's Involved in Submitting an Application?

You must submit a formal application as set out in the application pack. This includes:

- The completed written application as provided in the application
- A slide presentation that includes:
 - › A summary video
 - › Photographs
 - › Testimonial (or can be included in written form in this packet)
- Two finalists are selected in each category, and they will present their application to an audience at the CEBA Conference and Expo, November 11-14, 2024 in Ponte Vedra Beach, Florida, United States
- Finalist presentations should be a joint effort involving both the project contractor and the end user/client of the facility being considered as overall winner.

What Are the Judges Looking For?

Here are the judging criterias:

- Project Complexity
- Innovation
- Project Management
- Sustainability Considerations
- Contribution to larger society or the supply chain
- Quality of video submission

Where Can I Find Out More?

All the award details and downloadable application pack details are available on the GCCA website. The GCCA team is also on hand to guide you through the process, especially with how to create a submissible video and presentation and with preparing finalists for the presentation at the CEBA Conference and Expo.

Contact hcoughlan@gcca.org for more information.



Who Were Our Winners and Finalists in 2024?

WINNERS

Over \$35MM Category: Fisher Construction Group | NewCold, Lebanon, IN, United States

Under \$35MM Category: Ti Cold | CORE X COMPLETE, Sturbridge, MA, United States

RUNNERS UP

Over \$35MM Category Ti Cold | Sierra Supply Chain Services, Hamilton, ON, Canada

Under \$35MM Category:

- WDS Construction | Vortex Cold Storage, Albert Lea, MN, United States

HONORABLE MENTION:

- AMC Engineers | Pick n' Pay, Eastport, Gauteng, South Africa
- Big D Construction | Riverbend Meats, Idaho Falls, ID, United States
- Eng2K | NewCold, Piacenza, Italy
- FCL Builders | Cold Summit Development, Bedford Park, IL, United States
- Primus Builders | RL Cold, Baytown, TX, United States



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TAKING GCCA AFRICA TO THE NEXT LEVEL

GCCA onboards new Africa Director Paul Matthew and finalizes Conference plans.

With a strong board, growing membership and events and a new director joining the team in May, GCCA Africa is positioned to go from strength to strength. *Cold Facts* caught up with the team to hear the exciting plans and opportunities ahead for this fascinating, challenging and opportunity-filled region in the cold chain world.

New Leadership

Paul Matthew started work as the new GCCA Africa Director on May 3. He joined GCCA after nearly six years as the Chief Executive of the Association of Meat Importers and Exporters in South Africa, and before that, he spent eight years building a humanitarian program tackling epidemic disease in the African road haulage sector.

Chris Creed, Chief Executive of Vector Logistics and Chairman of the GCCA Africa Council, said, “We are delighted to have recruited Paul; he brings exactly the right mix of experience in advocacy, engagement and entrepreneurialism that will help us take our organization to the next level.”

A Strong Foundation

Matthew takes on the leadership role of an organization with an active, committed and growing membership. The council and committees have been hard at work reviewing and setting policies to help shape and lead the African cold chain.

Adam Thocher, leading the GCCA's International Membership program, underscores the value of collaboration among our African members. He says, “Their active participation in the Africa Council and two committees is a testament to our shared commitment to finding solutions to key issues, particularly in the areas of employee and food safety.”

Matthew's immediate priority will be finalizing the program and details of the African

Meet Paul Matthew – GCCA's New Africa Director

Q: What attracted you to the role here at GCCA?

A: Having really enjoyed leading the work of the South African meat import and export industry, I was keen to take on a new, broader challenge. In my previous career, I worked on issues affecting logistics operations on the African continent, and I see a chance to do that again in this role.

I am also fascinated by the issues – cold chain is about so much more than trucks and warehouses.



Q: Why do you think providing a voice for the cold chain on the continent of Africa is so important?

A: Some of the biggest challenges and opportunities that will shape the future of our continent have a cold chain at their center.

Delivering food security stands out at the top of that list. With a fast-growing population, ensuring people are fed is fundamental to growing wealth and prosperity.

To feed people, we must have quality, well-maintained logistics infrastructure. There is so much governments can do

to help us grow the cold chain across the African continent. But there is also so much governments can do to get in the way of being able to accomplish that. We can't assume they know this or will make the right decisions if we don't participate in the conversation.

