

## Set Point

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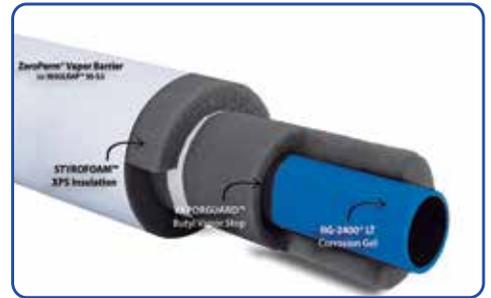
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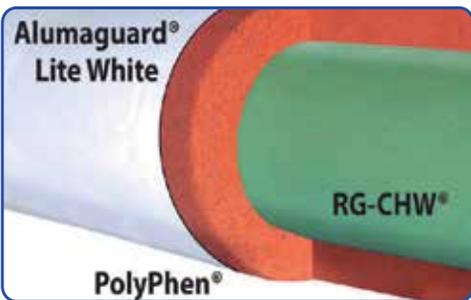
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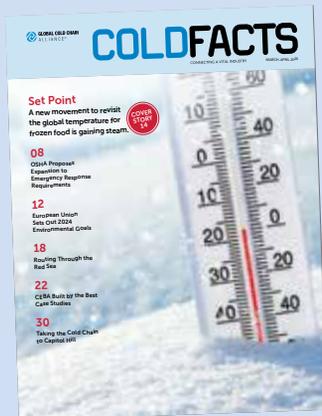


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## MESSAGES FROM GCCA LEADERS

**W**ELCOME TO YOUR LATEST EDITION OF THE GCCA COLD FACTS MAGAZINE. IT TRULY IS AN HONOR

TO SERVE AS CHAIRMAN OF THE GCCA WAREHOUSE BOARD IN THIS CRUCIAL YEAR FOR OUR ASSOCIATIONS.

My company has been a member of GCCA for many years as a regional warehouse and transportation operator with three facilities in or close to the Port of Oakland, California. Dreisbach Enterprises has benefited massively from the representation, advisory service, programs and supportive network GCCA provides. As a member-owned and run association, it is essential that members not only join and participate in GCCA activities, but take an active part in the governance and decision-making that shape the association. I have enjoyed doing so as a member of the Board for the past few years, and I am excited to serve my year as Chairman.

It is already shaping up to be a great year. Our annual North America Institutes have been another stellar success, with record numbers of students benefitting from our unique peer-to-peer cold chain training experience.

The events come thick and fast. I am delighted to be participating in our European Conference in Brussels, Belgium, in April, followed by our annual meeting of the GCCA Warehouse, GCCA Transportation, GCCF and CEBA Boards in May. From there, we have additional global Institutes, Cold Chain Connections, Conferences and more across the world right the way into the autumn.

Your GCCA is stronger and more dynamic than ever.

As Chairman, it is my job to facilitate decision-making on the Board and support your executive team in understanding what members want and need from their association. Face-to-face meetings are the heartbeat of GCCA, whether it is our Boards, our conferences, congresses or conventions around the world. We learn much about each other's concerns and priorities when we meet. I encourage you to look up our events program and find an opportunity to participate. I have never left a GCCA event without a new idea, new valuable contact or inspiration that has helped my business.

This is an exciting year of change for your association. We are making great progress in recruiting a new President and CEO for the business. I am grateful to Greg Laurin, Immediate Past Chairman of the GCCF, and the search committee he is chairing for their work in managing this process. Executive leadership changes are always a time to reflect on the strategic direction of the business. Our next CEO will inherit a financially robust, growing and ambitious organization. My job is to ensure the members, particularly our Boards, can provide guidance on what our industry wants and needs and help frame the opportunities and challenges ahead.

It is, therefore, great timing that we are undertaking our planned review of the GCCA's Strategic Plan, which has served us well. Three years ago, the plan helped us focus on the four goals of building better industry intelligence, global advocacy, industry promotion and workforce development, all of which have advanced significantly in the past. The plan expires at the end of 2024, therefore, GCCA is undertaking a structured strategic review initiative.

Similar to last time, we would like to get as much input and feedback from all members so we know your thoughts on your business challenges and where you see new opportunities for us to add more value. We will gather a range of views from members worldwide about the short-, medium- and long-term future of the cold chain and, from that, help inform the priorities of the next GCCA Strategic Plan.

I look forward to meeting and spending time with many of you throughout the remainder of 2024, and I am excited to play my part in shaping the next phase for GCCA. 🌐



JASON DREISBACH  
CHAIRMAN  
GLOBAL COLD  
CHAIN ALLIANCE,  
WAREHOUSE BOARD

## 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.



### CONTACT US:

COLD FACTS Magazine  
Global Cold Chain Alliance  
Attn: Megan Costello  
241 18th Street South  
Suite 620  
Arlington, Virginia 22202  
United States

tel +1 703 373 4300  
mcostello@gcca.org | www.gcca.org

COLD FACTS welcomes editorial ideas; contact Editor-In-Chief Alexandra Walsh at +1 301 523 3318 or [awalsh@associationvision.com](mailto:awalsh@associationvision.com).

Contact Jeff Rhodes at +1 410 584 1994 or [jeff.rhodes@wearenci.com](mailto:jeff.rhodes@wearenci.com) for advertising opportunities in GCCA publications.

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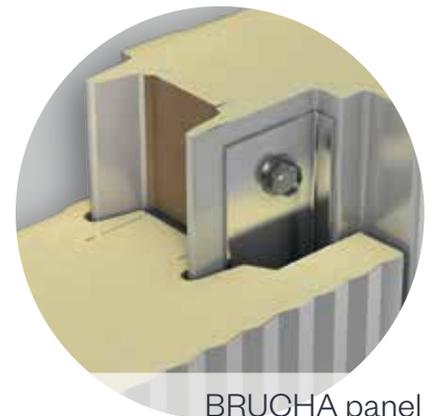
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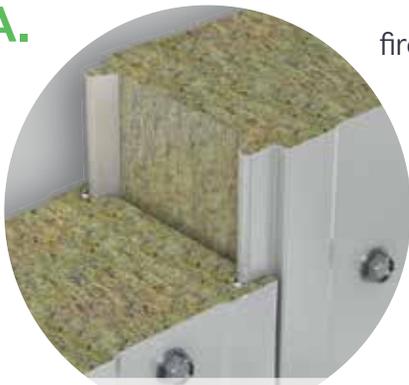
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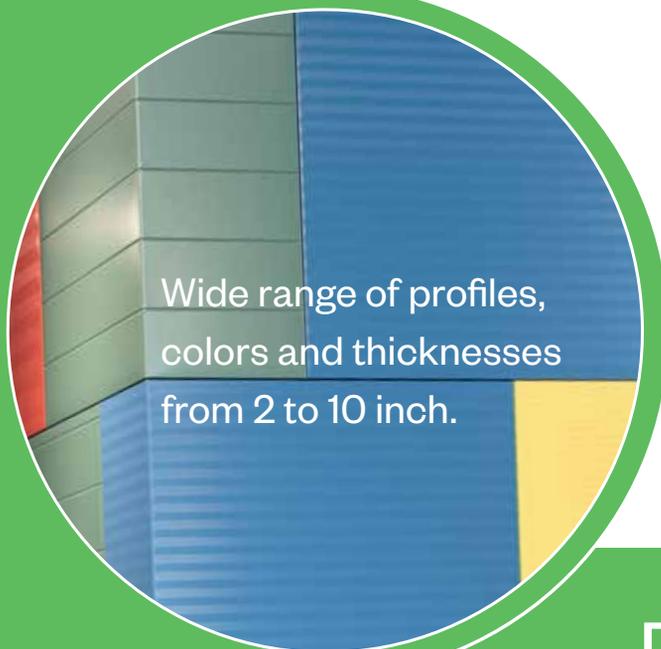
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# OSHA PROPOSES EXPANSION TO EMERGENCY RESPONSE REQUIREMENTS

*OSHA plans to expand the reach of the emergency response standard to private employers with employees who respond to emergency incidents as a part of their duties.*

By Lowell Randel

In February, the U.S. Occupational Safety and Health Administration (OSHA) proposed new rule that would expand the reach of its emergency response standard. OSHA stated it has undertaken the rulemaking because it believes current OSHA emergency response and preparedness standards are outdated and incomplete.

According to OSHA, current regulations do not address the full range of hazards facing emergency responders, lag behind changes in protective equipment performance and industry practices, conflict with industry consensus standards and are not aligned with many current emergency response guidelines provided by other U.S. federal agencies (e.g., Department of Homeland Security/Federal Emergency Management Agency).

The proposed rule seeks to ensure that workers involved in emergency response activities get appropriate protections from

the hazards they are likely to encounter while on the job. The proposed rule would replace OSHA's existing Fire Brigades standard, 29 CFR 1910.156, which was originally promulgated in 1980 and covers only a subset of today's emergency responders – firefighters.

The focus of the proposed emergency response rule is to provide basic workplace protections for workers who respond to emergencies as part of their regularly assigned duties. The expansion of the rule will likely bring many GCCA member facilities under the regulation.

The updated standard proposes a category of employers called Workplace Emergency Response Employers (WERE) and a category of employees called Workplace Emergency Response Teams (WERT).

## **Workplace Emergency Response Employer**

The proposed rule defines this term as an employer who has a workplace emergency response team; and whose employees on the team, as a collateral duty to their regular daily work assignments, respond to emergency incidents to provide service such as firefighting, emergency medical service or technical search and rescue.

WEREs are typically for-profit entities engaged in industries such as manufacturing, processing and warehousing. They have a workplace emergency response team to respond to emergency incidents at the facility.

