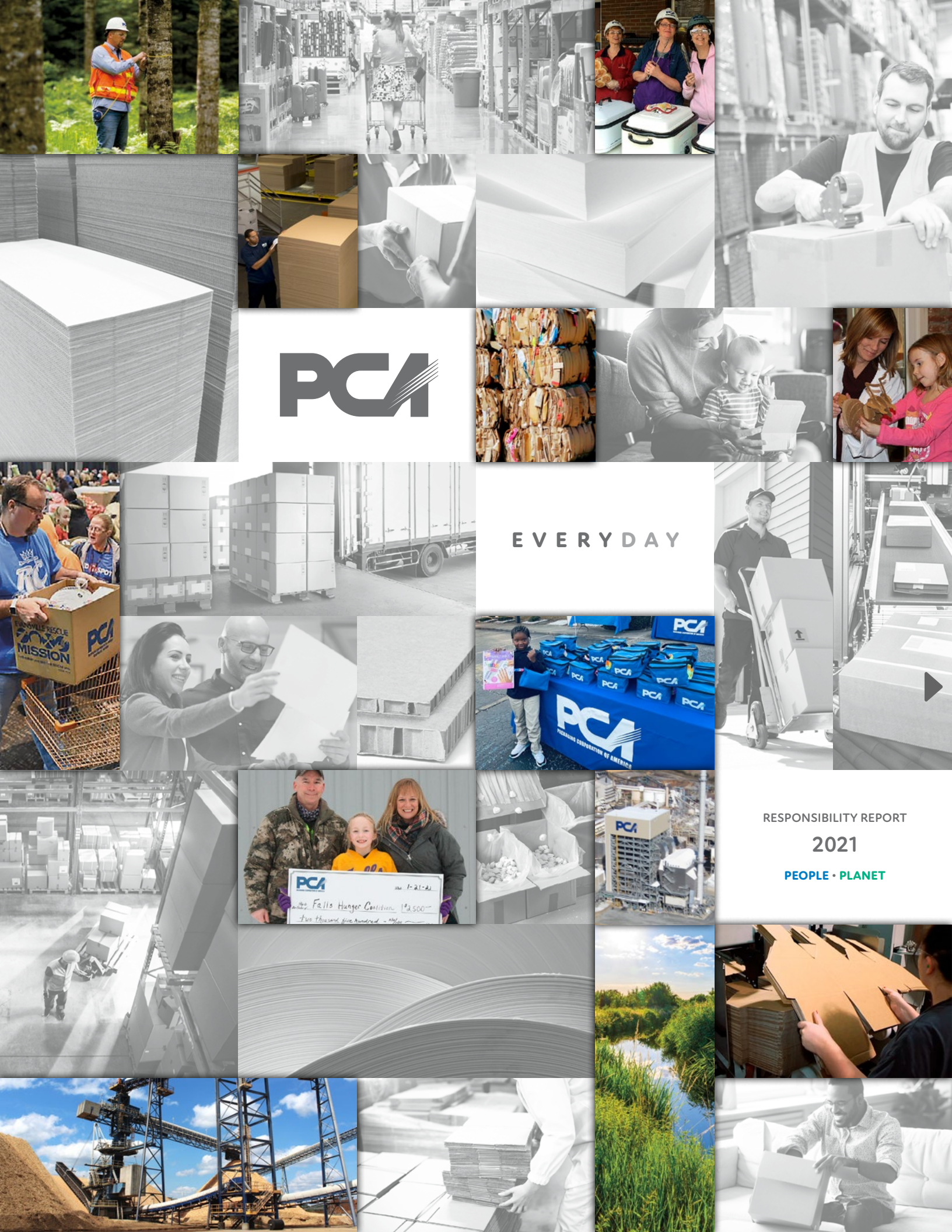


RESPONSIBILITY REPORT

2021

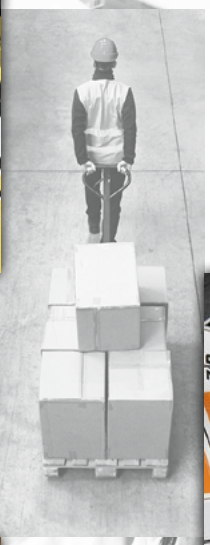
PEOPLE • **PLANET**

PACKAGING CORPORATION OF AMERICA is an ideas and solutions company that produces essential, sustainable products that people rely on **EVERY DAY**. Our Packaging segment is known for its expertise in the manufacturing and sales of containerboard and corrugated products, and our Paper segment (Boise Paper) produces and sells consumer-brand office and business papers. Together, we are focused on bringing value to a growing number of customers around the world.