Q: What are you most looking forward to in your new role?

A: Meeting members, broadening the reach and relevance of GCCA in Africa and overall, making a positive difference.



Cold Chain Conference, which will take place at The Westin, Cape Town, South Africa, from 22 to 23 August. Thocher explains, “Bringing members together to learn and make connections is what GCCA does best, and our fast-growing Africa conference is something we are extremely proud of.”

Speaking Up for the Cold Chain

Providing a voice for the cold chain in the places where decisions are made is a core strategic priority. GCCA has been investing in the people and resources necessary to do this job more effectively in more places worldwide.

In Paul Matthew, GCCA has recruited a leader experienced in building relationships and speaking out for the industry. He says, “There is so much governments can do to help us grow the cold chain across the African continent. But there is also so much they can do to get in the way of us being able to do that. We can’t assume they know this or will make the right decisions if we don’t participate in the conversation.”



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CONGEBEC'S MISSION TO DRIVE CHANGE IN FOOD WASTE REDUCTION

Editor's Note: Food Waste Focus is a new feature for Cold Facts. Each issue, one member or initiative that is meeting the goals and objectives of the Global Cold Chain Foundation's Food Maximization project will be featured.



No one wants to see good food thrown away, especially when people are hungry in our communities. Few have the power to act, and even those that do, don't always have the focus or leadership capacity to make a difference. That is why the story of the Canadian cold storage business Congebec's food waste program is so inspiring.

It's leadership is making a real difference in the lives and health of people across their home province of Quebec, Canada. Food insecurity is a constant and growing problem. In fact, one in six people who depend on food banks in Canada hold a full-time job. As of March 2023, Canada saw a 78.8% increase in food bank clients between 2018 and 2023.

"For us, it's obvious that with our expertise in freezing, we need to support the food relief network in preserving food and enabling it to be distributed optimally," says Nicholas-P. Pedneault, CEO of Congebec.

Working in partnership with Food Banks of Quebec, Congebec has implemented a three-step strategy.

1. Donate Storage Space

Since starting its program, Congebec has made storage space available for 500,000 kg of food a month, including at their new freezer in Mascouche, Montreal, which will expand their warehouse business in the region.

Catherine Lambert, Communication, Employer Branding & Government Affairs Strategist at Congebec, explains why the company is so pleased to be taking this initiative. "It may not be our product but we handle it every day, and we see opportunities to salvage food all the time, for example when a case is

broken and the rest of the pallet is still safely packaged and safe to eat, up to 2,200 pounds of product is at risk of being destroyed. Knowing it could be thrown away is heart-breaking," she says.

What Congebec has learned is that donating space is about more than just allocating a section of the warehouse. Initially the project was slowed down by manual tracking and adjustment processes. It took hours of resources for both partners. To resolve this, Congebec led the integration of the food bank's data into its warehouse management system, significantly speeding up and professionalizing the process.

2. Recruit Customer Support

Congebec does not own the food that it stores and moves. It can only act if it recruits customers as partners in the initiative, so it must obtain written permission from customers for each donation when food is in danger of being destroyed. It cannot all be saved, but Congebec is taking a proactive approach and encouraging its customers to donate this safe-to-eat product when possible. Lambert says, "Sometimes, it's a matter of having no alternative for the customer, which we are able to provide with our network and partnership with Food Banks of Quebec."

It is also vital that all parties understand the rules. In Canada the so called "Good Samaritan" laws allow for legal protection from liability for those who partake in the safe donation of foods, encouraging donations to food banks from food companies. Congebec's understanding of the rules can help customers to have the reassurance they need to allow the donation.

Food Banks of Quebec and its affiliates are experts in food recovery and redistribution throughout the region, with a network that spans 44 million kilograms (over 97 million pounds) of food—worth 444.6 million CAD (approximately 327.5 million USD) annually—which is distributed to the 1,200 organizations it serves. Assisting over 870,000 people monthly, their network solicits donations from throughout the provinces and serves as part of the Food Banks Canada network. According to their 2022-2023 Annual Report, Food Banks of Quebec received most donations from agri-food businesses, however, post-pandemic, they found themselves having to purchase food to service the growing need. A \$6.4 M grant from the Canadian Government and \$8 M grant from the Government of Quebec tied over the food bank network for food purchases between 2022-2023, however donations remain key. Partnerships are vital to Food Banks of Quebec's operation.