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## Workplace Emergency Response Team (WERT)

The proposed rule defines this term as a group of employees (known as team members) who, as a collateral duty, prepare for and respond to emergency incidents in the WERE's workplace. This term, and variations of it, are currently in use in multiple industries, with varying degrees of application.

OSHA is providing this proposed definition to clearly identify what it means by the term WERT. In the proposed rule, team members are workers who would typically be engaged in an activity related to the employer's primary business function and leave that position when alerted to an emergency requiring the worker's service as a WERT team member.

Under the proposed rule, WEREs would be subject to a list of requirements related to facility planning, maintenance of facilities and equipment and training. Some of the requirements are consistent with practices already in place to meet other existing OSHA standards or national consensus standards. Others introduce requirements specific to the proposed rule.

Below is a summary of key areas of requirements being proposed:

- Develop and implement a written Emergency Response Plan (ERP) that provides protection for each of its employees designated to operate at an emergency incident.
- Conduct a vulnerability assessment of their facility for the purpose of establishing its emergency response capabilities and determining its ability to match the facility's vulnerabilities with available resources.
- Specify the resources needed, including personnel and equipment, for mitigation of emergency incidents identified in the facility vulnerability assessment.
- Establish and implement a process to involve team members and responders in developing and updating the ERP, in implementing and evaluating the ERP and in the review and change process.
- Develop and implement a written comprehensive risk management plan based on the type and level of service(s) that would be established to ensure that risks to the team members' and responders' health and safety have been identified and evaluated.

- Implement medical and physical requirements to ensure that responders are physically and mentally capable of performing their duties without injury to themselves or their fellow responders and identify and address physical and mental health effects resulting from emergency response activities.
- Require initial and follow-up training for responders and team members, as well as requirements for maintaining proficiency in the necessary skills and knowledge through regular – at least annual – skills checks.
- Ensure that WERE facilities are safe for team members by addressing issues including: egress, emergency lightning, exit marking; decontamination, disinfection, cleaning, and storage of PPE and other equipment; and fire detection, suppression and alarm systems.
- Conduct a PPE hazard assessment and ensure the proper provision, maintenance and use of equipment and PPE.
- Ensure vehicle safety, both in preparation and operation, in both emergency and nonemergency incidents.
- Develop Pre-Incident Plans (PIPs) for locations within the facility where team members may be called to provide service. The PIPs are based on the facility vulnerability assessment and the type(s) and level(s) of service(s).
- Develop an incident Management System (IMS) for managing and directing incident scene operations and activities. IMS should establish functions for managing incidents, describe the roles and responsibilities to be assumed by team members and responders, and standard operating procedures to be utilized.
- Establish requirements for incident command and management based on current industry practices, as reflected by NFPA consensus standards and FEMA's "National Incident Management System."
- Develop and implement SOPs for emergency events likely to be encountered, based on the type and level of service.
- Conduct a Post-Incident Analysis (PIA) to determine the effectiveness of the WERT's response after a significant event such as a large-scale incident involving multiple WERTs; a significant near-miss incident; a team member, responder injury or illness

requiring off-scene treatment; or a team member or responder fatality.

- Evaluate the adequacy and effectiveness of the ERP at least annually. Identify and implement recommended changes to the ERP and provide a written timeline for correcting identified deficiencies.

OSHA recognizes in the proposed rule that there are multiple other OSHA standards that address aspects of emergency response, including Process Safety Management (PSM). The proposed rule states that it is OSHA's intention that the protections of those standards apply instead of the protections of the proposed rule. So, if an emergency response employer limits its activities exclusively to activities covered by those other standards (such as PSM), it may not be subject to any provisions of this proposed rule.

It is also important to note that the proposed rule specifically would not apply to Hazardous Waste Operations and Emergency Response (HAZWOPER). OSHA notes, however, that most employers engaged in activities covered by those other standards are likely to also engage in other emergency response activities and would therefore need to comply with the proposed standard in order to prepare for, and respond to, covered emergency incidents. As a result, the proposed rule is likely to apply to many GCCA members who have employees that perform emergency response functions as part of their duties. Public comments on the proposed rule will be accepted by OSHA until May 6, 2024.

GCCA will be engaging with OSHA and industry partners to communicate concerns and questions regarding the proposal as the rulemaking process moves forward. ☎

**LOWELL RANDEL** is Senior Vice President, Government and Legal Affairs at GCCA.

**EMAIL:** [lrandel@gcca.org](mailto:lrandel@gcca.org)

### SIGNED UP FOR YOUR WASHINGTON WEEKLY UPDATE?

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# EUROPEAN UNION SETS OUT 2024 ENVIRONMENTAL GOALS

*European farmers respond by taking to the streets in protest.*

**By Shane Brennan**

The new year started with a flash of protest from the European farming community as disruptions broke out across Germany, France, Belgium the Netherlands and more. This article explains why this has happened, the implications for policymakers in the European Union, and what it means for the cold chain.

Farming protests are not unusual in Europe; periodic outbursts of anger and shows of strength have proved to be a standard part of how individual countries, and the Union, decide food and environmental policy. However, they should never be taken lightly, and this latest outburst has been particularly powerful and consequential.

As is always the case, there is no single reason why protests like this happen. The recent economic downturn, the sky-high energy prices and the war in Ukraine have all contributed to pressure across the food supply chain.

Farmers have felt this more than most, and there have also been specific “provocations.” For example, the attempt by the German

government to deprive farmers access to subsidized diesel fuel; the implementation of new “greening” rules (conditions imposed on farmers in return for their European subsidy payments); and pressure from retailers to cut farm gate prices in the face of rampant food price inflation.

The protests have resulted in action; the French government, for example, has moved swiftly to make promises of more financial support, reduced environmental rules and greater protection from imported food. The latter promise deepened tensions between Germany and France when Paris vetoed the ratification of the near-finalized Mercosur deal that would have allowed easier access to European markets for South American agri-exports.

The protests have also had an immediate impact on European policymaking. The Commission has launched a new “Strategic Dialogue” with the food sector on how Europe can support sustainable food systems in the future. The cynic would say this is an obvious tactic, from politicians under pressure in an election year, to defuse tension and delay controversial choices. But it is also hard to see any other way to take on challenging issues and attempt to find better, more consensual, solutions.

This all happened as the EU Commission published recommendations for what Europe needs to do by 2040 to meet its legislated goal of a net zero economy by 2050. GCCA has provided a full analysis of this statement to members, and it is available on our website.

Notably, the Commission changed that document to reduce the ambition and goals it suggests for EU farming and food production. Supporting farmers in their main job to produce food is emphasized, as opposed to proposals we know remain under consideration, such as taking more of Europe’s farming land out of production, restructuring farming subsidies, reducing fertiliser use and driving changes in consumer diets.

The focus is on achieving “food sovereignty,” which is a new, elegant way to express the imperative to ensure that Europe promotes domestic food production. This sentiment can come dangerously close to confusing “self-sufficiency” – the reliance solely on domestically produced food; and “food security” – ensuring that the population has access to sufficient, consistently available, affordable food. The reality of a secure future for the European food system is a well-planned and managed balance between domestically sourced, imported and exported food.

This shift in political emphasis is not only a reminder of the hard political power that farmers hold over the debate in Europe (as they do in most places around the world) but also a reminder that food matters. The delivery of food security is at the core of cold chain operators’ purpose, relevance and mission. Whether economic and trade policy boosts domestic production or promotes imports and exports, it requires a well-invested and resilient logistics infrastructure.

As we enter this crucial election year, the food industry has made its voice heard loud

and clear. As the conversation rolls on, GCCA will ensure the cold chain’s role and needs are fully heard and understood. ☎

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

**EMAIL:** [sbrennan@gcca.org](mailto:sbrennan@gcca.org)

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## SET POINT

A new movement to revisit the global temperature for frozen food is gaining steam.

**N**o one really knows why  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ) became the “set point,” or the temperature at which frozen foods are stored and transported across the global cold chain. But it did.

Many people point to 1924 and discoveries by Clarence Birdseye, who developed methods for quick-freezing pre-packaged food. His innovations earned 168 patents covering the novel freezing and packaging techniques, packaging material and more.

“The set point temperature has been  $-18^{\circ}\text{C}$  for almost a century,” observes Dr. Yosr Allouche, Director General of the International Institute of Refrigeration (IIR). “It has been proved to be a safe way to store and deliver quality food.”

The Codex Alimentarius, a collection of international standards, guidelines and codes of practice for the food trade, broadly defines “frozen” as  $-18^{\circ}\text{C}$  or below. Although it calls for many foods to be maintained at this standard temperature, its standards are voluntary. They are not enforceable until lawmakers or regulators mandate them. Codex standards are, however, commonly used as a point of reference by regulators, lawmakers and standard-setting bodies around the world.

In some cases, customs, commercial contracts and agreements covenants, and even company policies depart from the Codex. Some call for a temperature below that recommended by the Codex. In the European Union, many countries specify a “maximum permitted temperature” of  $-12^{\circ}$  ( $10^{\circ}\text{F}$ ), considerably higher than the  $-18^{\circ}\text{C}$  recommended by the Codex.

### Energy Savings

With few exceptions, it is believed that most frozen foods don't need to be held at  $-18^{\circ}\text{C}$ . When the temperature is well controlled throughout the cold chain, neither food quality nor food safety is negatively affected by a temperature of  $-15^{\circ}\text{C}$  or higher.

Storage and transportation temperatures below  $-12^{\circ}\text{C}$  are thought to provide a sizable margin for error. In the United Kingdom, for example, Cold Chain Federation Executive Director Tom Southall reports that most cold stores and vehicles operate at  $-20^{\circ}\text{C}$  to  $-25^{\circ}\text{C}$ . This, he says, is “to build in tolerance against equipment failure or temporary exposure to heat.”

