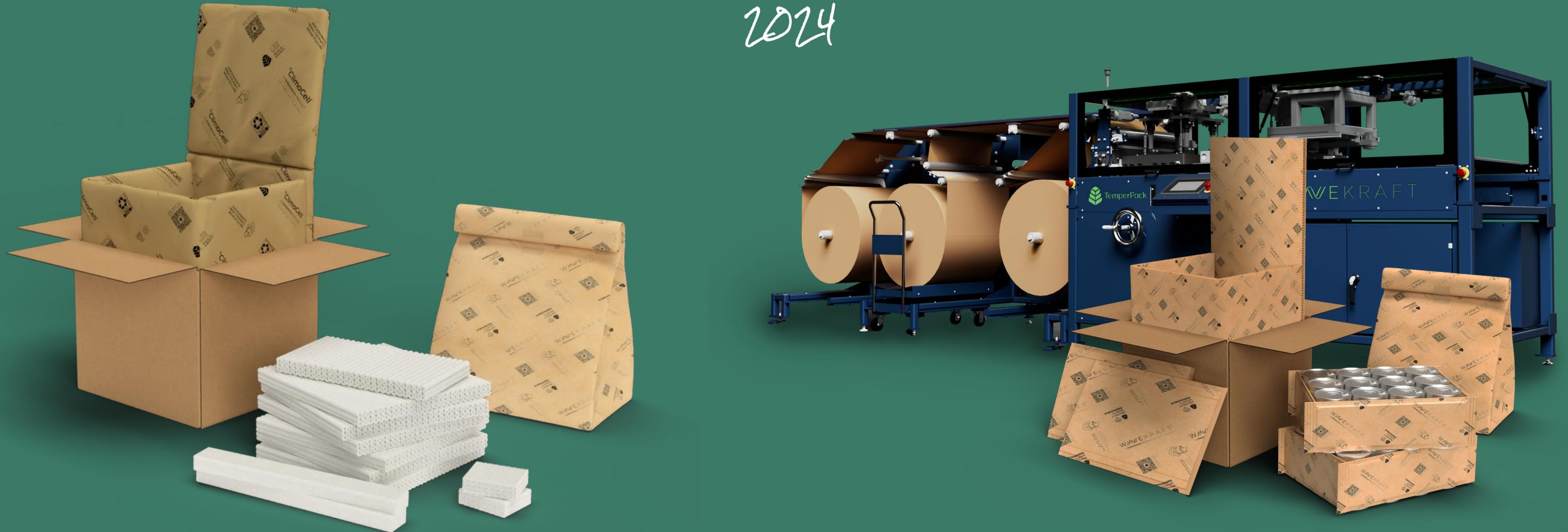




TemperPack

# Impact Report

2024





# REFLECTION

## 10 Years of Plastic Reduction: **Our Impact**

At TemperPack, our vision has always been bold: to become the most innovative, sustainable packaging company on Earth. We started ten years ago with a mission to disrupt the Styrofoam™ industry and help companies protect their products without unnecessary plastic waste.

In 2024, we continued pushing the boundaries of material science, process engineering, and packaging design. We've proven that sustainability and performance can go hand in hand—delivering real impact across the industries we serve.

Our focus today is on cold chain insulation for the Food & Beverage and Life Science sectors, and we're excited to expand into last-mile deliveries and protective packaging. This evolution is not only growing our business—it's increasing our positive impact.

We hold ourselves to high standards. We're not just helping others reduce waste; we're committed to improving our own footprint by minimizing waste, boosting efficiency, and building world-class products through world-class sustainable practices.

This year's Impact Report highlights key milestones and real-world applications that are changing the packaging landscape. As we move forward, we remain committed to a future where sustainability isn't just part of what we do—it's how we do it.

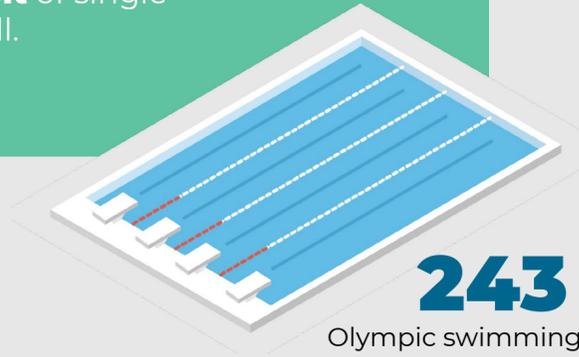
*PETER WELLS*, CEO



# QUICK STATS 2024 IMPACT

By choosing **TemperPack®** products, our customers have diverted **14,646 Mt** of single use plastic packaging from landfill.

By volume that's the same as:



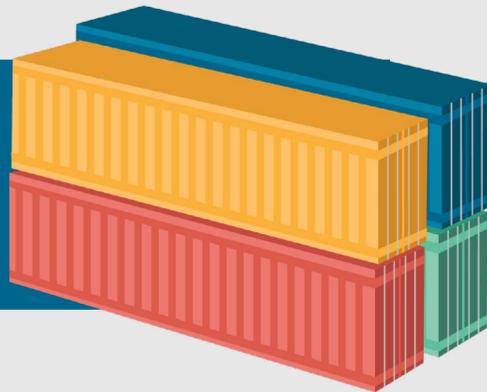
**243**  
Olympic swimming pools



Protected over **50 million shipments** with sustainable insulation.

By choosing **WaveKraft®**, our customers displaced an estimated **716,000 ft<sup>3</sup>** of plastic.