Food Banks of Quebec is nominated for its Frozen Food Rescue Program with Congebec at the prestigious Canadian food industry awards, the DUX Grand Prix 2024. (Photo courtesy of Congebec.)

3. Provide Mentorship

Congebec lends its expertise, providing its food bank partner with seasoned input on facility construction and often offering a second opinion on building elements or tools.

The partnership is natural, with the Congebec team in a position to offer seamless mentorship and assistance to food banks. In an almost identical line of work, food banks and warehouses share a goal of safely storing and supplying food to keep meals on everyone's table. Food banks, however, manage their food supply in a far more manual way – often manipulating cases and products – while warehouses have tools to automate or handle in mass.

Where Next?

Given the success of its partnership with Food Banks of Quebec so far, Congebec has ambitions to launch a partnership with Food Banks

Canada and team up with customers to offer them a fast-track alternative to destroying products. Food Banks Canada works with over 750 Affiliate Member Food Banks, operating with partners in retail, agriculture, processors and manufacturers to safely handle food. Through this, Food Banks Canada has annually moved over 163 million kg (over 360 million pounds) of food.

As the Global Cold Chain Foundation Vice President Amanda Brondy says, “Given Congebec’s success so far there is very little reason to doubt that they will achieve their goals to scale up their program to benefit people across Canada. I also know that businesses across the world of cold chain can learn so much from the Congebec experience, and there is more that can be done to replicate the legislative and tax incentives that have helped them and Food Banks of Quebec along the way.” 🔄

Volunteers

The program is more than part of the day-to-day job expectation for Congebec staff. The initiative has inspired colleagues to go further with volunteering programs. Employees gathered around the Christmas holiday to collect non-perishable food products in facilities to donate to food banks. Their teams also donate their freezer jackets; for five years they’ve been upcycling the jackets – cleaning and then donating them.

When processing a delivery, one Congebec employee even went out of their way with their sump pump to clean a food bank’s flooded loading dock door during a rainstorm, preventing their operation.



GCCA AFRICAN COLD CHAIN CONFERENCE

21-22 August 2024
Cape Town, South Africa

This conference is Africa's premier event for the cold chain industry, bringing together cold store operators, distributors, manufacturers, producers, retailers, controlled-environment builders, equipment suppliers, and service providers to discuss opportunities and challenges of this essential sector. Don't miss out on timely educational content delivered through Plenary and Education Sessions, quality networking opportunities in the form of receptions, coffee breaks and lunches, plus learn the latest product and services solutions from vendors in attendance. Secure your spot!

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COLD CHAIN DEVELOPMENT

NEWS ABOUT GCCF INTERNATIONAL PROJECTS

This column features news about key projects of the Global Cold Chain Foundation (GCCF) 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 PROJECT

Technical Assistance for Postharvest Facilities in India, 2024

Recently, GCCF secured a new contract that will be implemented in the states of Assam and West Bengal, India. This project will feature a needs assessment in each state and the development of a technical manual, training curriculum and facility design plans to strengthen postharvest practices of local commodities. The project is supported by technical experts Dr. Vijay Yadav Tokala, Dr. Lisa Kitinoja and Richard Dowdell.

ACTIVE PROJECTS

Agricultural Trade and Climate Smart Innovations (ATraCSI) Project, 2023 – 2027

Partnered with Improving Economies for Stronger Communities (IESC)

GCCF is carrying out the Cold Chain Market Opportunities and Infrastructure Assessment in collaboration with GCCA member, LixCap. In February, three GCCF consultants traveled to Honduras, El Salvador, and Guatemala to understand the existing cold chain capacity as well as identify new opportunities to enhance the ability to export perishable products through cold chain. The assessment is ongoing. In July, two stakeholders from each country will attend GCCF's Cold Chain Institute in Mexico City.

Bangladesh Trade Facilitation (BTF) Project, 2020 – 2025

Partnered with Venture37 and LixCap

GCCF consultants traveled to Bangladesh to advise on best practices in warehouse operation and design. The experts also supported an Investment Conference with stakeholders from the public and private sector to discuss opportunities for developing the cold chain in the country. Dr. Elhadi Yahia, Postharvest Expert on GCCF's Council of Scientific Advisors, is traveling to Bangladesh in March and



GCCF Technical Expert Debbie Corado (right) met with a number of warehouse operators, logistics providers and government officials during the ATraCSI assessment.