PCA's corrugated products are vital to businesses (large and small), retailers (brick and mortar and online) and shoppers (in stores and at home). And our paper products are used every day in schools, offices and homes. We remain committed to meeting the needs of our customers by providing outstanding service and essential products that exceed expectations for performance and environmental responsibility.

PCA's common stock is **LISTED ON THE NEW YORK STOCK EXCHANGE** under the ticker symbol

PKG.



PCA is the third largest producer of containerboard and corrugated products in North America. We manufacture many grades of kraft linerboard and corrugating medium at our containerboard mills and produce a wide variety of corrugated containers and displays at our converting facilities.

BOISE PAPER is a leading producer of uncoated freesheet in North America. Our team is dedicated to providing high-quality products, outstanding customer service and industry-leading supply chain performance, with a product portfolio that includes office papers and printing and converting papers.

CONTENTS

Mark W. Kowlzan

Chairman and
Chief Executive Officer

June 30, 2022

Executive Statement

To all Stakeholders,

In our 2020 Responsibility Report, we shared that PCA's Board of Directors had formed a Sustainability Committee charged with providing oversight for all environmental, health and safety, and sustainability matters. As a next step, our Sustainability Committee has formalized a set of *Sustainable Business Principles* as the foundation for PCA's deliberate and thoughtful approach to our environmental, social and governance (ESG) efforts. These principles are as follows and will guide us as we endeavor to meet the needs of our stakeholders for generations to come:

- Prioritize the health and safety of our employees above all else to achieve a workplace free from serious injuries and fatalities.
- Build a resilient culture oriented toward serving the needs of one another, and our stakeholders.
- Invest in our people, our operations, technology and science, and our communities to attain unparalleled employee engagement, operational excellence and customer satisfaction.
- Make a continuous effort to maximize the efficiency of everything we do to reduce the consumption of raw materials and minimize waste in all its forms.
- Uphold the principles of sustainable forest management to provide ecological, social and economic benefits to the communities where we operate.
- Increase the use of renewable or carbon-free energy sources until greenhouse gas emissions from fossil fuels have been effectively mitigated.
- Be a good steward of the watersheds and aquifers we depend on by understanding water as a shared resource and collaborating with others to ensure water security.
- Manufacture high-quality, high-performance products from responsibly sourced renewable materials that are recyclable or reusable.
- Act with integrity and use responsible business practices to earn the trust of our stakeholders.

Achieving our shared goals takes time and coordinated effort. PCA will continue to take a long-term view and is committed to continuously improving our sustainability efforts. We have established a new executive role with management responsibility for the Corporate Sustainability and ESG Team. They will work collaboratively with our Carbon Neutrality Team to integrate and uphold our *Sustainable Business Principles*, as well as identify, assess and report on opportunities to reduce our carbon emissions and help us prepare for the long-term.

We are confident in the ability of our people to serve our customers by delivering the most sustainable products, manufactured in facilities that are dedicated to achieving the highest standards in safety, quality and social responsibility.

We appreciate your continued interest in our progress.

Company Profile 2021

15,200 EMPLOYEES **$7.7 BILLION** IN REVENUE

PACKAGING SEGMENT

7 containerboard mills*	**89** converting operations
4.9 million tons of containerboard	**65.7** billion square feet of corrugated products
15,000 customers **33,000** locations	

PAPER SEGMENT

1 white paper mill*
570 thousand tons of uncoated freesheet
100 customers **350** locations

** Our Jackson, Alabama mill can produce white paper and containerboard grades on both paper machines. In the first quarter of 2021 we announced the discontinuation of producing uncoated freesheet paper grades on the No. 3 machine and the permanent conversion of the machine to produce linerboard.*