By volume that's the same as:



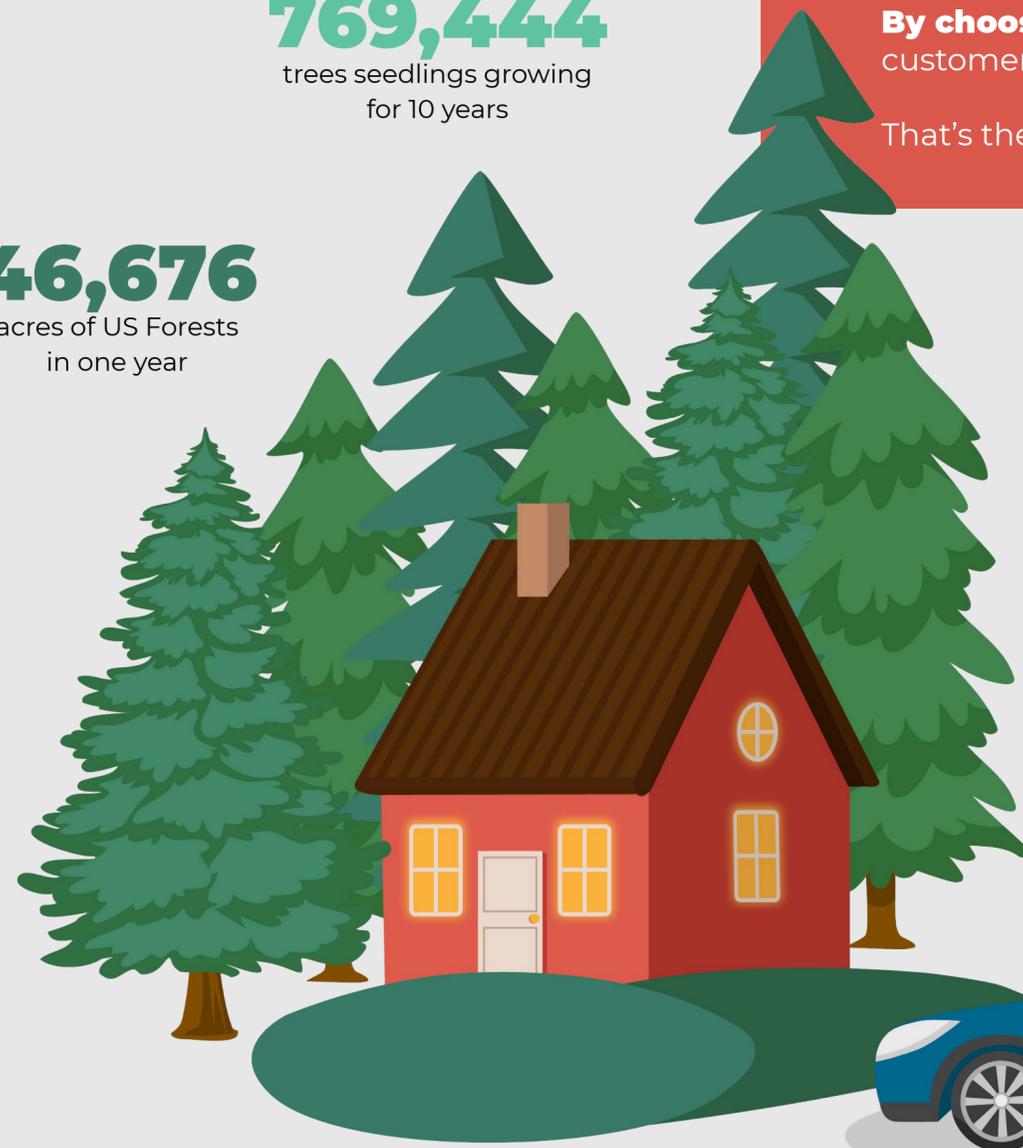
**298**  
Standard 40 ft shipping containers

the carbon sequestered by  
**769,444**  
trees seedlings growing for 10 years

**46,676**  
acres of US Forests in one year

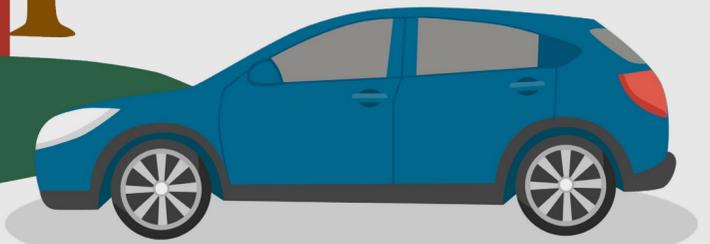
By choosing **ClimaCell®** instead of **EPS**, our customers avoided **46,534 MtCO<sub>2</sub>e**

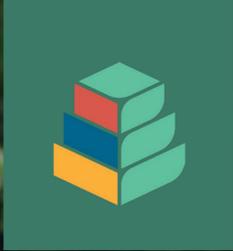
That's the same as the carbon emitted by:



**6,249**  
Homes worth of electricity for one year

**10,854**  
Gasoline-powered cars taken off the road for a year

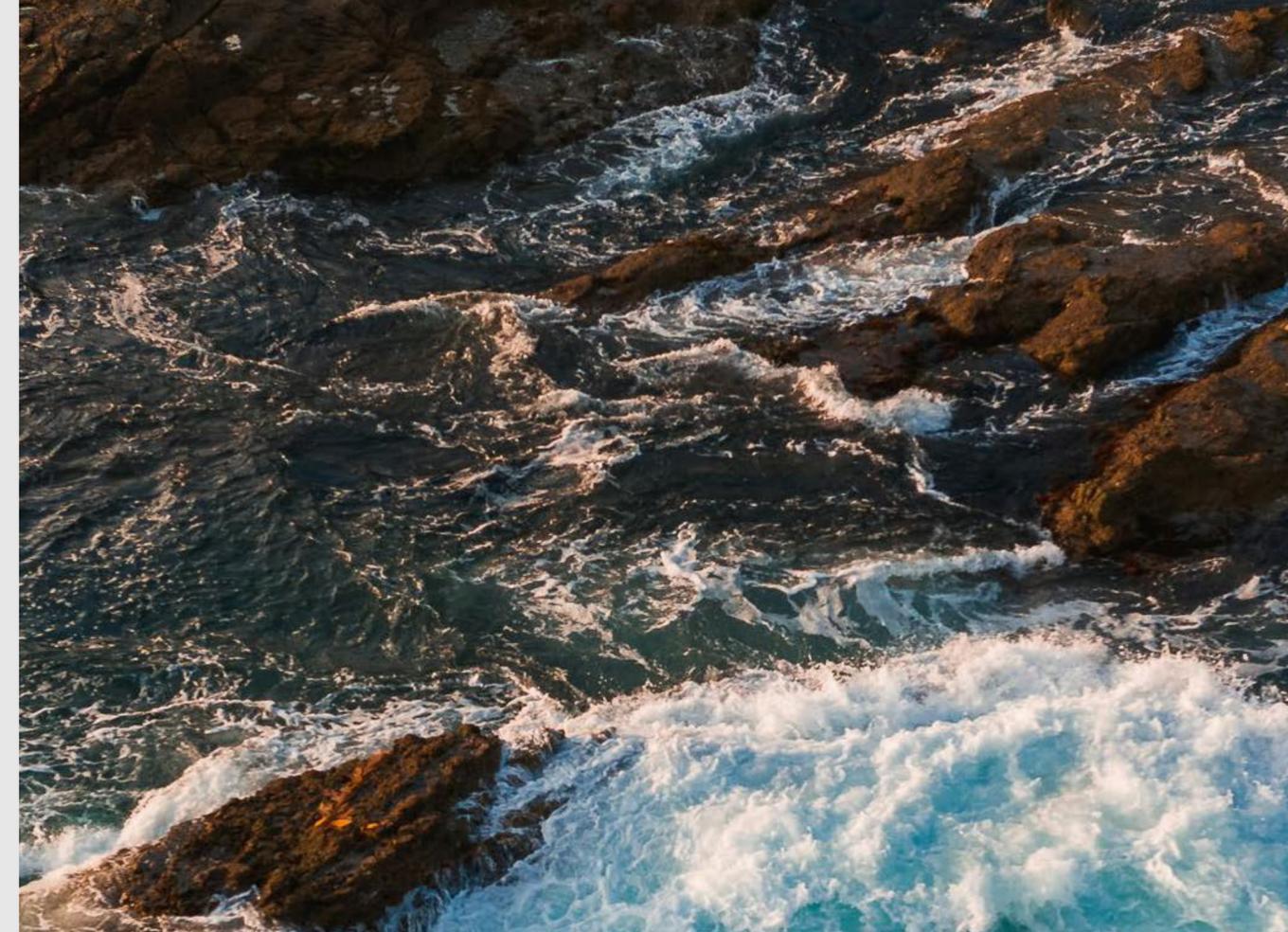




# Planet

## United Nations' Sustainable Development Goals

The Sustainable Development Goals aim to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate change, environmental degradation, peace and justice. The 17 Goals are all interconnected, and in order to leave no one behind, it is important that we achieve them all by 2030. TemperPack conducted an initial assessment, leveraged from SDG Action Manager tool, to guide, support, and drive alignment and integration of SDG practices most related to our business model. With the support of Duke University interns, the following goals were determined to be the most relevant for TemperPack and the customers who use our products.



### 2024 Carbon Disclosure Project SME Discloser

CDP is a global non-profit that runs the world's only independent environmental disclosure system for companies, capital markets, cities, states and regions to manage their environmental impacts. In 2024, TemperPack received a B score in CDP's SME reporting framework in our first year of reporting.





## Carbon Emissions

In 2024, we continued to leverage Position Green to streamline data management and sharpened our carbon accounting. This impact report shows our 2022, 2023, and 2024 emissions using Position Green's library of emission factors and framework guided by the GHG Protocol.

### Position Green

Position Green continues to transform our ESG program from reactive to proactive by automating analytics and establishing formal data-gather processes. We've customized the platform for our stakeholders' needs in order to leverage the visualizations for easy communication. Position Green provides visibility to our data that was previously stuck in emails, spreadsheets, and exchanged as tribal knowledge, and allows us to consider our sustainably metrics when making business decisions.

### Scope 1 & 2

Scope	Category	2024 (MtCO2e)	2023 (ton CO2e)	2022 (ton CO2e)	Change Since 2022 %
Scope 1	Mobile Combustion	154	170	183	
	Stationary Combustion	375	804	520	
<b>Total CO2e emissions, Scope 1</b>		529	974	703	-25%
Scope 2	Purchased electricity (market based)	4541	3,715	3,353	35%
<b>Total Emissions</b>		<b>5070</b>	<b>4389</b>	<b>4056</b>	<b>25%</b>



## Scope 3 and Carbon Intensity

As we continue to invest in our impact reporting methodologies, we improved our visibility into our Scope 3 impact. The more we learn, the more we recognize the complexities. For now, we feel the most transparent, responsible choice is not to report a number for this metric. In 2024, did identify on our material categories of Scope 3 emissions and anticipate a near full disclosure in 2026.

Meanwhile, in 2023 we aligned our vision of company growth and sustainability goals by defining our carbon intensity. A ratio between our scope 1 and 2 emissions over revenue, this metric will continue to serve as a guiding figure as we balance company growth with reducing our emissions and environmental impact. Our latest data is below.

Year	2024	2023	2022	Change Since 2022 %
Mt CO2e/\$1 Million Revenue	33.09	33.38	33.59	-1.5%

## Decarbonization

TemperPack is working Rappel to support our efforts to be sustainable inside and out. Rappel provides value-creating carbon reduction strategy, planning, and implementation for manufacturers and fleets.

**Rappel** They provide custom solutions backed by a streamlined engagement model and advanced carbon and financial modeling software. With Rappel in 2025, we will identify our largest emissions drivers and pathways for carbon reduction.



## Unpacking Our 2024 Emissions

As a leading provider of sustainable alternative packaging materials, we know that how we manufacture is as important as what we manufacture.

Will continue to baseline our operational footprint from calendar year 2022.

### By the box...

kWh/Kit <sup>2</sup> of Insulation	2024	2023	2022	% Change from 2022
Richmond, VA	0.227	0.238	0.247	-8.1%
Las Vegas, NV	0.298	0.286	0.250	-14.9%
Holt, MI	0.125	0.130	0.031	-3.8% <sup>3</sup>
Reno <sup>4</sup> , NV	NA	0.221	0.085	N/A
Company Wide <sup>5</sup>	0.224	0.216	0.201	-10.6% <sup>6</sup>

The implemented large scale automation projects in Richmond, optimized reorganization of the layout in Las Vegas, and equipment upgrades in Holt yielded efficiency gains yielded reductions seen above. Further, the efforts supported a better foundation of baseline energy use and footprints for TemperPack’s product outputs. We will continue to implement efficiency and energy reduction efforts that sustain the production levels necessary to produce the millions of TemperPack ClimaCell and GreenCell panels.