April to provide consultations in postharvest best practices for potatoes and carrots, as well as to observe and recommend future postharvest management training. GCCF is also supporting curriculum to educate local commercial refrigeration technicians and engineers to provide service and maintenance for cold chain equipment.

Dominican Republic TraSa Project, 2021 – 2025

Partnered with Improving Economies for Stronger Communities (IESC)

GCCF continues to support cold chain development in the Dominican Republic through the TraSa project. At present, GCCF is updating a perishable handling manual with the aid of Dr. Elhadi Yahia on the Council of Scientific Advisors. Additionally, eight individuals from the project will attend GCCF's Cold Chain Institute Latin America in July. Future activities include the implementation of a study tour to observe trade practices of temperature-controlled products.

Storage Through Organized Refrigeration (STOR) App

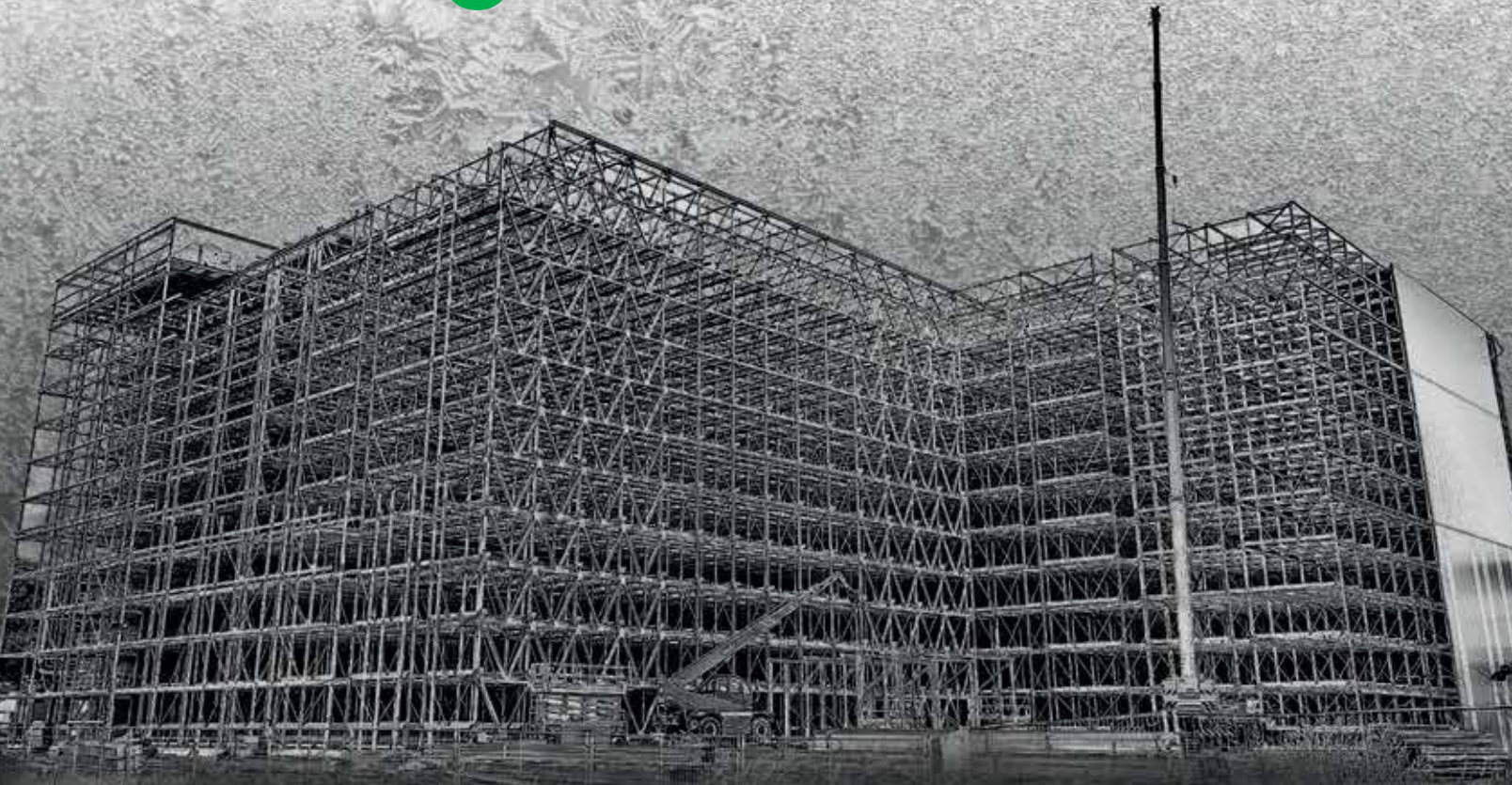
Partnered with Warehouses4Good

GCCF is working alongside GCCA member Warehouses4Good to develop a pilot smart-phone app that will connect food supply agencies with the owners of cold storage space in the Washington, D.C., Maryland and Virginia (DMV) area. GCCF has completed the data collection (phase 1) use case requirements (phase 2) of the project. Current work involves onboarding local organizations for the pilot and testing the app to finalize it for official pilot launch in August 2024.

Ongoing Industry Support to Reduce Food Loss and Waste

Feeding America's Senior Director of Food Safety attended Cold Chain Institute West in February 2024. This is the first step in building out the Foundation's support for training and education for food bankers and food rescue organizations working in logistics. GCCF is working with Feeding America to understand the applicability of the Institute to those working in food rescue and the possible approaches to training that might work for these individuals. @

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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 GCCF Council of Scientific Advisors (CSA) and the roster of advisors. Submit your cold chain questions to the Council of Scientific Advisors at www.gcca.org/inquiry.

Q: What do you consider is the most optimal methodology for allocating costs per customer in a cold storage business, specifically regarding energy; indirect labor; selling, general and administrative expenses; and maintenance costs?