GENERAL DISCLOSURES

PCA

EVERYDAY

Sustainability Governance

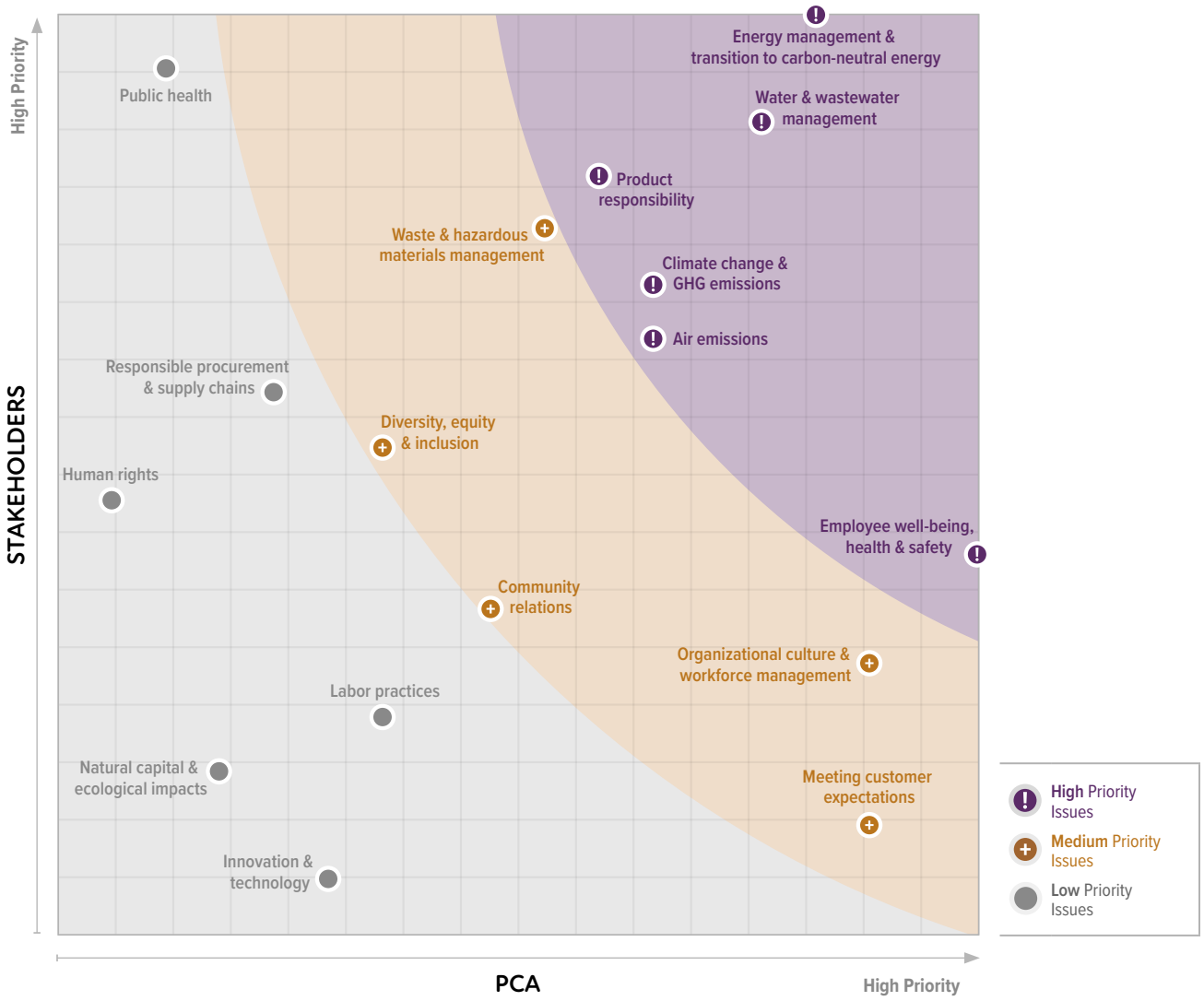
January 1, 2022, PCA established a Corporate Sustainability and ESG department upon the promotion of our Vice President, Tax to Senior Vice President, Tax, ESG and Government Affairs. This newly established role has management responsibility for the Board Sustainability Committee, which is scheduled to meet five times in 2022. The Corporate Sustainability and ESG department is responsible for evaluating long-term ESG risks, benchmarking company performance, establishing metrics and targets, working collaboratively with our Carbon Neutrality Team and developing strategies to effectively manage risks and realize opportunities. This department also engages with and communicates our performance on ESG issues to a wide array of stakeholders. Additionally, this department works cross-functionally to educate internal and external stakeholders and implement sustainability initiatives for the company.