<sup>2</sup> kWh refers to our purchased electricity usage as this is the main driver of TemperPack’s product drivers. “Kit” refers to a 9x11x10” box with 1.5” thick insulation cooler of either ClimaCell or GCF.  
<sup>3</sup> This figure was determined from the YoY change from 2023 as the Holt Facility was not part of the operational footprint for TemperPack in the full 2022 calendar and fiscal year.  
<sup>4</sup> Reno was not included in this assessment this year as the facility lease was discontinued in July of 2024. Their production and energy usage in 2024 was deemed immaterial to this assessment.  
<sup>5</sup> Does not include the electricity consumed at our Proving Gound packaging lab.  
<sup>6</sup> This calculation was taken using the average values from the 2022 for Richmond and Las Vegas and the 2023 value for our Holt Location against the respective 2024 values.



## Waste

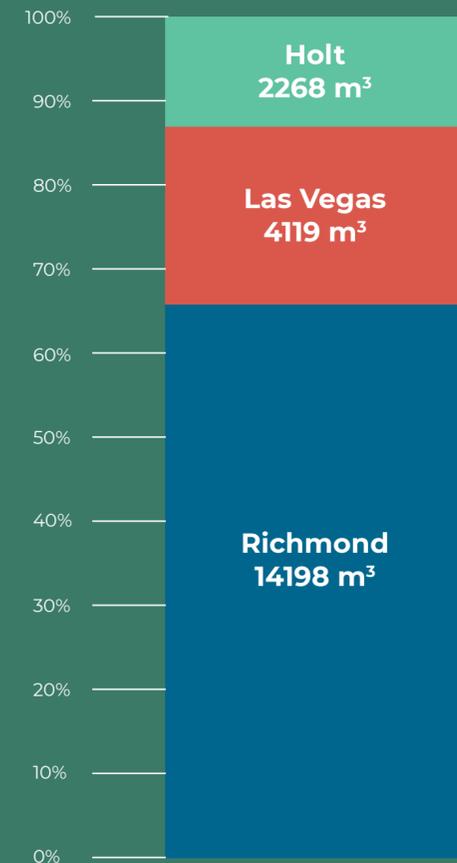
Our goal is to avoid and displace packaging waste downstream of our operations, waste reduction and responsible management is a conscious ongoing area of focus for our own operations.

- Green Cell Foam operations implemented new technology to collect and reintroduce foam scrap waste back into the extrusion process, reducing overall foam scrap waste by 5% - 10%.
- In 2024, we recycled 186 Mt of corrugated and paper with International Paper.

## Water

As we continue our sustainability journey, we look to provide more transparent reporting and oversight practices for you, our stakeholder. In 2024, we established a baseline water usage of **20,584 m<sup>3</sup>** across our manufacturing facilities<sup>7</sup>, after uncovering water usage for the Las Vegas facility that was previously unavailable. With greater oversight of our water footprint, this data will enable our team to implement practices to lower our overall usage and water intensity of our products.

The following graph illustrates the breakdown of water use at our three manufacturing facilities. The Richmond facility has the largest physical footprint and therefore the proportional water consumption. This does not include water used at our 'Proving Ground' Packaging Lab.



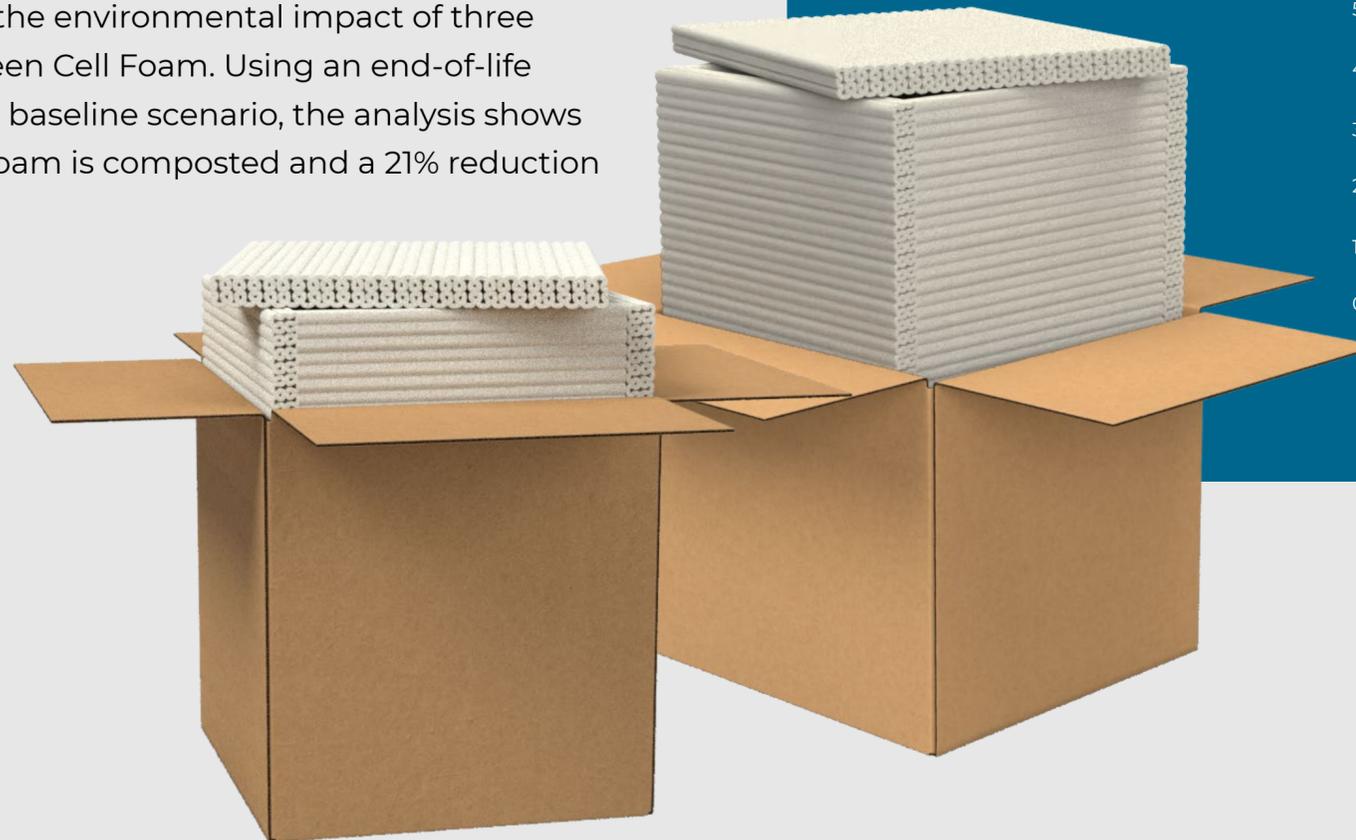
<sup>7</sup>Richmond water use incorporates usage at our Proving Ground facility in Richmond, VA. This figure does not include a warehouse facility in Las Vegas. We do not anticipate a material impact on our water footprint from this facility.