A: As far as I know, there are no “standard rules” that everyone applies in the same way. Largely, the basic idea of “activity-based costing” is to best assign costs to the activities that cause the costs, considering that the work of assigning costs to activities should itself also be cost-effective. Some things are just not worth measuring and assigning adequately, as they are insignificant compared to other costs. For example, the electricity cost for charging forklift trucks may be interesting to determine in an ambient warehouse but not in a cold store.

If all products arriving at the warehouse already arrive at the required temperature, then likely most energy costs arise from keeping the warehouse at a steady temperature, and a cost allocation based on weight and duration-of-stay of the goods is most straightforward. If there are significant electricity costs for other activities, like blast freezing, then it would be logical to roughly split the electricity cost first into a few major categories and assign costs to activities accordingly.

Labor is a more challenging category for cost allocation because labor can sometimes go to unexpected activities. Any reasonable form of cost allocation tends to be preceded by some form of measurement. If you have a WMS that documents all activities of all employees, it may be possible to derive an estimate from this. Otherwise, time measurement on the floor can be quite revealing (say, one day of an intern with a stopwatch).

Of course, in activity-based cost the question is always what is the best tradeoff in precision of the cost assignment versus the effort required to make the assignment. For

example, maintenance cost can be assigned based on the number of moves in the warehouse. However, if there are multiple types of equipment, and equipment usage differs between customers, it may be interesting to document equipment breakdowns, assign those breakdowns to goods flows, and assign costs accordingly so the activities for which equipment is used that breaks down more often, are assigned a higher maintenance cost.

*This answer was provided by
Dr. Kees Jan Roodbergen, Operations &
Logistics Management Expert, University
of Groningen.* 

Submit your burning cold chain questions to the Council of Scientific Advisors at www.gcca.org/inquiry or at inquiry@gcca.org.



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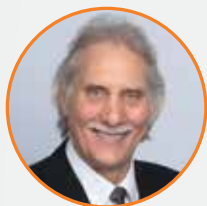
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The Global Cold Chain Foundation (GCCF) Council of Scientific Advisors is an eminent group of food scientists, logistics, and packaging experts from around the world. The Council provides cutting-edge research and advice to members of the Global Cold Chain Alliance and its Core Sectors.