But this margin of error comes at a high price. For every degree below  $-12^{\circ}\text{C}$ , it has been estimated that an additional 2% to 3% of energy is required to maintain food tempera-

ture. Recent volatility in U.K. energy prices, Southall says, as well as the strong drive towards Net Zero – in the United Kingdom and across the EU – have CCF members “laser focused on energy efficiency through temperature-controlled logistics.”

“We have generated an enormous amount of wasted energy in the last 100 years before we actually realized we didn't have to do this,” says DP World's Dirk Hoffmann, Account Director for Reefer Supply Chain Services in the United Kingdom. “With the increase of the cost of energy, the demand for energy, in particular electricity, has certainly made it more acute that we need to look at things from a different perspective.”

### Is Now the Time?

This conversation about the set point – and the potential to reduce costs and cut energy consumption by raising it 3-degrees Celsius – is not new. But it is different.

Renewed interest in a higher set point is increasingly coming from cold chain customers. Food manufacturers have already begun to study how a  $-15^{\circ}\text{C}$  cold chain set-point temperature would impact their products.

Some, like Nomad Foods' Georgios Tetradis-Mairis, who is the company's Head of Research and Development, approach the conversation with a sense of urgency. “We know that failure to mitigate the worst impacts of climate change not only threatens lives and livelihoods across the world but could materially impact many businesses. Therefore, every food business must play its part in reducing greenhouse gas emissions across the value chain.”

Unilever, one of the biggest ice cream makers in the world, is working to perfect new formulations that allow its products to be stored and transported at  $-12^{\circ}\text{C}$  or higher. The company says the change, up from its longtime set point of  $-18^{\circ}\text{C}$ , equates to a 20% to 30% energy savings across its supply chain and retail freezer footprint. It has already completed a successful pilot in Germany and is launching another, larger pilot in Indonesia.

Similarly, Nomad Foods, the owner of Birds Eye, as well as Green Cuisine, Findus and Iglo, has investigated the potential to store its frozen foods at a higher tempera-

ture. In March 2024, the company released the latest update from an ongoing study that found a storage temperature of  $-15^{\circ}\text{C}$  could reduce freezer energy consumption by 10% without affecting product safety, texture, taste or nutrition.

“We have the potential to significantly reduce energy use when storing frozen products, without reformulating,” explains Tetradis-Mairis. “Delivered at scale, this could revolutionize our industry and deliver substantial energy use and cost reductions for manufacturers, food retailers and consumers and further reduce the carbon footprint of frozen food products.”

### Food Loss and Waste

Beyond energy consumption, Dr. Stephen Neel, Vice President of Global Food Optimization at Lineage Logistics, reasons that frozen foods are an important part of the food ecosystem because they can help reduce food loss and waste. He points to research from the *British Food Journal*, which concluded that frozen foods generated 47% less food waste in the homes of consumers who participated in the study, as compared to ambient and chilled food.

More than one-third of food produced for human consumption is lost (14%) or wasted (17%), according to the Food and Agriculture Organization of the United Nations. This comes at an estimated cost of \$936 billion annually.

Wasted food is also a waste of the land it is grown on, along with water, labor and other increasingly scarce resources. As food waste breaks down in landfills, it adds to the greenhouse gas problem that is the root cause of the effects from climate change.

“Increasing access to food does not require more food production, rather it's a matter of ensuring that the food we have reaches people in a safe condition for consumption,” Neel adds. “We believe freezing more of our food would help increase accessibility by smoothing out the effects of seasonality and allow current production levels to feed more of the world, even in the face of an increasing population and a supply chain facing geopolitical challenges.”

Nonetheless, Neel acknowledges that “optimizing the utilization of food and increasing

the amount of food that is temperature-controlled in our system may result in higher energy costs for the industry.” Based on a study conducted by researchers at the University of Birmingham, London South Bank University and the International Institute for Refrigeration, Neel says it is believed that those costs could be offset by improved efficiency and better use of resources across the frozen food chain – without compromising food safety or quality.

### Revisiting -18°C

This belief, backed by the new research, is why DP World and others including Lineage, AJC Group, A.P. Moller-Maersk, Daikin, the GCCA, Hapag-Lloyd, Kuehne + Nagel, Mediterranean Shipping Company, Ocean Network Express, Americold and Unilever, just to name a few, have signed on to The Move To -15°C. The initiative, launched at the United Nations Climate Change Conference, COP28, in Dubai, is open to the entire industry, from food production through the frozen supply chains to the end consumers.

“There’s nothing more immoral than food waste,” says Hoffmann. “Our first obligation is to make sure that consumers are protected. That will always be the number one priority in the food supply chain. So, if we say that the cold chain or the supply chain is adding any risk to consumers, then of course we shouldn’t do it. Second, does it contribute to food waste or unnecessary food spoilage? If the answer is yes, then of course we shouldn’t do it.”

But, Hoffmann continues, “If the answer is no to those things, then we have reason to change the temperature for storing food products at a slightly higher temperature to reduce the amount of emissions that is generated to keep the product cold.”

Many questions remain. Peer-reviewed scientific evidence of the safety, cost-savings opportunity and the impacts on the environment and food security is needed.

“I believe the role played by frozen food to achieve food security and resilience, the potential energy wins associated to the 3 degrees as well as the technological progress, such as instantaneous temperature-controlled logistics, smart controls and time-temperature integrators, makes this initiative worthwhile

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“If any of the ‘runners’ in the race cannot change the temperature setting from -18°C to -15°C, then the temperature setting reverts back to -18°C.”

*Dirk Hoffmann, DP World*

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to investigate,” Allouche says. “However, scientific evidence on food quality and practical storage life is needed to move forward with this initiative.”

### World Stage

Last year, at the United Nations Climate Change Conference, COP28, a cold chain delegation presented research and led discussions on the merits of moving to a -15°C set point. Some of the world’s leading experts on climate change participated.

An international team of scientists presented a study, “Three Degrees of Change,” backed by DP World. It found that the move from -18°C to -15°C could safely reduce food loss and cut carbon emissions by 17.7 million metric tons of carbon dioxide per year.

DP World and other collaborators, including GCCA, participated in a COP28 session on the new technologies that could make this the right time to give the move to -15°C serious consideration.

“Cold chain operators serve their customers, they meet the customers’ specifications and requirements,” says GCCA’s Shane Brennan, Senior Vice President for Global Communications. “We will always be the followers, to a certain extent, of the industry practice, because we provide solutions in line with the rules laid down by regulators and our customers. Nonetheless we have an obligation to look at how we can do this in the most resource-efficient way possible. We wanted to bring expertise and practical logistical knowledge to COP28 and show our support for the process and journey to see what will be achieved.”

Brennan says participating in COP28 gave GCCA an opportunity to educate the world about the value of frozen food. “One of the things that actually comes alongside this is

reminding everybody in the sustainability world of just how valuable frozen food is as a frontline against climate change.”

### Farm to Fork

Beyond the need for more robust scientific evidence, perhaps the most vexing challenge ahead for this movement is managing change across a global industry.

Participants in the coalition are clear about the need for alignment from farm to fork, as Hoffmann puts it. Although industry-level organizations, including GCCA, are involved in the coalition, Hoffmann observes that there is no single entity looking at the full supply chain – and he wants this to change.

“The frozen supply chain is like a relay race as the products are handed over from one entity in the supply chain, starting with food producers to end users,” says Hoffmann. “If any of the ‘runners’ in the race cannot change the temperature setting from -18°C to -15°C, then the temperature setting reverts back to -18°C.”

Hoffmann also notes that policies, legislation and laws may need to be changed across the many trading countries in the world. “At the end of the day, this is an initiative that will only succeed if we all work together,” he says.

Tetradis-Mairis, who also stresses the importance of industry-wide collaboration, says he hopes that “we can come together and build on Clarence Birdseye’s legacy, transforming the next 100 years and beyond for the frozen category. There’s no doubt that it will be a challenge, but we are very excited by the opportunity that lies ahead.”

**GINA VEAZEY** is a writer and editor who specializes in food industry, business and health care topics.

EMAIL: [gina@veazeymedia.com](mailto:gina@veazeymedia.com)



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# ROUTING THROUGH THE RED SEA

*Cascading risk in a maritime crisis zone.*

By Alexandra Walsh

**M**aritime shipping is under pressure at a few different chokepoints around the world. Vying for the most serious stress test are attacks on cargo ships in the Gulf of Aden and the Red Sea, an essential route for vessels transiting the Suez Canal.

Disruptions caused by the Red Sea crisis most directly affect supply chains connecting Asia and Europe. The alternative transit routes incur higher shipping costs and many days of delay for Cape of Good Hope sailings around Africa, while the slower roundtrip routes may require additional shipping capacity.

## **Wasted Time**

The impact of risky and reduced shipping via the Red Sea and the Suez Canal is not just limited to Europe-Asia supply chains. Shipping rates for container routes from North Asia to the U.S. East and West Coasts, and the east coast of South America, have increased by a similar degree to Europe-bound routes.

These same ports in the Americas have also been directly impacted by reduced shipping capacity on the Panama Canal because of its historically low water levels. Liners looking to reduce their exposure to the Panama Canal once would have considered shipping via the Suez Canal as a back-up option. Now, using the Cape of Good Hope instead of the Suez Canal will also add many days to an Asia-U.S. East Coast route.

“The reason why the Red Sea is so crucial to trade is really very simple,” says Cyrille Filott, Global Strategist Consumer Foods, Packaging & Logistics at Rabobank. “It takes eight to 15 days longer, depending on where freight needs to go, to get around Africa

instead of passing through it,” he says. “Mediterranean markets will be impacted more as shipping times are longer.”