Materiality

We took a fresh approach to assessing materiality for this year's report. In 2021, we began licensing Datamaran's technology to assist our materiality and ESG risk management efforts. Using this technology, we can quickly identify relevance of key ESG issues for a broad set of stakeholders. Datamaran uses natural language processing to contextualize information found in companies' financial and sustainability reports, and looks at current regulations, voluntary initiatives and news to prioritize issues.

In this cycle we relied entirely on Datamaran's technology to create our external view. For our internal view, we surveyed our Executive Officers and members of our Sustainability Committee of our Board of Directors.

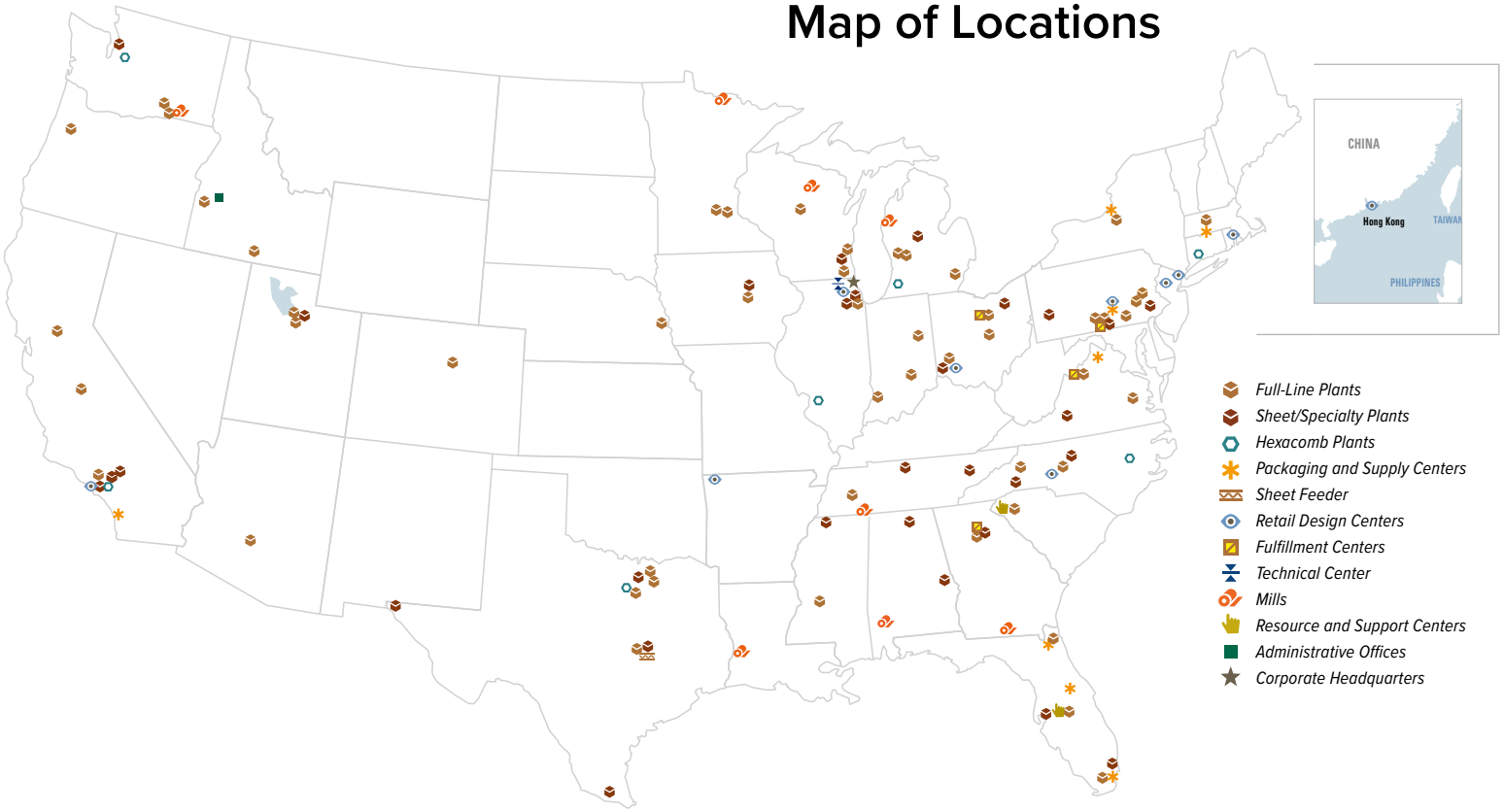
The ESG issues we evaluated are shown in the matrix below. High and medium priority issues are included in this report.