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Dr. Elhadi Yahia

Universidad Autónoma de
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Have a burning cold chain question?
Submit an inquiry to the Council of Scientific Advisors
at www.gcca.org/inquiry



GCCA CONVENTION

23-26 SEPTEMBER 2024
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MEMBER NEWS

NEWS FROM MEMBERS OF GCCA CORE PARTNERS

Emergent Cold LatAm has become the only Brazilian 3PL authorized to export animal protein to China. The company's facility located in Rio Grande is now allowed to store and ship frozen animal protein to meet the growing demand for Brazilian origin products destined for the Chinese market. As a result, the volume of cargo stored and handled at the Emergent Cold facility is expected to double, and overall provides new opportunities for Brazil's refrigerated logistics sector.



Emergent Cold LatAm held the company's first Engineering Summit in São Paulo, Brazil, in early March. The event focused on updating, developing and exchanging knowledge between its Engineering, Maintenance, Safety and Quality teams. Professionals from the 11 countries where the company operates in Latin America participated. In addition to the in-house team, representatives from global suppliers invited to share best practices. Participating companies included Advansor, BMP, Clauger, Crown, Danfoss, Güntner, Kavidoors, Mayekawa, Orange Solar, PSRG, Thermofin, Johnson Controls, Evapco, Bertolini, Kingspan, WXR, Marsh, Ledvance and Ndustral.



(Photo courtesy of Midwest Refrigerated Services.)



Lineage is constructing a new cold storage warehouse in Hazleton, Pennsylvania, United States. The fully automated, next-generation facility will span approximately 386,000 square feet and accommodate about 85,000 pallet positions for temperature-controlled

products. The facility implements advanced technology and automation, such as cranes and rail-guided vehicles, inbound lanes featuring proprietary computer vision technology that automates the product receiving process, and automated layer picking. Construction is expected to be completed in Fall 2024.



Midwest Refrigerated Services (MRS) broke ground on its new regional distribution center in Belvidere, Illinois, United States, in mid-February. The new facility will be its second location in Belvidere following the opening of MRS' first warehouse in the city last September.

Scheduled to open in March of 2025, the fully racked 200,000 square-foot facility will provide more than 40,000 pallet positions of refrigerated storage and will employ state-of-the-art layer picking technology. The site is rail served by the Union Pacific Railroad.



PLM Fleet announces Don Durm, the company's Vice President of Strategic Customer Solutions and also the chair of GCCA Transportation, is named a recipient of the 2024 Rock Star of the Supply Chain Award. Durm's recognition is for the Lifetime Achievement category. *Food Logistics* Rock Star awards recognize influential individuals in the industry whose achievements, hard work and vision have shaped the global cold food supply chain.



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The 2024 GCCA Brazilian Cold Chain Congress serves as the leading event in Brazil for executives from temperature-controlled warehousing, logistics, and transportation sectors, along with industry suppliers seeking to enhance the cold chain.

Tailored for senior-level professionals, the educational program focuses on addressing crucial business issues and exploring opportunities for growth.

Additionally, attendees can engage in prominent social events, receptions, and the Supplier Showcase, offering industry suppliers valuable opportunities to connect with warehousing and logistics leaders.

**For more information and to register,
visit gcca.org/events**



**GLOBAL COLD CHAIN
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MEMBER NEWS

NEWS FROM MEMBERS OF GCCA CORE PARTNERS



(Photo courtesy of Primus.)

Primus and **Americold** are again partnering on a cold storage warehouse design-build project. Recently, Americold partnered with Canadian Pacific Kansas City (CPKC) to co-locate refrigerated warehouses along the CPKC rail network. Their first effort is a 335,000 square-foot greenfield facility in Kansas City, Missouri, United States. Spaces include a freezer warehouse, a cooler warehouse that will be converted into a freezer in the future, a two-story office, USDA inspection rooms and a cold dock. The project broke ground in May on the former Richards-Gebaur Air Force Station. Members of the Primus field team attended in addition to Missouri Governor Mike Parson, the Missouri Department of Economic Development and executive leadership from Americold and CPKC.