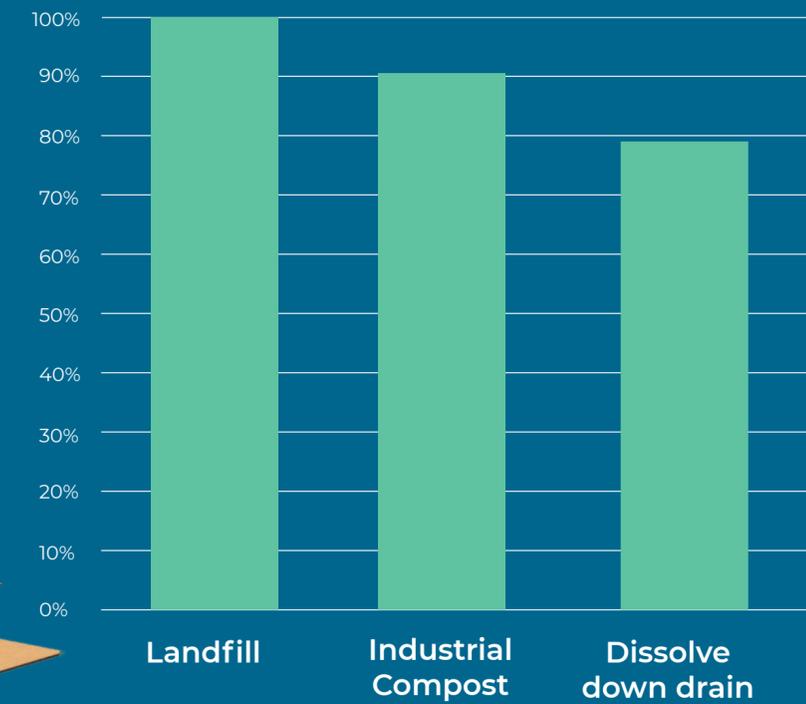
## Green Cell Foam and EPD

Last year, we partnered with WAP Sustainability to conduct a single product Life Cycle Assessment of Green Cell Foam™ and Green Cell Plus™, resulting in our first ever Environmental Product Declaration, in accordance with ISO 14025 and registered with EPD North America.

The assessment allowed us to quantify the environmental impact of three recommended disposal methods of Green Cell Foam. Using an end-of-life treatment of landfilling the foam as the baseline scenario, the analysis shows a 9% reduction in emissions when the foam is composted and a 21% reduction when disposed down the drain.



**Impact on Global Warming by Disposal Method**



## Our Continuous Testing

Proving Ground serves as our R&D hub and innovation laboratory for our packaging engineers. Our thermal and protective packaging labs in Richmond, VA and Holt, MI are certified by the International Safe Transit Association to provide our customers with trusted, optimized pack-out designs without the need for EPS.

# 476

Total tests  
conducted in 2024

# 1977

Total boxes  
tested

# 9.2

Average tests  
per week

The lab also expanded its simulation capabilities and created smart temperature modeling tools to help our customers. These tools let us:

- Create better shipping solutions
- Adjust for seasonal changes
- Design products faster
- Run fewer physical tests

We've had great success improving how our customers use coolants. By accounting for different seasons, we can help them save money by using less coolant when conditions allow.

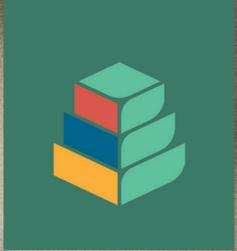
### Third Party Certifications

Both ClimaCell and Green Cell Foam are now USDA Certified BioBased Products by the BioPreferred® Program, certifying that both products use renewable and non-petroleum derived raw materials

**PROVING GROUND**  
ISTA®-CERTIFIED LAB



**ista**



# People



## 2024 HIGHLIGHTS

In 2024, we included two sustainability-specific questions to our annual employee engagement survey to further embed our mission into our culture and to field feedback for improvements in our daily operations. The questions serve to monitor connection to our sustainable goals and empower employees to take actions within their roles.

*“ We focused this past year on redefining the value of HR, creating a stronger partnership within our teams and fostering a culture that fuels our employees to deliver great things for our business and our planet.”*

**- Amy Williams,  
Chief Human Resources Officer**



590 trees will be planted by the Arbor Day Foundation in Bootleg Fire Recovery in Oregon

In honor of  
**Earth Day 2024**

And was made possible by  
**TemperPack Technologies Inc.**

**One tree for every TemperPacker.**

“When we plant trees, we plant the seeds of peace and the seeds of hope.”

*- Wangari Maathai*

  
Dan Lambe, Chief Executive



We **donated one tree for every employee** in honor of Arbor Day 2024.

In honor of **Earth Day**, teams from each facility **organized a trash pickup** around our sites, taking in vitamin D and honoring the green space around our workplace.



In April 2024, our executive team **visited Republic Services** near our manufacturing facility in Las Vegas, NV to tour the sortation processes and see **technology advances in recycling in action.**



In May 2024, our marketing and sustainability team visited two MRFS in FL to **conduct sortation trials of ClimaCell and WaveKraft panels.**