Filott noted also that occasionally the weather around the Cape of Good Hope can be bad in the spring leading to potentially more delays.

“Looking at the big picture, I am worried about the downstream equipment flow – a lot of mainly empty containers are passing through the Suez Canal, or stuck in the wrong locations,” says Thomas Eskesen, Founder of Eskesen Advisory. “These kinds of disruptions might not be obvious now, but they will hit downstream, and the cascading effect could be pretty significant. Every week it goes on, the worse it will get.”

Eskesen warns customers that have not logged in their pricing and space/equipment commitments might be in for a surprise because of the scarcity of containers now that they can’t be moved around as freely as they once could.

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The Administration and Congress are considering a wide range of policies that could impact the cold chain in 2024. Key issues:



### FARM BILL

- GCCA will be actively engaging with Congress to advance cold chain industry initiatives and priorities.



### CLIMATE CHANGE

- Pursuing aggressive policies to address climate change, through both executive action and legislation
- Implementation of the AIM Act to phase down HFCs



### TAXES

- Increasing the corporate tax rate, phasing out deductions for pass-through entities
- Raising the top marginal income-tax rate



### LABOR

- Strengthening worker organizing, collective bargaining and unions through executive action and legislation such as the PRO Act
- NLRB advancing labor initiatives, like 'micro-unit' organizations and joint employer policies



### BURDENSOME REGULATIONS

- Revising EPA's Risk Management Program (RMP) regulation and making additional requirements
- Changes to OSHA's Process Safety Management regulation
- Implementation of FDA's Food Traceability Rule

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## Economic Fallout

“We have seen the spot price on dry goods go up from China and to and from key markets,” says Eskesen. “We think that the bottom of the reefer rates has been reached and then rates come up again.”

Filott notes there were a lot of stories on how the additional costs may impact inflation; but Rabobank believes that it may not be that bad. “Yes, the additional costs will add to the cost price of some products, however unless the product has a low price per kilogram, then the impact will be small,” he says. “The one thing that may keep people awake at night is what if the Strait of Hormuz becomes part of this as well; then some of the energy supply to Europe might come into jeopardy.”

“The Red Sea crisis is a pretty massive event, probably the event the shipping lines were fearing most from the perspective of crew safety,” says Eskesen. “For mankind, hopefully this is over soon, but it has already done enough damage to impact the second quarter, and we should all be concerned.”

Eskesen notes there have been product shortages in the Middle East, which means if a retail customer is accustomed to buying bananas in the supermarket in Saudi Arabia or Dubai, some of those bananas will come from the Philippines. “On the surface that seems fine but then the goods that come through the Suez Canal from Ecuador or Costa Rica, don’t make it to the market, and that means we see commodity prices more than doubling because of shortages.” Eskesen adds, “As things become the new normal we are seeing more consistent supplies.”

Eskesen says he was interested to see how the stock market reacted through the initial crisis. “The stock market reaction has been very positive with some shipping company shares up more than 25% since the crisis happened,” says Eskesen. “So, the stock market thought that this would actually be a good thing, and that bottlenecks are good for shipping lines as they tie up capacity of ships and equipment.” He adds, Maersk has made it public it does not expect a longer term positive benefit as it incurs additional fixed costs for vessels and containers, and since then, the share price went back to where it was before the crisis.

## Shelf Impact

Filott says Rabobank looked at how alternate shipping routes are impacting food prices and

product availability in the Netherlands. “The largest product imported in terms of value is palm oil followed by coconut oil. Also ginger, grapes and cashews come from Asia and are therefore impacted. Frozen products coming from the East are for example shrimp and other seafood,” he says. “And don’t forget – Europe also exports frozen products to the Middle East and Asia, including pork and frozen bakery.”

Eskesen says he recently spoke to banana exporters who told him the travel time from Ecuador to the Middle East has gone from 35 to 50 days. He points out that impact for commodities with limited shelf life could destroy businesses completely. “Picture you’re a farmer in Kenya and your transit time to the end market can’t take more than two to three weeks – the shelf life of your product. Or a grape exporter in India, with a primary market in Europe, who now has to add two weeks to shipping time and hope that multiple shipments don’t get backed up and arrive at the same time.” Eskesen adds, “That cascading effect in delivery to retail is horrible.”

Eskesen says the banana exporters are shifting operations from Ecuador eastward. “In all fairness, they didn’t ask for this, but they also don’t blame the shipping line,” he points out. “What they’re all looking for now is stability and predictability, and what they value is service providers that are honest and transparent with them and actually plan for such contingencies.”

## Lessons Learned?

Industry analysts are wondering if cold storage and logistics companies are likely to be more resilient to the Red Sea crisis having experienced and learned from other recent supply chain shocks ... like a global pandemic.

“I do know for sure, many in the broader food industry have elevated the role of supply chain officer to a management team role,” notes Filott. “Making sure supply chains function is still more critical than it was in 2019. So probably the answer is yes, they are more resilient.”

The Red Sea crisis is very different from the pandemic, believes Eskesen. “The bottleneck is different as the congestion during the pandemic was at the ports, now the primary problem is shipping times are getting longer. The pandemic actually generated activity for the shipping industry as we all added home offices and new kitchens.”

Eskesen says what is similar is that crews were at risk during the pandemic as they are during the present crisis. “One of the primary reasons for diverting ships away from the Red Sea is to protect the crew’s welfare and avoid anyone getting shot,” he says. “But in the pandemic, people were stuck on ships and couldn’t get off for months, if not years, and it was very dramatic from a crew welfare perspective.”

## On the Horizon

The Red Sea crisis is directly responsible for cargo shipping delays and price increases in the short term. While the attacks on vessels are tied to an unpredictable conflict in the Middle East – shipping experts expect delays and cost increases are highly likely to continue as shipping firms plan for a protracted conflict.

Eskesen says whenever you prepare contingency plans in the shipping line, it’s for the worst case scenario ... such as the blocking of the Panama Canal or the Suez Canal. “The shipping lines are in crisis mode, I don’t think they could have done anything to prevent the delays, but they’ve seen similar scenarios before, and they know they have to be forceful in rerouting ships as soon as possible.”

Looking to the rest of 2024, Eskesen says geopolitics with two “regional wars” is the biggest threat to global trade and carriers’ positioning of refrigerated equipment will be hampered by the Suez Canal diversions, even after stabilization.

Eskesen says the question of when the Red Sea crisis will end is on everyone’s mind at industry conferences. “It’s political, it’s emotional, it’s fueled by so many things, absolutely no one has any idea,” he says. “But, if you were a food importer/exporter asking for the truth, I would tell you to brace yourself for a much longer contingency as it doesn’t look like the crisis is going away anytime soon. The Saudi’s fought with the Houthis for more than six years and they are still around, arguably with even more credibility as defenders of a Palestinian state.”

Filott says he cannot comment on what the future holds for the Red Sea, “If only I knew...” ☺

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

**EMAIL:** [awalsh@associationvision.com](mailto:awalsh@associationvision.com)

# C=BA

## BUILT BY THE BEST CASE STUDIES

By Keith Loria

### NEWCOLD'S 'DO IT YOURSELF' AUTOMATED WAREHOUSE

NewCold needed an automated warehouse in Fiorenzuola d'Arda, near Piacenza, Italy. When completed, the \$70 million project would have storage for more than 72,000 pallets and a state-of-the-art automated logistics system designed for frozen goods.

Luca Quaresima, NewCold's Country Manager for Italy, noticed that Italian frozen food producers were seeking a solution that could significantly reduce lead times and streamline their logistics processes. They were looking also for a sustainable and energy-efficient approach to support business growth.

"Our aim was to provide a solution that not only met these challenges but also positioned them competitively in the international market," says Quaresima. "Our model, NewCold, emerged as the ideal response to these needs having demonstrated its efficiency and effectiveness globally."

Quaresima explains they tailored and customized the design to fit the specific requirements of their Italian NewCold clients. He says it was a process refined through collaboration and hands-on market testing following the acquisition of a historic Italian logistics hub two years prior.

#### Integrating Energy

Sustainability was a key focus in the approach. NewCold was committed to integrating various renewable energy sources to minimize the environmental impact of the building. This approach included harnessing energy from solar panels, using combined heat and power (CHP) systems and



The facility is located in Fiorenzuola d'Arda, near Piacenza, Italy. (Photo by Flavio Chiesa courtesy of NewCold.)

implementing smart energy usage, such as recovering energy from NewCold's material handling equipment installations.

"We aimed to create a solution that was not only efficient but also environmentally friendly for our clients," Quaresima says. "The NewCold model, proven successful in various international settings, offered a sustainable approach that aligned with our clients' environmental goals. Additionally, we designed it to enhance competitiveness in the global market, ensuring our clients could optimize their routing to market and control costs effectively."

NewCold partnered with Isopan to supply 409,000 square feet of insulated sandwich panels for the casing of the facility to ensure

superior thermal efficiency. These panels increased the energy efficiency of the facility, exceeding 60% compared to corporate competitors.

#### Tricky Timeline

The project kicked off in November 2022. NewCold initially allocated 18 months for its completion, starting from the acquisition of the necessary permits to commence work.

"Despite the complexities introduced by the COVID-19 pandemic and the market challenges characterized by a shortage of electrical components, we managed to adhere to our timeline," Quaresima says. "This was made possible through a highly integrated and vertical structure, where a significant portion

of the know-how was internalized. The professionalism of our team played a pivotal role.”

The COVID-19 pandemic presented unprecedented challenges. The global scarcity of electrical components was a significant risk to progress. However, Quaresima notes that the robust and integrated structure played a crucial role in navigating these difficulties.