Ti Cold is building a second facility for **Agile Cold Storage**, this one Located in Pearl River, Louisiana, United States. The first facility Ti Cold built for Agile was in Macon, Georgia, and was completed in April. The new 120,000-square-foot, advanced cold storage complex will be located at the 130-year-old St. Joe's Brick Works site. The structure will be 50-foot clear and feature a flexible, convertible design that maintains temperatures ranging from 40 degrees to minus 10 degrees Fahrenheit. The facility will also implement an environmentally friendly, low-charge



(Rendering courtesy of Ti Cold.)

ammonia system that uses natural, environmentally friendly refrigerant in low volumes. Structural steel pallet racks will accommodate

over 16,500 pallet positions. Ti Cold began construction in May and the facility will be running by the first quarter of 2025. 🌐



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2024 GCCA, GCCF and CEBA Global Events Calendar

JULY

GCCF COLD CHAIN INSTITUTE LATIN AMERICA

15–17 JULY 2024

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.

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



AUGUST

GCCF COLD CHAIN INSTITUTE BRAZIL

13–15 AUGUST 2024

Sao Paulo, Brazil | The Gran Estanplaza Berrini

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.

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



AFRICAN COLD CHAIN CONFERENCE

21–22 AUGUST 2024

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.

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



SEPTEMBER

GCCF COLD CHAIN INSTITUTE EUROPE

2–4 SEPTEMBER 2024

Amsterdam, The Netherlands | TBD

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.

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



133RD GCCA CONVENTION

23–26 SEPTEMBER 2024

Bonita Springs, Florida, United States | Hyatt Regency Coconut Point

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

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



GCCA LATIN AMERICAN COLD CHAIN CONGRESS**7-8 NOVEMBER 2024**

Panama City, Panama | TBD

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.

**44TH CEBA CONFERENCE & EXPO****11-14 NOVEMBER 2024**

Ponte Vedra Beach, Florida, United States | Sawgrass Marriott Golf Resort & Spa

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.

Audience: Chief engineers, regional facility managers, regional facility maintenance leads, construction engineer managers, owners/CEOs who are building or expanding facilities.



GLOBAL COLD CHAIN ALLIANCE

COLD CHAIN CONNECTION

GCCA Cold Chain Connections are designed to bring together professionals working in the temperature-controlled warehouse, logistics, transportation, and design/build industries from around the region to network, build relationships and address industry and business issues in an engaging and informal setting. These events are open to both members and non-members.

JULY**CANADA –
NIAGARA-ON-THE-LAKE**16-17 JULY 2024,
WHITE OAKS RESORT**MEXICO –
MEXICO CITY**17 JULY 2024,
HILTON MEXICO CITY
REFORMA**AUGUST****UNITED STATES –
GALLOWAY, NEW JERSEY**7-8 AUGUST 2024,
SEAVIEW DOLCE HOTEL**UNITED STATES –
KANSAS CITY**13-14 AUGUST 2024,
CASCADE HOTEL**SEPTEMBER****THE NETHERLANDS –
ROTTERDAM,**2 SEPTEMBER 2024,
HILTON ROTTERDAM

Further Cold Chain Connections are planned in Singapore, Centre-Oeste Brazil, Durbin, South Africa, and Warsaw, Poland in October and November. More details to be announced soon.

Find out more at www.gcca.org/coldchainconnections

ASSOCIATION NEWS

NEWS ABOUT GCCA CORE PARTNERS

The **GCCA** Cold Chain Transportation Best Practices Guide assists shippers and warehouses in understanding and preparing qualified – and attainable – food safety plans and transportation requirements, and offering carriers, loaders and receivers a clearer understanding of expected practices so that they can be prepared to deliver.

Safe food transportation has been our food supply chain's quiet and dependable link for years. Due to world instability and questions about supply chain security, this industry has received growing attention. GCCA Transportation is well-positioned to represent the sector's best practices globally. Download the Cold Chain – Transportation Best Practices Guide from the GCCA website.



GCCF added two distinguished experts to its Council of Scientific Advisors (CSA). Dr. Debjit Roy, Institute Chair Profession, Indian Institute of Management Ahmedabad and Dr. Stephanie Clark, Affiliate Professor, New Mexico State University.

Dr. Roy specializes in Operations and Decision Sciences. He also serves as a visiting professor at the Rotterdam School of Management and the University of Michigan. His research focuses on improving system performance through quantitative methods, earning him numerous prestigious awards and publications in top journals. He has also authored a book on trucking business management and holds significant leadership roles in professional societies and editorial boards.