## Pack Stats

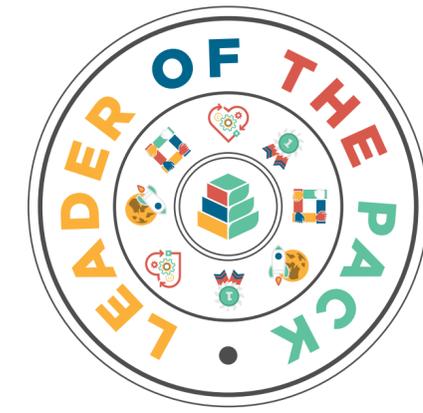
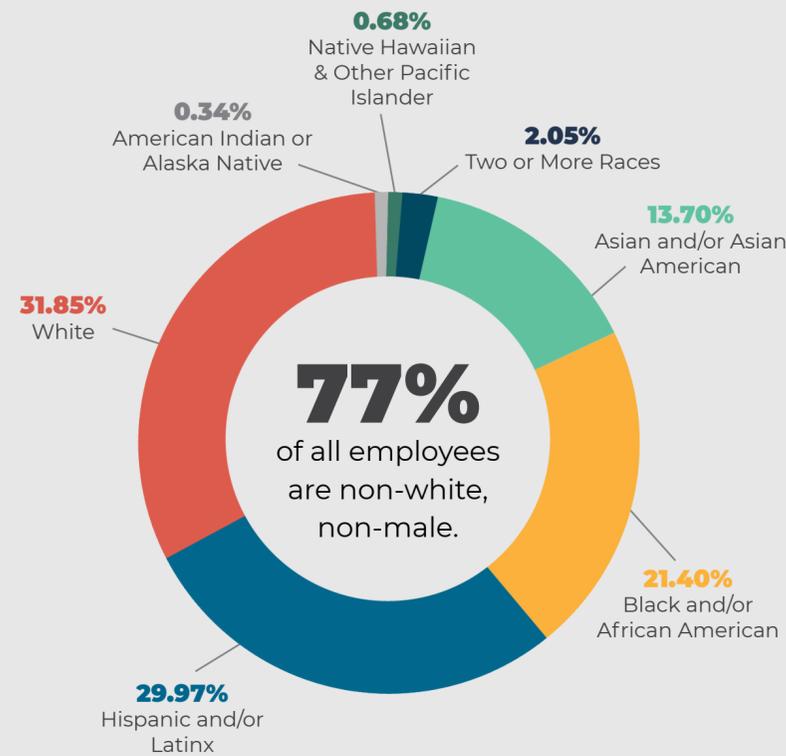
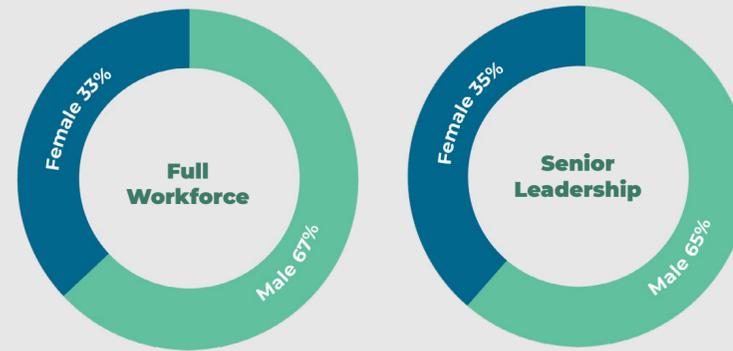
**75%** Employee engagement survey participation

**17** Languages spoken at TP



**584** Total full-time employees (normalized)

**4** Facilities in 3 states



The Leaders of the Pack program was established to acknowledge exceptional team members who exemplify TemperPack's core values through their commitment to collaborative leadership, team empowerment, and authentic guidance. They consistently drive innovation, tackle challenges head-on, and prioritize continuous growth and improvement in all their endeavors.



## Employee Health and Safety

*“By keeping safety at the forefront of our minds, we can prevent incidents before they happen and create a culture of vigilance.”*

**- Kevin Facklan, Director EHS**

### TemperPack’s Commitment to Safety

At TemperPack, safety is not just a priority—it’s a core value that permeates every aspect of our operations. With three manufacturing locations across the United States, our Environmental, Health, and Safety (EHS) Department is structured to ensure comprehensive oversight and proactive management of safety practices. Each site is managed by a dedicated EHS Manager, who is supported by our Director EHS, Corporate EHS Training Manager, and the strategic direction provided by our Senior Vice President of Quality, Safety, and Environment (QSE).

### Voice of the Pack (VOTP) Program

Our VOTP program empowers every employee to report safety incidents they encounter. These reports are reviewed by the Director EHS and actioned whenever possible. By encouraging open communication and active participation, the VOTP program keeps safety at the forefront of our employees’ minds and ensures that every voice is heard.



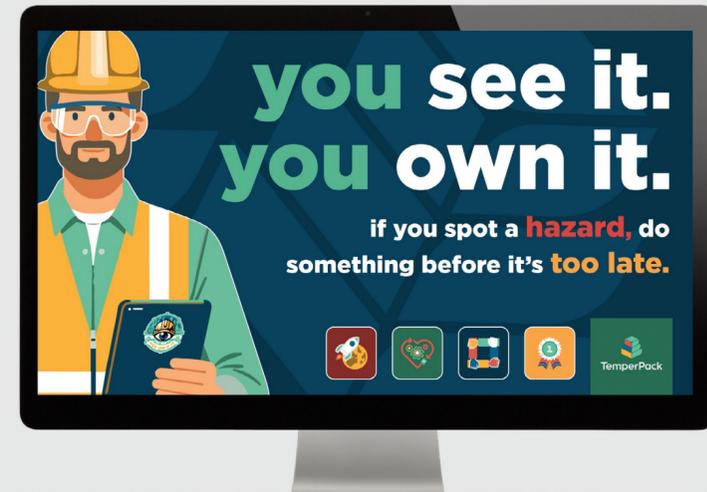
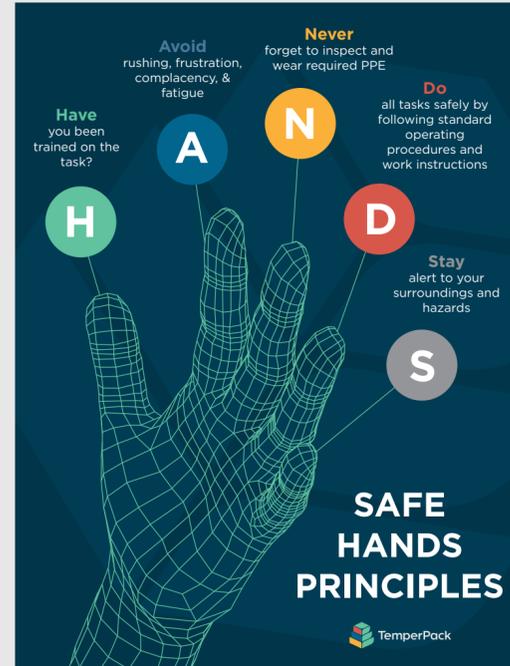


## Building a Culture of Safety

### Safe HANDS Campaign

A campaign focused on 5 key principles to keeping hands safe while working in highly technical manufacturing environment. HANDS stands for 5 reminders:

- H**ave you been trained on the task
- A**void rushing, frustration, fatigue, and complacency
- N**ever forget to wear and inspect PPE
- D**o all tasks safely by following SOPs
- S**tay alert to your surroundings and hazards



### You See It, You Own It Competition

The gamified 30-day campaign, involved a daily audit of the same area across three facilities by the QSE team, with the safest and cleanest site being chosen as the winner each day. The facility with the most wins at the end of the month earning a lunch celebration and set the standard for all facilities.