Key Impacts

PCA Impacts for Material GRI Topics	Fiber Sourcing	Pulp and Paper Making	Converting	Support, Service, Provision	Customer Use	End-of-Life, Recovery
Environmental						
Materials	•	•	•			•
Energy		•	•			
Water & Effluents		•	•			
Climate Change & Emissions	•	•	•			•
Waste		•	•			•
Social						
Employment		•	•	•		
Occupational Health & Safety	•	•	•	•		
Learning & Development	•	•	•	•		
Diversity, Equity & Inclusion		•	•	•		
Community Outreach	•	•	•		•	•
Consumer Health & Safety	•	•	•		•	•

Map of Locations



2030 Goals

PCA's operational performance helped the industry achieve many of the American Forest & Paper Association's *Better Practices, Better Planet 2020* goals. PCA will continue to build on this progress and is committed to helping the industry achieve the ambitious AF&PA 2030 goal of reducing total scope 1 and 2 greenhouse gas emissions intensity by 50% from a 2005 baseline. We also support AF&PA's 2030 goals of Advancing a Circular Value Chain, Zero Injuries, Drive Water Stewardship, and Resilient Forests, in addition to supporting AF&PA's DE&I Principles. For more information on these goals, please visit the sustainability section of the AF&PA website at afandpa.org/2030.

Global Reporting Initiative (GRI) Index

We leverage our GRI Index to report many of our general disclosures, which streamlines our reporting process. The majority of these disclosures appear in our Annual Report on Form 10-K filed with the Securities and Exchange Commission (SEC), in other SEC filings and in policies available on our website. You can find our index at the back of this report starting on page 46.

EVERYDAY

PEOPLE

Occupational Health and Safety

PCA is committed to providing and maintaining a safe and healthy work environment for all employees. We approach our occupational health and safety objectives in multiple ways to best guarantee success. We invest in our people, ensuring they have the appropriate training and protective equipment, and we invest in our equipment to ensure it is well maintained, reliable and safe to operate. To realize our philosophy that all accidents are preventable and an injury-free environment is achievable, we have implemented a robust occupational health and safety management system.

Occupational Health and Safety (OHS) Management System

PCA's OHS management system includes elements intended to engage employees, define success and provide practical guidance to achieve excellence. These elements include management commitment, safety policy, safe work rules, employee training, safety meetings, employee involvement, safety committee, facility inspections, incident investigation, medical treatment/first aid, plant emergency organization, hazard/risk assessment, job hazard analysis, communication, industrial hygiene, ergonomics and environment.[1] Our management system elements are also incorporated into contractual labor agreements, where applicable. Resources and tools that support the management system are available to employees on PCA's health and safety intranet site.

Workers Covered by an OHS Management System

All employees, temporary workers and contractors are subject to and are covered by PCA's OHS management system. Contractor agreements require that foundational safety training is provided to workers, and site-specific health and safety training is also provided by PCA.[2] PCA utilizes a third-party verifier to ensure contract workers receive adequate health and safety training, maintain written safety programs and have a demonstrable history of safe operation.

Worker Training

PCA provides guidance and instruction for completing federally mandated training required under the OSHA Act.[3] Training is delivered in a variety of methods including classroom instruction, online modules, block training and on-the-job training.

In addition to the federally mandated OSHA training, each job classification has specific safety training provided prior to an hourly associate being placed in the job. Training includes task-specific safety requirements of that job and how to perform these, as well as awareness of the required task-specific personal protective equipment (PPE). Training records are maintained by each location.

Health and Safety Leadership

To lead the implementation of the OHS management system, PCA has a Health and Safety group that consists of a Senior Vice President, a Vice President, Senior Directors, Corporate Managers, Regional Managers, and Facility Health and Safety professionals.

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[1] PCA's OHS management system accounts for requirements outlined in OSHA's Illness and Injury Prevention Program and 29 CFR Subpart R 1910.261 "Pulp, Paper and Paperboard Mills" Additional guidance is provided through various standards written by the American National Standards Institute (ANSI), and Industry Practices.