“Having a substantial amount of in-house expertise allowed us to adapt swiftly to changing circumstances,” Quaresima explains. “Our dedicated team’s professionalism and commitment ensured that we could successfully mitigate the challenges posed by the pandemic and adhere to our project timelines.”

NewCold’s integrated and vertical structure consisted of a comprehensive in-house approach where a significant portion of the project’s critical knowledge and capabilities were housed within the organization. This included expertise in various stages of the project, from obtaining permits to the final execution.

“This structure proved invaluable during the challenging times brought about by the pandemic, allowing us to maintain control over key aspects of the project and respond swiftly to unforeseen obstacles,” Quaresima says. “Our success hinged on strong and collaborative relationships with our suppliers. The scarcity of electrical components in the market during the project posed a serious threat. However, our proactive engagement with suppliers, built on trust and professionalism, allowed us to navigate through these challenges.”

Additionally, the open lines of communication and mutual understanding enabled NewCold to address issues promptly, ensuring a steady supply chain and ultimately allowing all project deadlines to be met.

### Collaboration Counts

On the verge of completing the warehouse roof, an unexpected summer storm, one of the biggest in almost 25 years, disrupted the roofing process and was a big challenge.

“It left the roof partially uncovered right when we were about to proceed with the installation of various conveyors and material handling equipment,” Quaresima says. “Typically, installing material handling equipment in an open environment would have been impractical, leading to a significant project delay.”

However, the project team, in collaboration with the suppliers, devised a savvy solution –



The middle stage of the project. (Photo by Flavio Chiesa courtesy of NewCold.)

they implemented temporary shelter systems to allow the installation of equipment, ensuring progress despite the weather challenges.

“It was a testament to the resilience and problem-solving abilities of our team and the strong partnership we maintained with our suppliers,” Quaresima says. “This approach allowed us to continue with the project timeline, ensuring that equipment installation progressed alongside the ongoing roof coverage. Recognizing the urgency, both parties worked closely to develop a solution that would allow the installation of material handling equipment despite the weather challenges. Open lines of communication, mutual understanding and a shared commitment to project success were instrumental.”

### Design Details

The completed facility consists of a 130-foot high bay, a dispatch center for receiving and deploying items and an area for picking. The

building has jointless concrete slabs with 1 mm differential deflection tolerance; multiple evaporators located on service platforms at high levels of the high-bay facility; and a concrete structure with a suspended concrete pick-floor level.

The entirety of cold storage included in the dispatch area is kept at -25° Celsius to guarantee the integrity of the cold chain. What’s more, the products are all stored in areas that are only accessible by automation, ensuring the top food safety standards.

“I would like to extend my heartfelt gratitude to every individual who dedicated their time and effort to this project,” Quaresima says. “Their commitment and passion went above and beyond, overcoming obstacles with unwavering determination. It is their hard work and dedication that has brought this project to fruition. Thank you also to our investors and Westport Capital that helped to make it happen and trusted the potential of the Italian market.”



Illustrating the progress that has been made since the early stages of the build. (Photo by Flavio Chiesa courtesy of NewCold.)



## BIG-D CONSTRUCTION DESIGN/BUILDS FOR ETHICAL MEAT PROCESSOR

A leading purebred Angus cattle operation in the United States, known for its ethical livestock management and protection of the environment, Riverbend Ranch wanted a new meat processing plant in Idaho Falls, Idaho. The company's goal was to have its new building reflect its core values.

The owners of the Riverbend Ranch found a builder that aligned with their sustainable philosophy. They selected Big-D Construction Corporation for this forward-thinking project.

"This was an existing customer that we have built more than 20 projects for in Utah and some in Hawaii, and most of the projects were industrial," says Forrest D. McNabb, President of Big-D Construction Corp. "They knew our strength in the food and beverage world, and so they brought us on board to help them develop the project."

### It Was Hell

Considering the project was undertaken during the pandemic, it presented a challenge to keep up with the schedule.

"They wanted to have harvest and product running through the plant by December 2022," says Bryan Willis, Senior Project Manager at Big-D Construction Corp. "We started working on the building in December 2021, and we were able to meet their deadline for the following year."

Big-D Construction started the build utilizing primarily pre-cast concrete walls and insulated metal panels with a cast-in-place concrete basement.



Big-D Construction built a modern processing facility for Riverbend Ranch with the capability to humanely process animals from harvest to finished packaged product. (Photo courtesy of Big-D Construction.)

One of the challenges with the build was that the Riverbend Meats Processing Plant had to be built on top of a lava field that required drill and shoot/controlled blasting throughout the project building and site development.

Willis explains that the 4,000-year-old natural feature, known as Hell's Half Acre, increased the complexity of excavation far beyond any typical construction site and increased costs significantly.

"Teams had to employ demolition techniques to excavate footings and foundations as well as trenchers equipped with diamond blades to place utilities," Willis says. "In total, more than 44,250 pounds of

TNT explosives were required to remove basalt material."

Culinary water was also a challenge and required a new well to be drilled. With a water table 320-feet below grade, crews blasted through 500 feet of volcanic rock for the new well.

Another challenge was that the area gets extremely cold with big winds blowing from the southwest. As a result, the schedule for lifting and hoisting cranes needed to be completed in a limited time period. The Big-D Team also had to contend with the accumulation of snow and ice, which played havoc with the schedule.

“It really was like construction in the Arctic where you get blinding, driving snows, and it was just brutal,” McNabb says.

Utilities at or near the site were nonexistent, which presented a major challenge in and of itself. Everything had to be extended to the project, which was not only a logistical challenge, but it was also a considerable cost factor. Electric power lines were brought in from 2.5 miles away and 9 miles of gas line was installed to reach the site.

### Building Values

The Big-D team worked closely with the architect and processing designer to provide input on numerous project elements like designing a highly functional layout, material selections and optimizing the plant for maintainability.

Creating a more humane facility was also a big priority for the owner. Having cattle sourced essentially at the site is a significant part of the finished project, as the animals avoid the immense stress of being transported prior to harvest.

Additionally, the Riverbend plant features a drover lane ramp from the pens to the building entrance. A drover lane, originally developed by famed animal behaviorist and consultant Temple Grandin, is a walkway into the plant that is wider and has high, solid walls in a curving, serpentine shape, meant to keep the livestock moving forward and free from distraction. The drover alley at Riverbend was constructed of concrete.

### Fueling Sustainability

To the east of the site, a 20 million-gallon irrigation pond and a pump station were built to enable water used in processing to be captured, processed and reused.

The plant also minimizes its environmental impact with the use of a 5.1 million-gallon covered anaerobic lagoon that captures and pre-treats animal waste and an adjacent biogas and reuse building. These systems capture, treat, and reuse processing waste as fuel for the plant. This biofuel used on-site is carbon neutral, because the CO<sub>2</sub> that is created when burning it has been already removed from the environment over the organism's life.

As a major contributor to the project's success, Big-D's Virtual Design and Construction department utilized 3D modeling and other tools in the early stages of design and construction, which enabled the design team



The design-build by Big-D included a two-story office. (Photo courtesy of Big-D Construction.)

to make modifications to equipment placement that ended up improving the layout of the facility.

Completed at the end of 2022, the more than \$100 million Riverbend Meats plant is a modern processing facility with the capability to humanely process animals from harvest to finished packaged product and has a strong positive impact on the local community and the ranching industry.

The completed facility includes a large fabrication area with state-of-the-art equipment, 28-degree box cooler, -10° freezer, multiple Hot Box chillers, a cold dock with eight dock-height doors, order fulfillment space, a two-story office, and various support spaces. In total, the facility offers seven

temperature zones.

Now that this new plant is in operation, Riverbend Meats is able to produce a superior and healthier beef option for the public.

“This owner is committed to the Idaho Falls area and you can see by this plant, he is very selective with design and equipment – the details that went into the design/build were mindboggling,” McNabb says. “The quality of this project and product is unmatched.”

**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.

**EMAIL:** [freelancekeith@gmail.com](mailto:freelancekeith@gmail.com)



Big-D Construction designed the facility to have seven temperature zones. (Photo courtesy of Big-D Construction.)

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pablo.ortega@marcusmillichap.com  
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**Shawn Arnett**  
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Direct: 858.373.3207  
shawn.arnett@marcusmillichap.com  
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# TAKING THE COLD CHAIN TO CAPITOL HILL

*GCCA to host U.S. industry leaders and government officials at this year's Policy Forum.*

**G**CCA is excited to announce the 2024 Cold Chain Policy Forum will be held in person from June 24-26 at The Royal Sonesta Hotel Washington, D.C. Capitol Hill.

The Policy Forum has already established itself 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 cold chain industry.

It also provides the opportunity for engagement with key federal agency officials and congressional meetings.

This year's Policy Forum will be held at the newly opened Royal Sonesta Washington, D.C. Capitol Hill. The newest member of The Royal Sonesta portfolio features a sweeping glass façade, a 10-story atrium and a curated

selection of commissioned artworks. The hotel is conveniently located on Capitol Hill making it optimal for congressional visits as a part of the event.

In 2023, Policy Forum participants took the cold chain to the Capitol meeting with more than 30 House and Senate offices in support of the FRIDGE Act. Since those meetings, the FRIDGE Act has been introduced with bipartisan support in both the House and Senate.

During the 2024 Policy Forum, GCCA will look to build on this momentum by conducting additional congressional meetings and working to have the FRIDGE Act incor-

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## Up Close to Decision-Making Around the World

Bringing cold chain practitioners and experts together with legislators, regulators and policy influencers is a core purpose of GCCA. As well as the Policy Forum in Washington D.C., GCCA will be holding similar engagement events as follows:

### April 10 – Brussels

GCCA will facilitate the launch of a joint cold chain “Call to Action” in advance of the European Parliament elections in Brussels. As well as taking part in meetings with key officials and parliamentarians in the key ministries DG Trade, DG SANTE and DG AGRI.