### Outstanding Safety Performance

Our Total Recordable Incident Rate (TRIR) is consistently below the industry average, reflecting our commitment to maintaining a safe working environment. We strive to keep this rate as low as possible through rigorous safety protocols, continuous training, and a culture of vigilance.

2024	2023	2022	% Change 2022
1.89	2.2	3.68	-48%

### SafeStart Now Program and Principles

This year, we are proud to choose and implement the SafeStart® Now program across all three sites. This initiative aims to train nearly half of our employees by the end of 2025, with the remaining employees scheduled for training in 2026. The program is integrated in our onboarding process to ensure that all new employees share a common safety language and framework. It enhances our safety culture by providing consistent training and accountability. The program focuses on four human states that can lead to critical errors, rushing, frustration, fatigue, and complacency, and applies techniques to mitigate their impact.<sup>9</sup>

Each site has a Safety Committee composed of hourly employees, subject matter experts, and management. Committees meet monthly to review safety incidents, share insights, and implement preventive measures. This collaborative approach ensures that safety is everyone's responsibility and that we continuously learn and improve from our experiences.

<sup>8</sup> TRIR was calculated as the Number of recordable incidents x 200,000 / total number of hours worked in one year.  
<sup>9</sup>The State To Error Risk Pattern And The Concept Of Self-Triggering – SafeStart International



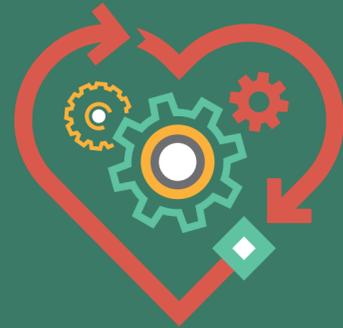
## Company Values Evaluation

In preparation for our 10-year anniversary in 2025, we partnered with Brand Federation in Richmond VA to update and energize how we articulate our beliefs and behaviors at TemperPack. The team conducted dozens of interviews with TemperPack employees and external stakeholders and refined the feedback to produce a solidified mission statement and revised company values.



### shoot for the moon.

We set big goals and never settle. Because we know our expertise and ambition combine to make amazing things possible.



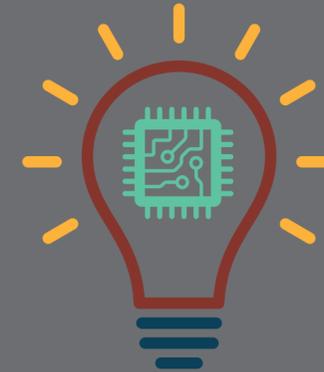
### love the process.

We see every problem as an opportunity to create something better. And every challenge, no matter how tough, is an opportunity to learn and grow.



### do it together.

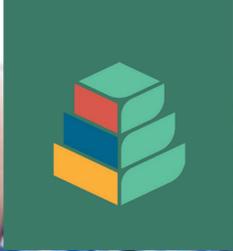
We are all innovators. We collaborate with each other and our customers to create better solutions than we could create alone.



### make it real.

We're in the business of real-world innovation, not pie in the sky theory. Our ideas are ambitious but they have to work, and we don't stop until they do.





# Our Impact Network



(804) 340-0900  
[www.cvwma.com](http://www.cvwma.com)



## Partnerships, Investors, and Sustainable Community Supporters

	<p>Closed Loop Partners is at the forefront of building the circular economy, comprised of three key business segments: an investment firm, innovation center and operating group. Closed Loop has been a partner and investor of TemperPack since 2018.</p>
	<p>Goldman Sachs Horizon Environment &amp; Climate Solutions I Fund provides private capital to scale companies that offer solutions to address adverse environmental impact and advance the sustainable climate transition. Driven by changing consumer and corporate behavior and regulations and a need for innovative solutions to meet corporate sustainability goals, the Fund invests in key sectors focused on the environment and climate transition. TemperPack has been part of the Horizon Fund portfolio since 2022.</p>
	<p>SJF Ventures invests in high-growth companies with a mission is to catalyze the development of highly successful businesses driving lasting, positive changes. SJF Ventures has backed TemperPack and supported our ESG programming since 2017.</p>
	<p>WAP Sustainability provides Sustainability Managers consulting services and act as an extension of their team to meet their goals. TemperPack partnered with WAP to conduct a single product LCA for Green Cell Foam and authored, coordinated a review, and published our Environmental Product Declaration.</p>
	<p>Position Green is a sustainability software solution that combines ESG software with advisory expertise to help businesses track, manage, and improve their environmental impact. TemperPack onboarded Position Green in 2023 and uses Position Green's emissions library for carbon accounting.</p>
	<p>Rappel delivers asset-specific corporate decarbonization solutions by combining the ease of a streamlined engagement process with the power of advanced carbon and financial modeling software. With TemperPack's team, Rappel is working to provide a value-creating carbon reduction strategy, plan, and implementation solution for our manufacturing facilities.</p>
	<p>Long Trail Sustainability (LTS), provides the tools, knowledge and support to assess, reduce, and effectively communicate the environmental impact of products. As the dedicated distributor of SimaPro in North America, LTS and TemperPack worked closely to build the single product and comparative LCA for ClimaCell.</p>