[2] PCA has an internal Safe Operating Practice Instruction dedicated to practices of outside contractors, in addition to Safe Practices for Outside Contractors, available on our website.

[3] Identified training includes federally mandated OSHA training under 29CFR1910.261.

Collectively, our leaders have demonstrated safety excellence for decades, and many team members hold professional certifications including Certified Safety Professional (CSP) and Certified Hazardous Materials Manager (CHMM).

Our leaders strive to be strong mentors for the next generation of health and safety leaders at PCA, and they work collaboratively within our industry safety committees.[4] These committees work to raise awareness; share ideas and best practices; and stay current on trends, regulations and shared opportunities within the industry. The Health and Safety group meets throughout the year for training, performance and program reviews, and strategic planning.

PCA's Sustainability Committee provides Board-level oversight of health and safety.

Health and Safety Audit Program

PCA's policy requires health and safety audits to be conducted every three years at a minimum. Audits are conducted by corporate and facility health and safety professionals. Their findings and recommendations are shared internally.

Employees are instructed and encouraged to report workplace hazards along with corrective actions. Reporting of hazards can be communicated through entry into our electronic work order system; verbally with a supervisor, other members of management or joint health and safety committee members; or via the PCA Hotline. Employees are free to report workplace hazards without fear of reprisal.[5]

Incident Investigation

PCA provides written instructions on how to report and investigate near misses, first aid treatment, doctor visits, restricted duty cases and lost time accidents. We use investigation techniques designed to identify root causes and develop corrective actions utilizing the hierarchy of controls. Work-related incidents are entered into an electronic incident reporting database for tracking and notification. Incident trending and analysis is performed utilizing functions in our reporting database. Reports are used to identify leading causes of incidents, root causes, and appropriate corrective actions. Data is used to develop improvement plans for incident and injury reduction.

Health Services

PCA maintains and has available health and emergency response services at all its locations. PCA paper mills have either registered nurses, licensed practical nurses, EMTs or paramedics on-site during the day and either on-site or on call after hours. These licensed medical professionals provide services such as spirometer testing and audiometric examinations. In addition to these services, they offer many health and wellness procedures such as blood pressure screenings, health consultations, health education and over-the-counter medications. All employees are encouraged to visit the medical facility to discuss any health issues or concerns they may have at any time.

PCA's converting operations have access to a 24/7 nurse triage line. All plants maintain first aid supplies and have employees certified in CPR and first aid. Corporate policy requires that each shift be staffed with at least two individuals with CPR and first aid certifications.

[4] PCA leaders actively participate in trade association safety committees for the Fibre Box Association (FBA), American Forest & Paper Association (AF&PA), the Pulp and Paper Safety Association (PPSA) and the Technical Association of the Pulp and Paper Industry (TAPPI).

[5] This is supported by union contractual language known as "Right to Act" as well as PCA's Code of Ethics and Business Conduct and federal law (U.S. Department of Labor — Whistleblower Protection Act).

Worker Participation, Consultation and Communication

All PCA paper mills have union contracts, which include language concerning hourly associates' participation in safety activities. This participation consists of safety committees that meet regularly to discuss issues and concerns, to identify opportunities to mitigate potential hazards and to serve as information exchange sessions. Hourly associates also play pivotal roles within departments and include safety coordinators and auditors during shutdowns. In addition, United Steelworkers (USW), International Association of Machinists (IAM) and PCA's management have annual contractual roundtable meetings. Employee participation in the roundtable comprises union leadership, hourly employees and management. Topics discussed cover best practices, trends and issues; and action items are identified and tracked to completion by the moderator and union officials.