### June 12 – Canadian Policy Forum

GCCA will hold its inaugural Canadian Policy Forum this June in Ottawa. GCCA members will meet with Members of Parliament and government agencies such as the Canadian Food Inspection Agency (CFIA), Agriculture and Agri-Food Canada and Transport Canada to discuss policy issues impacting the cold chain.



porated into the Farm Bill, which is currently under development.

The Policy Forum will also feature sessions with key U.S. federal agencies responsible for regulations and policies impacting the cold chain such as the Department of Agriculture, Food and Drug Administration, Occupational Safety and Health Administration and Environmental Protection Agency. In addition, the Government Affairs, Safety, Construction

Codes and a few other GCCA committees will hold their meetings in conjunction with this year's Policy Forum.

As we enter a new year with new policy opportunities and threats, ensuring your voice is heard by government officials is more important than ever. We hope that you will join us June 24-26 in Washington, D.C. For more information and to register for the Policy Forum, please visit [gccca.org](http://gccca.org). @

# THE CAMPAIGN CONTINUES...

As the U.S. Congress continues to debate the vitally important FARM Bill, GCCA continues to work across the legislature, recruiting support for the FRIDGE Act. Read here the opinion editorial, co-authored by Representative Randy Feenstra and GCCA's Lowell Randel, first published in *AgriPulse* on April 26, 2023.

To support this effort, you can take action today – visit [www.gcca.org/about/advocacy](http://www.gcca.org/about/advocacy)

The long-term success of American agriculture depends on robust access to new and developing markets. As the breadbasket to the world, our farmers grow and raise far more product than we can consume and use here at home. Therefore, we must actively work to open new export markets for American agriculture and eliminate trade barriers – both tangible and intangible – that prevent our agricultural goods from reaching foreign markets.

It's no secret that the United States remains an agricultural powerhouse. We export everything from pork, beef and poultry to corn, soybeans and wheat – cementing our status as one of the top countries for agricultural production globally. However, in recent years, that esteemed status faces obstacles and challenges. In Fiscal Year 2022, our country exported nearly \$196 billion worth of agricultural goods. That figure decreased to \$184.5 billion in Fiscal Year 2023 and is projected to further fall to \$170.5 billion this fiscal year. As a result, the United States will register a roughly \$30 billion trade deficit, impacting producers and our global competitiveness in agricultural markets.

We also face another challenge, which pertains to export capacity. In 2021, the top three markets for American pork – China, Japan and Mexico – accounted for 63% of U.S. exports. In that same year, the top three markets for beef – Japan, South Korea and China – accounted for 60% of U.S. exports. These few examples underscore the need to maintain these trading partners, but also establish new markets to build a resilient supply chain for producers.

Ultimately, one of the largest barriers to growing export markets for U.S. food and agriculture products is insufficient cold chain capacity in developing countries. Each year, billions of tons of perishable food products and millions of dollars of U.S. exports are lost due to poor cold chain systems in developing markets – restricting our export opportunities and exacerbating world hunger. Without proper refrigeration infrastructure, perishable goods destined for foreign markets are more susceptible to spoiling before reaching the consumer. That outcome is bad for our producers, our economy, families in other countries and global trade at large.

That's why we're working through the House Agriculture Committee to include the Fortifying Refrigeration Infrastructure and Developing Global Exports Act – or the FRIDGE Act for short – in the Farm Bill. This legislation would direct the U.S. Department of Agriculture (USDA) to administer the delivery of needs assessments, training and other technical assistance to enhance infrastructure capacity – including cold chain storage – in new and developing foreign markets. More specifically, the FRIDGE Act would add a section promoting infrastructure in the Foreign Market Development (FMD) program, and to fund this paragraph, funds will be authorized at \$1,000,000 annually from Fiscal Year 2024 to Fiscal Year 2028.

The power of this legislation is evident in a case study in the Philippines. In conjunction with the USDA, the Global Cold Chain Alliance spearheaded a cold-chain infrastructure project designed to increase exports to the island nation. The mission was a huge success. In 2002 – when the project was commissioned – U.S. exports of perishable goods to the Philippines clocked in at \$114.1 million. Just 10 years later, that number shot up to \$654.5 million, and just 10 years after that, exports of perishable American agricultural products reached nearly \$1.3 billion. So, from 2002 to 2022, the value of U.S. perishable exports increased by a factor of 11 while the average increase worldwide only grew by a factor of 3.5 during that 20-year period.

Developing new trading partners depends on reliable infrastructure, and the FRIDGE Act will help establish new export markets, especially for our hog, cattle and poultry producers. Integrating into growing markets early is essential for solidifying long-term, sustainable and profitable growth in our agricultural industry. Markets like those in Southeast Asia and Africa represent why this legislation is so vital. By helping gain a foothold for our producers, we can effectively diversify our trading partners, lessen our reliance on China and a few other countries for most of our exports, and help solve the main hindrance in the way of U.S. entry into many markets worldwide – infrastructure.

By passing the FRIDGE Act and responsibly investing in cold-chain infrastructure, we are hopeful that the incredible success in the Philippines can be replicated around the globe. With greater and more consistent access to new and developing markets, our farmers can keep more money in their pockets, our economy will realize serious financial benefits, and American competitiveness in global agricultural trade will strengthen. This legislation is undoubtedly a win for our producers, our economy and American trade expansion.

*Congressman Randy Feenstra represents Iowa's 4th Congressional District in the U.S. House of Representatives serving on both the House Ways and Means Committee and the House Agriculture Committee.*

*Lowell Randel is Senior Vice President of Government and Legal Affairs at GCCA.*

# 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.

### ACTIVE PROJECTS

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

*Partnered With Improving Economies for Stronger Communities (IESC)*

GCCF is gearing up to support the Cold Chain Market Opportunities and Infrastructure Assessment in collaboration With GCCA member, LixCap. This assessment will allow the project team to understand existing cold chain capacity in Honduras, El Salvador and Guatemala as well as identify new opportunities to enhance the ability to export perishable products through the cold chain.

#### **Bangladesh Trade Facilitation (BTF) Project, 2020 – 2025**

*Partnered With Venture37 and LixCap*

In 2024, GCCF is focusing on continued design-build assistance to various private sector companies interested in cold storage investments in Bangladesh. Additionally, the foundation will support local curriculum development to educate local commercial refrigeration technicians and engineers. This course will help to develop skilled technicians to provide service and maintenance for cold chain equipment.

#### **Dominican Republic TraSa Project, 2021 – 2025**

*Partnered With Improving Economies for Stronger Communities (IESC)*

The project is exploring the possibility of doing another regional study tour to examine in detail the best practices for conducting inspections that maintain an integrated cold chain. Additional training courses will be provided virtually from April to June 2024.



Juan Carlos Hencker leads a training in the Dominican Republic in January 2023.

#### **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. The goal is to reduce costs and build capacity for philanthropic food operations such as food pantries, meal kitchens and food banks. Other benefits of this partnership include reducing food waste, enhancing food safety and increasing access to food among underserved communities. Development is made possible by a grant from The Morningstar Foundation. This app will service the Washington, D.C., Maryland and Virginia (DMV) area with the hope of expanding to the rest of the United States in the future.

#### **Ongoing Industry Support to Reduce Food Loss and Waste**

GCCA welcomed the American Logistics Aid Network (ALAN) as a partner in the association's Food Maximization Initiative in 2024. The GCCA has formal partnerships with Feeding America, the Global Foodbanking Network, the European Federation of Food Banks (FEBA) and ALAN to redistribute food to increase food security and reduce food loss and waste globally. 🌐

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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 Scientific Advisory Council (SAC) and the roster of SAC members. Submit your cold chain questions to the Scientific Advisory Council at [www.gcca.org/inquiry](http://www.gcca.org/inquiry).

**Q:** From a food safety perspective, could we store products like fertilizers, pesticides or other chemicals in a traditional temperature-controlled 3PL? Are you familiar with the storage requirements for any of these products?

**A:** Chemicals including pesticides and fertilizers should be strictly segregated from food and not be stored so that there is a risk of contact with food. Even if pesticides or fertilizers are packaged well, there could still be a risk of contamination if the packaging is damaged. The manufacturer's instructions will usually specify any specific storage requirements for a chemical, fertilizer or pesticide including temperature storage requirements.

Recent regulatory requirements for shippers and loaders of food shipments in the United States, including rail and truck carriers, emphasize that temperature control, preventing food contamination by having non-food items in the same load or previous loads and protection of food from cross-contact (for example allergens) is imperative. See, 21 CFR Part 1, Subpart O – Sanitary Transportation of Human and Animal Food.

Physical segregation of fertilizers from food or food contact surfaces is required. Usually, a dedicated cold chain system such as that needed for perishable foods is not required for pesticides or fertilizers, but this is highly product-specific. It is important to be aware of potential temperature sensitivities for pesticides and fertilizers and store these items in the proper conditions to maintain product quality and effectiveness and ensure product safety.

Fertilizers and pesticides can be sensitive to temperature extremes or have a low flash point (meaning they can easily ignite). The flash point of ammonium nitrate is 93.3°C.

The temperature requirements for pesticides can vary depending on the specific active ingredient and formulation. Some pesticides might degrade or become less effective at high temperatures, while others might become more volatile causing their containers to expand and then leak. Freezing liquid pesticides, fertilizers or any liquid chemical could pose a risk to container integrity and potentially lead to a change in effectiveness in addition to leakage.

*This answer was provided by Dr. Barbara Rasco, Food Safety & Food Safety Regulations Expert, University of Wyoming. @*

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The Global Cold Chain Foundation (GCCF) 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 Sectors.