## Memberships, Organizations, and Impact Frameworks

	<p>Representing the packaging value chain, AMERIPEN believes our primary role is to optimize the value of packaging while minimizing any associated social, environmental, and economic challenges. TemperPack joined AMERIPEN in 2024.</p>
	<p>The Sustainable Packaging Coalition is a membership-based collaborative that believes in the power of industry to make packaging more sustainable. Their mission is to bring sustainable packaging stakeholders together to catalyze actionable improvements to packaging systems and lend an authoritative voice on issues related to packaging sustainability. TemperPack has been a member of SPC since 2019.</p>
	<p>The PACK EXPO brand represents cutting-edge processing and packaging innovation, and the highest quality trade show experience for both attendees and exhibitors. These events bring together a wide range of industries and provide solutions that help companies adapt to changes in consumer demand and other market forces. TemperPack has participated in PackExpo events since 2023.</p>
	<p>CDP scores play a critical role in moving companies from transparency to action. CDP scores are used by global investors to monitor their own portfolios, assess future investments, and comply with regulation and industry commitments. TemperPack disclosed to CDP for the first time in 2024 as a supplier and earned a B score.</p>
	<p>SASB Standards connect business and investors on the financial effects of sustainability. Available for 77 industries, the SASB Standards identify the sustainability-related risks and opportunities most likely to affect an entity's cash flows, access to finance and cost of capital over the short, medium or long term and the disclosure topics and metrics that are most likely to be useful to investors. TemperPack's responses to the SASB Containers and Packaging framework can be found in the appendix of this report.</p>
	<p>To be a leader in making global supply chains more socially and environmentally sustainable, SEDEX engages with companies and their supply chains to continuously improve their environmental, social, and governance outcomes. TemperPack has participated in SEDEX vendor questionnaires since 2023.</p>

### Certifications



How2Recycle's labeling scheme is based on nationally harmonized data and provides consistent and transparent on-package disposal instructions for consumers. Behind every label is a custom recyclability assessment. TemperPack used How2Recycle to evaluate and communicate the recyclability of our products since 2019.



International Safe Transit Association empowers organizations to minimize product damage throughout distribution and optimize resource usage through effective package design. ISTA helps members control costs, damage, and resources during the distribution of packaged-products. TemperPack's packaging labs have held ISTA certifications since 2019.



ISO 9001 is a globally recognized standard for quality management. It helps organizations of all sizes and sectors to improve their performance, meet customer expectations and demonstrate their commitment to quality. Its requirements define how to establish, implement, maintain, and continually improve a quality management system (QMS). All of TemperPack's manufacturing facilities hold ISO 9001 certificates.



# Appendix



## SASB Index - Containers and Packaging

Topic	Accounting Metric	Unit of Measure	Code	FY24 Value	Report Location
Greenhouse Gas Emissions	Gross Scope 1 Emissions	MtCO <sub>2</sub> e	RT-CP-110a.1	528.82 MtCO <sub>2</sub> e	Pg. 6
	Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets and an analysis of performance against those targets.	n/a	RT-CP-110a.2	We are currently utilizing the solutions provider, Rappel, and internally reviewing procedures and practices to guide our emissions footprint. We currently do not have emission targets set but do look to establish them	Pg. 6
Energy Management	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable and (4) total self-generated energy	Gigajoules(GJ), Percentage(%)	RT-CP-130a.1	1) 45828.504 GJ 2) 100% 3) 0% 4) 0%	NA
Water Management	(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress	Thousand cubic meters (m <sup>3</sup> ), Percentage(%)	RT-CP-140a.1	1) 20,584.26 <sup>10</sup> 2) 0%	Pg. 9
	Description of water management risks and discussion of strategies and practices to mitigate those risks	n/a	RT-CP-140a.2	While our operational footprint is not present in locations with high levels of water stress. We continuously search for practices and protocols to lower our water usage footprints.	NA
	Number of incidents of non-compliance associated with water quality permits, standards and regulations	Number	RT-CP-140a.3	0	NA



Topic	Accounting Metric	Unit of Measure	Code	FY24 Value	Report Location
Product Safety	(1) Number of recalls issued, (2) total units recalled <sup>1</sup>	Number	RT-CP-250a.1	1) 0 2) 0	NA
	Discussion of process to identify and manage emerging materials and chemicals of concern	n/a	RT-CP-250a.2	We currently do not use hazardous materials in product development. Our supply-chain team notifies relevant parties as materials and chemicals of concern may be utilized in processing.	NA
Product Lifecycle Management	Percentage of raw materials from: (1) recycled content, (2) renewable resources, and (3) renewable and recycled content	Percentage (%) by weight	RT-CP-410a.1	1. 0% 2. 92% <sup>11</sup> 3. 92%	NA
	Discussion of strategies to reduce the environmental impact of packaging throughout its lifecycle	n/a	RT-CP-410a.3	Strategies to reduce the environmental impact of our products include increasing energy efficiency of our operations and identifying waste reduction projects.	Pg. 7
Supply Chain Management	Total wood fibre procured; percentage from certified sources	Metric tonnes (t), Percentage (%)	RT-CP-430a.1	7587t;100%	NA
	Total aluminum purchased; percentage from certified sources	Metric tonnes (t), Percentage (%)	RT-CP-430a.2	0%	NA
Activity Metric	Number of employees	Number	RT-CP-000.C	584 <sup>12</sup>	Pg. 14

<sup>11</sup> Purchased paper has been incorporated into this calculation as a raw material from a renewable resource. All sourced paper is FSC certified.

<sup>12</sup> This figure reflects direct-hire employees. TemperPack's FTE employee count is 609.



Topic	Accounting Metric	Unit of Measure	Code	FY24 Value	Report Location
Revenue from products that are reusable, recyclable, or compostable	Presentation currency	Presentation currency	RT-CP-410a.2	Not currently reported	NA
Air Quality	Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) volatile organic compounds (VOCs), (4) particulate matter (PM)	Mt	RT-CP-120a.1	Not currently reported	NA
Waste Management	Amount of hazardous waste generated; percentage recycled	Metric tonnes (t), Percentage (%)	RT-CP-150a.1	Not currently reported	NA
Activity Metric <sup>13</sup>	Amount of production, by substrate	Percentage (%) by revenue	RT-CP-000.A	Not currently reported	NA
	Percentage of production as: (1) paper/wood, (2) glass, (3) metal, and (4) plastic	Percentage (%) by revenue	RT-CP-000.B	Not currently reported	NA

<sup>13</sup>These metrics have not been included due to the parameters of TemperPack's product line.



# Thank You.

At least one million tons of plastic enters the ocean each year.