Dr. Debjit Roy, Institute Chair Profession, Indian Institute of Management Ahmedabad



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ASSOCIATION NEWS

NEWS ABOUT GCCA CORE PARTNERS



Dr. Stephanie Clark, Affiliate Professor,
New Mexico State University.

After earning her B.S., M.S., and Ph.D. from Cornell University, Dr. Clark began her academic career at Washington State University and later transferred to Iowa State University in 2009. Her research covers a wide range of topics, from dairy animal science to consumer insights. One of her significant achievements was re-establishing the ISU Creamery, which opened in 2020. After retiring from ISU in December 2023, Dr. Clark moved to New Mexico, where she now consults for the dairy industry and teaches at New Mexico State University.

The Council of Scientific Advisors is dedicated to providing cutting-edge research and insights to cold chain industry stakeholders, and the addition of Dr. Clark and Dr. Roy brings even more expertise and knowledge to this prestigious group.

The **CEBA** 2024 Built by the Best Award Program is now accepting applications. The Built By The Best Award acknowledges the Controlled Environment Building Association (CEBA) members around the globe for their expertise and innovation in constructing, renovating and/or modernizing controlled environment buildings. The 2024 award program will include two award categories: Projects under \$35 million (defined as total cost to customer/end user) and project over \$35 million (defined as total cost to customer/end user).

Applicants are welcome to submit projects in each category. To apply and learn more about the award, please visit our Built by the Best site to download the application materials (packet and PowerPoint template). Submission Deadline is Friday, August 30, 2024. 📧



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RALUCA MARIAN

Director, EU Advocacy & General Delegate
International Road Transport Union.

CF: Could you describe the International Road Transport Union (IRU) and the work you lead in Europe?

RM: The International Road Transport Union, the world road transport organization, represents, via its 176 members, more than 3.5 million companies operating mobility and logistics services, including 1 million in the EU alone.

Together with our members, including bus, coach, taxi and truck associations and operators, the IRU strives to shape industry policies to help our sector thrive in the interest of communities and economies worldwide.

On behalf of its EU members, IRU monitors and contributes to the legislative and awareness-building processes on road transport issues dealt with by the EU institutions. The core topics in Europe include sustainability and environmental issues, mobility, road safety, access to the market and fair competition.



Autonomous vehicles also offer potential for not only the driver shortage issue, but also decarbonization, efficiency and traffic congestion."

— RALUCA MARIAN

CF: How would you assess driver availability in European road haulage, and what is being done to ensure people join and remain in our profession long term?

RM: The road transport sector is facing an unprecedented and severe driver shortage that is expected to triple by 2026 if no action is taken.

To close the "school-to-wheel" gap, the IRU is advocating the implementation of an EU-accompanied driving program enabling 17-year-old truck drivers (categories C and C1) to safely gain practical driving experience and familiarize themselves with the profession alongside an experienced driver. Other solutions include improving driver safety and comfort with greater access to safe and well-equipped rest areas and better treatment of drivers at delivery sites.

Given the extent of driver shortages coupled with many drivers nearing retirement, the IRU is advocating for a harmonious EU-wide recognition of third-country drivers' licences and qualifications.

CF: Are the EU's plans for decarbonization on track and realistic?

RM: The EU's decarbonization plans are ambitious and aim to significantly reduce greenhouse gas emissions by 2050. The European Commission wants CO2 emission reduction targets for new heavy-duty vehicles

(HDVs): a 45% reduction target for manufacturers by 2030, escalating to 65% as of 2035, before jumping to 90% starting 2040.

The transition requires substantial investment in infrastructure, such as charging stations and energy grids, and the adoption rate of new technologies is crucial. Thus, while the goals are on track, their realism and achievability depend heavily on sustained political, economic and technological support.

CF: Do you think transporting commercial goods by automated driving will be a reality in our lifetime?

RM: Autonomous heavy-duty vehicles within our lifetime is likely, given the rapid advancements in technology and significant investment by major industries. But we still have a long way to go.

Autonomous driving technology has the potential to further increase efficiency, reduce accidents and lower costs. Autonomous vehicles also offer potential for not only the driver shortage issue, but also decarbonization, efficiency and traffic congestion. However, widespread adoption will depend on regulatory approval, infrastructure adaptation, and public and industry acceptance.



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