**Dr. Michael Jahncke**

Virginia Tech University,  
Fish Products Expert  
**SAC CHAIRMAN**



**Dr. Donald Fenton**

Kansas State University,  
Refrigeration Engineering  
Expert



**Dr. Jeffrey Brecht**

University of Florida, Cool-  
Climate Fruit & Produce Expert



**Dr. Brian Fugate**

University of Arkansas, Supply  
Chain Management Expert



**Dr. Patrick Brecht**

PEB Commodities, Refrigerated  
Transportation Expert



**Dr. Cody Gifford**

University of Wyoming, Meat  
Products Expert



**Dr. Paul Dawson**

Clemson University, Poultry  
Products Expert



**Dr. Dennis Heldman**

The Ohio State University, Food  
Process Engineering Expert



**Dr. Faris Karim**

Kansas State University,  
Ammonia Contamination & Food  
Toxicology Expert



**Dr. Subramaniam Sathivel**

Louisiana State University,  
Frozen Food Quality Expert



**Dr. Barbara Rasco, BSE,  
Ph.D., JD**

University of Wyoming,  
Food Safety & Food Safety  
Regulations Expert



**Dr. S. Paul Singh**

Michigan State University,  
Packaging & Labeling Expert



**Dr. Kees Jan Roodbergen**

University of Groningen,  
Logistics & Operations  
Management Expert



**Dr. Donald Schaffner**

Rutgers, The State University of  
New Jersey, Microbiology Expert



**Dr. Victoria Salin**

Texas A&M University, Agriculture  
Economics Expert



**Dr. Elhadi Yahia**

Universidad Autónoma de  
Querétaro, Mexico, Postharvest  
Technology, Tropical Fruit &  
Produce

**Have a burning cold chain question?**  
Submit an inquiry to the Scientific Advisory Council  
at [www.gcca.org/inquiry](http://www.gcca.org/inquiry)

# MEMBER NEWS

NEWS FROM MEMBERS OF GCCA CORE PARTNERS



**AR Racking** and Rudells Lagerinredningar have joined forces to design and implement a latest-generation warehouse for Pretec in Kungälv, Sweden. More than 6,000 spaces for

pallets have been integrated with key accessories such as collision protection, vehicle transit protection and label holders, which raise operational safety and efficiency standards.

**Colmac Coil Manufacturing's** second-generation owner and former CEO, Roger McMillan, has passed away at 81. Father of third-generation CEO and owner, Scott McMillan, Roger led Colmac Industries and Colmac Coil from 1974 to 2002. Under his guidance, Colmac Coil Manufacturing grew from a small manufacturer of steam coils to a much larger company with a portfolio of manufactured products related to heating and cooling.



**Emergent Cold Latin America** has acquired Red Polar, a cold storage business located in Bogotá, Colombia. The company also announced an immediate expansion of Red Polar that when completed will create a state-of-the-art facility with a 25,000-pallet capacity.

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# MEMBER NEWS

## NEWS FROM MEMBERS OF GCCA CORE PARTNERS

**Emergent Cold Latin America** has acquired a cold storage facility in Rio de Janeiro, Brazil. Located in metropolitan Duque de Caxias, it comprises almost 45,000 square meters across two warehouses plus a dedicated truck yard.



**GridMarket, LLC** announces its latest clean energy project with Performance Food Group, Inc. (PFG). The solar and battery storage project is part of a larger partnership that will increase sustainable operations, reduce costs and upgrade onsite infrastructure for future EV charger integration at select nationwide PFG facilities. The project at the PFG facility in Shafter, California, United States, consists of 1MW solar PV and a 250kW/550kWh battery storage system.

**Lineage** in New Zealand opened a new cold storage facility in Tauranga, New Zealand, its 25<sup>th</sup> facility across the country. The Tauriko facility has more than 3 million cubic feet of space, 16,000-plus pallet positions and access to the Port of Tauranga. Energy efficiency was a central consideration, and the warehouse is equipped with a rainwater harvesting system for refrigeration condensing, rapid doors on all chambers to minimize temperature fluctuations and features an 890kW solar array for power generation.



**PLM Trailer Leasing** has earned the 2024 New Jersey Top Workplace Award for the fifth consecutive year. The award is based on anonymous surveys sent to all employees to determine a company's commitment to its staff, customers, and mission. The employee

feedback measures culture drivers and engagement critical for success.



**Primus'** greenfield cold storage warehouse design/build for RL Cold and its tenant **Maersk**, in Baytown, Texas, United States, has earned LEED Silver certification from the United States Green Building Council (USGBC). Highlights include optimized energy performance in addition to 55 reefer plugs to help keep refrigerated trucks cool using electricity instead of burning diesel fuel.



**RefrigiWear**, a supplier of insulated work apparel for the cold chain, has acquired **Avaska**, known for its products with a more modern, European style. The company's port-



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# MEMBER NEWS

NEWS FROM MEMBERS OF GCCA CORE PARTNERS



Saxum assets are located in major distribution hubs like this cold storage facility in Phoenix, Arizona

folio now includes three insulated workwear brands – RefrigiWear, Avaska and Samco Freezerwear.



**Saxum Real Estate** announced its largest deal activity across its platform over the last

12 months. The company has a portfolio 2 million square feet of cold storage. It recently completed the recapitalization of five projects, including seven state-of-the-art buildings that total over 1.7 million square feet, and capitalized the development of a 262,000-square-foot cold storage facility in Charleston, South Carolina.



**WAGNER Fire Safety Consulting GmbH** welcomes new Managing Director Cecil von Dungern to its management team. In his position, von Dungern will focus on the worldwide expansion of Global Account Management. 



## GCCA CONVENTION

23-26 SEPTEMBER 2024  
BONITA SPRINGS, FL



Join us at the 133rd GCCA Convention, the premier global event for executives of temperature-controlled warehousing, logistics and transportation companies and industry suppliers eager to advance the cold chain.

Designed for senior-level professionals seeking solutions to their most pressing business challenges and opportunities, our educational program promises invaluable insights and strategies.

Don't miss out on our exclusive social activities, receptions, and the Supplier Showcase, providing suppliers with unprecedented access to forge relationships with key leaders in warehousing and logistics.

With over 570 cold chain leaders from 13 countries in attendance last year, this year's event expects to host over 600 industry leaders. Secure your spot now for an exceptional networking and learning experience!



For more information and to register, visit [gcca.org/events](https://gcca.org/events)



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# 2024 GCCA, GCCF and CEBA Global Events Calendar

APRIL

## 27<sup>TH</sup> GCCA EUROPEAN COLD CHAIN CONFERENCE & EXPO

10-12 APRIL 2024

Brussels, Belgium | Brussels Marriott Hotel Grand Place

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.



27<sup>TH</sup> EUROPEAN  
COLD CHAIN CONFERENCE  
10-12 APRIL 2024  
BRUSSELS, BELGIUM

MAY

## GCCF COLD CHAIN INSTITUTE AUSTRALIA

21-23 MAY 2024

Melbourne, Australia | Sheraton Melbourne Hotel

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.

**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.



COLD CHAIN  
INSTITUTE

Powered by the Global Cold Chain Foundation

JUNE

## GCCA BRAZILIAN COLD CHAIN CONGRESS

19-20 JUNE 2024

Sao Paulo, Brazil | The Gran Estanplaza Berrini

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

## GCCA COLD CHAIN POLICY FORUM

24-26 JUNE 2024

Washington, DC, United States | The Royal Sonesta Washington, DC Capitol Hill

The GCCA Global Policy Forum offers education and interaction with government and agency officials in regards to the rules and regulations that impact the cold chain.

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



GCCA COLD CHAIN POLICY FORUM  
WASHINGTON, DC

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.



COLD CHAIN  
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## AUGUST

### GCCF COLD CHAIN INSTITUTE BRAZIL

13-15 AUGUST 2024

Sao Paulo, Brazil | The Gran Estanzola 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.



### GCCA SOUTH 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.



## NOVEMBER

### 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.





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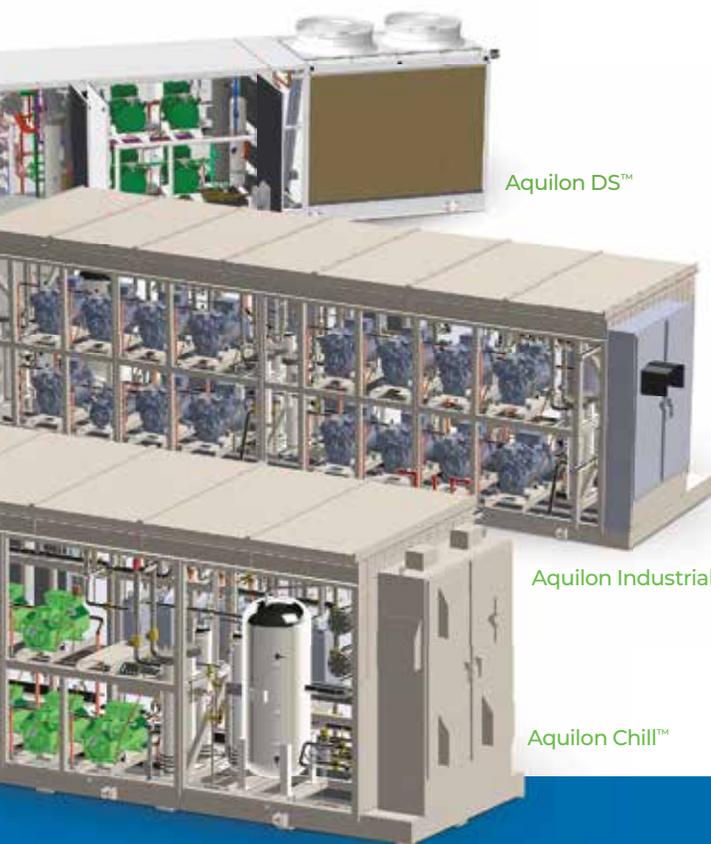
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# ASSOCIATION NEWS

NEWS ABOUT GCCA CORE PARTNERS

**GCCA** recently announced the dates and location of the 2024 Cold Chain Policy Forum, which will take place June 24-26 at the Royal Sonesta Hotel in Washington, D.C. This event is the premier policy event and fly-in for businesses engaged in temperature-controlled logistics. It features education sessions and keynote presentations focused on regulations and legislation that directly impact the industry, meetings with key federal agency officials, congressional meetings and more.

The primary audience includes third-party transportation, warehousing and logistics providers, controlled environment construction and related businesses. The Government Affairs Committee and a number of others will hold their meetings in conjunction with this year's Policy Forum. Additional details on the 2024 GCCA Cold Chain Policy Forum are available on the website.

**GCCA** continues to celebrate women's exceptional contributions to the cold chain industry! Our March recipient for Women in the Cold Chain Industry is Lauren Wilson from J.B. Hunt Transport. Her dedication and expertise have been instrumental in raising the standards and service excellence of J.B. Hunt's special initiatives.

Wilson has been with J.B. Hunt Transport for nearly 11 years. She graduated from the University of Arkansas with a degree in Agriculture Business in 2013. In her role as Senior Regional Safety Manager, she has been essential to the success of J.B. Hunt's food safety, health science and animal welfare programs.

Wilson works closely with all J.B. Hunt business units, including Operations, Sales, Legal, and Safety & Compliance. She helped build an elaborate food safety network that today reaches across the J.B. Hunt Trans-

port enterprise and impacts the U.S. supply chain from coast to coast. One of Wilson's most recent projects was developing and implementing a food safety program for the J.B. Hunt Transload facilities and aligning it with the Global Food Safety Initiative (GFSI) benchmark expectations.

She manages the company's Global Cold Chain Alliance – Cold Carrier Certification and trains both drivers and managers on Pork CheckOff TQA (Transport Quality Assurance) and U.S. Poultry PHT (Poultry Handling and Transportation) certifications. Lauren also has responsibility for maintaining BRC/SQF (Brand Reputation through Compliance Global Standards/Safe Quality Foods) requirements in addition to building customer specific Standard Operating Procedures to align with minimum customer requirements and FDA standards.

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# ASSOCIATION NEWS

## NEWS ABOUT GCCA CORE PARTNERS

To read more about Lauren or to nominate someone for this program please visit [www.gcca.org/about/cold-chain/women-in-the-cold-chain](http://www.gcca.org/about/cold-chain/women-in-the-cold-chain)



**GCCF** continues to provide a structured platform for food banks, food pantries and those working within the food redistribution/food maximization community to connect with the expertise and network of the perishable logistics industry. GCCF is offering free membership to these groups. This membership will enable organizations access to resources on appropriate perishable commodity storage temperatures and handling, sanitary transportation, and warehouse and energy efficiency. Benefits also include the ability to direct questions to GCCF's Council of Scientific Advi-

sors, a panel of experts covering all technical needs of the temperature control industry, and connect to the GCCA network of refrigerated warehouses, transportation assets, design build and refrigeration companies.



**CEBA** will launch a specialist/practitioner certificate training program in 2024. This initiative will establish an industry-wide certificate program, based on recognized best practices, to develop future professionals and differentiate CE contractors' personnel expertise in the marketplace. The three-day training program is designed for professionals with five or more years of experience in CE construction and/or closely related fields: Design Build General Contractor/ Thermal Contractor positions such as Site

Superintendents, Project Managers, Project Coordinators, Project Engineers, Professional Engineers, Estimators, Pre-Construction Managers, Pre-Construction Coordinators, etc. A pilot program will run in April and the full program will launch in October. @



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# NEW MEMBERS

## NEW MEMBER COMPANIES OF GCCA CORE PARTNERS

### GCCA WAREHOUSE MEMBERS

**Ready Bake Pty Ltd.**  
Virginia, Queensland, Australia

### GCCA ASSOCIATE MEMBERS

**Advanced Logistics LLC**  
Roseland, New Jersey, United States

**Armatherm Thermal Bridging Solutions Ltd.**  
Bradford, United Kingdom

**Double D Roofing & Sheet Metal, Inc.**  
York, Pennsylvania, United States

**EFAFLEX Tor – und Sicherheitssysteme GmbH & Co. KG**  
Bruckberg, Germany

**Enernova Partners**  
Westlake, Texas, United States

**Ethium by EControls**  
San Antonio, Texas, United States

**Kingspan – Isoeste Construtivos Isotermicos S.A.**  
Anápolis, Goiás, Brazil

**Qualiflex Indústria e Comércio de Equipamentos de Proteção Ltda.**  
São Paulo, Brazil

**SINA**  
Laval, Quebec, Canada

**STX Termoplásticos Ltda.**  
São José dos Campos, São Paulo, Brazil

### GCCF MEMBERS

**American Logistics Aid Network**  
Auburndale, Florida, United States

**Banco de Alimentos de México**  
Tepeji Del Rio de Ocampo, Hidalgo, Mexico

**Banco de Alimentos Panamá**  
Panamá

**Banco de Alimentos Quito**  
Pichincha Ecuador

**Biz Markie's Just a Friend Foundation**  
Glenarden, Maryland, United States

**Cultivate Food Rescue**  
South Bend, Indiana, United States



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# NEW MEMBERS

## NEW MEMBER COMPANIES OF GCCA CORE PARTNERS

### European Food Banks Federation asbl (FEBA)

Brussels, Belgium

### Hearts 2 Serve Food Pantry

Ragley, Louisiana, United States

### Regina Foodbank

Regina, Saskatchewan, Canada

### Sharing Excess

Philadelphia, Pennsylvania,  
United States

### CEBA MEMBERS

#### The Conlan Company

Farmers Branch, Texas, United States

#### International Coolers LLC

Dallas, Texas, United States

#### ITC Refrigeration Pte Ltd.

Singapore

#### Marsh McLennan

Dallas, Texas, United States

#### Peak Design Company

Jacksonville, Florida, United States

#### Polar Temp Thermal Insulation LLC

Monticello, Georgia, United States



## BRAZILIAN COLD CHAIN CONGRESS



19–20 JUNE 2024

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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](https://gcca.org/events)



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# COOL PERSON

PROFILING INFLUENTIAL PEOPLE CONNECTED TO THE COLD CHAIN INDUSTRY



When it comes to technology, the transition to alternative refrigerants needs to be underpinned with dedicated and robust training programs for service technicians.”

— DR. YOSR ALLOUCHE

## DR. YOSR ALLOUCHE

Dr. Yosr Allouche is the next Director General of the International Institute of Refrigeration (IIR). She is also one of the lead authors of the initial research report, “Three Degrees: Frozen Food in a Resilient and Sustainable Food System,” launched at COP28.

**CF:** What made you decide to pursue a career in the refrigeration and cooling industry?

**YA:** I am a refrigeration scientist with a background in ejectors modelling and cold storage using phase-change materials. My career was shaped initially by my PhD research work where I had been investigating solar cooling systems. I confess, by that time I was attracted by the controversial concept “solar” and “cooling,” and I was very curious to understand how this happens. And from there started the “cool” trip!

**CF:** What is the IIR, and what role does it play in the world of refrigeration and the cold chain?

**YA:** The IIR is an independent intergovernmental organization that provides knowledge about all refrigeration equipment and applications for different stakeholders through IIR-commissioned works, IIR conference series proceedings, scientific peer-review papers in the International Journal of Refrigeration, informatory notes for policy makers and so on. The IIR also provides technical sup-

port to low and emerging economies for the implementation of clean and energy-efficient cold chains. The IIR is a crucial partner to governments to successfully implement their National Cooling Action Plans.

**CF:** What does it mean to you to be selected as the next Director General of the IIR and to be the first woman to do so?

**YA:** This is a great honor and privilege. I will direct all my energy and enthusiasm to position the IIR as the world leading organization supporting countries to implement a sustainable refrigeration and heat pump sector. It should be also noted that I was elected thanks to my background and record in the sector, not because I am a woman. However, this is a very good achievement for women in a male-dominated field and also an incentive to empower more women and young people to join the Refrigeration, Air Conditioning and Heat Pump Systems (RACHP) industry.

**CF:** What are the most critical issues facing our industry right now, and are you optimistic about the future?

**YA:** Recognizing cold chains as vital and a critical infrastructure for food and health safety and security.

When it comes to technology, the transition to alternative refrigerants needs to be underpinned with dedicated and robust training programs for service technicians. Industry

needs to take one step ahead to be properly prepared for new regulations and schedules. Cutting-edge technologies and innovation are there, so yes, I am optimistic if all stakeholders show engagement to achieve the global target.

**CF:** You are one of the lead authors of the initial research report, “Three Degrees: Frozen Food in a Resilient and Sustainable Food System,” launched at COP28. What do you hope will come from your research conclusions and what are the next steps?

**YA:** As food safety is not an issue from the moment food is stored below -12°C (all microbial growth is inactivated), the next step is to investigate the impact of -15°C and temperature fluctuations around -15°C on food quality. Conclusions will be made after this step.

**CF:** What do you think is key to making international collaboration, in organizations like the IIR and the GCCA, relevant and successful?

**YA:** International collaboration is extremely important in our sector. Efforts need to be put together to contribute delivering an innovative and resilient sector.

**CF:** Do you have any advice on how to build a successful career in this industry?

**YA:** Believe in yourself. 🌐



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