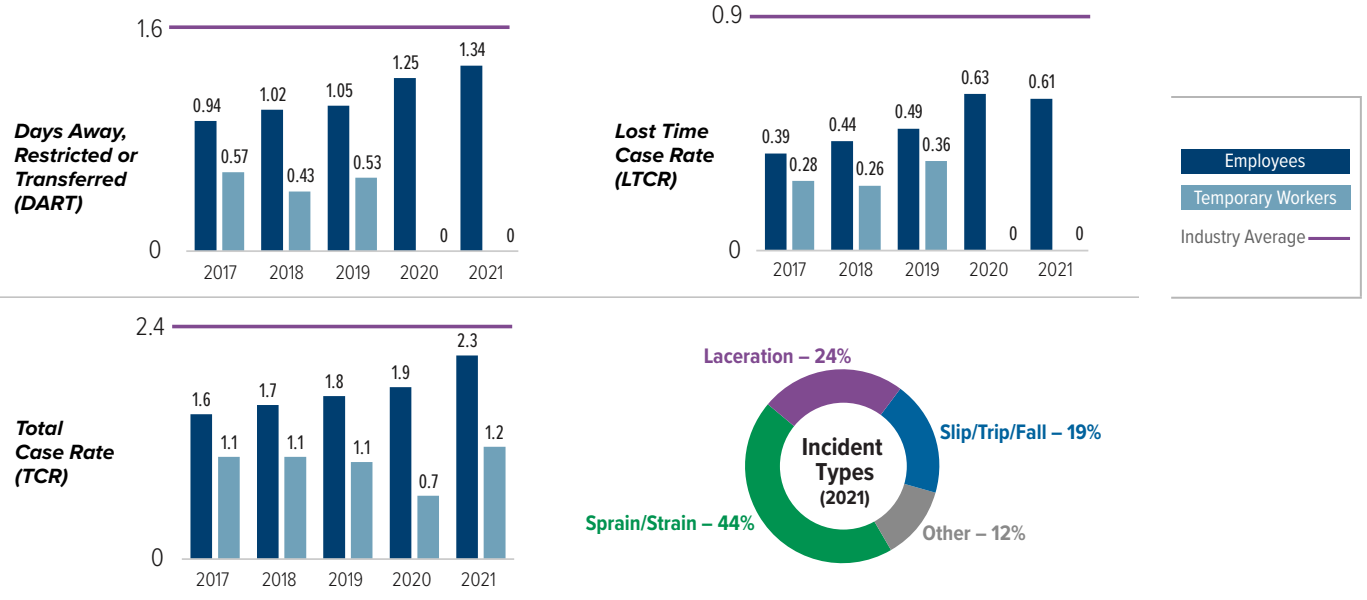
PCA's converting operations maintain joint Health and Safety committees that meet monthly. Minutes are kept and posted where all employees have access. Committee members are represented by all shifts and include management and hourly employees. Safety committees participate in safe plant operating assessments, incident investigations and inspections. Other employee participation options include being a member of the plant emergency organization. In addition, Effective Joint Health and Safety Committee training is being completed at all USW-represented locations.

Promotion of Worker Health

Subsidized full-time employee benefits include medical, dental and vision insurance; access to an Employee Assistance Program (EAP); short-term disability; life insurance and health screening services. The EAP addresses mental and general health concerns and is available for employees and family members. Communication for these services is provided through posters, e-mail, and in our annual benefits enrollment materials.

PCA partners with Catapult Health Service, whose goal is to empower individuals to improve their health through preventive health checkups and health fairs held at the worksite. Events are free to employees and families.

SAFETY PERFORMANCE METRICS *(cases x 200,000/total hours worked)*



Learning and Development

The expertise and engagement of our workforce is one of PCA's greatest competitive advantages. That engagement, as well as the skills and knowledge of our team members, are key to PCA's ongoing success. Now, more than ever, continuous learning and development are essential. We strive to keep PCA and our employees at the leading edge. Our premise is that investing in education and development will enhance personal growth while creating value for the larger organization, our customers and communities.

As part of that investment, we offer and make available a range of resources to all employees. We also offer a number of job-specific programs designed to both keep employees current and to enhance their continued professional growth. In addition, PCA provides several educational programs and opportunities to those who have demonstrated both interest and ability to grow in management and leadership roles.

Training Programs and Hours of Training

In 2019 we expanded our reporting to include several additional categories that we track centrally or can reliably estimate hours of training where records are retained locally.

We are reporting training hours per employee based on training hours logged through Online Maintenance Training (TPC) and through our e-learning platform, PCA University. In 2021, PCA averaged 1.8 hours of training per employee. PCA employees receive additional skills-based training, but we do not capture training provided outside of TPC and PCA University.

E-Learning — PCA University

Learning online is a proven solution for enhancing the skills of our employees. E-learning offers courseware so that employees geographically distributed across the United States may access quality content without the need for travel.

In 2021 we took e-learning to the next level with the launch of PCA University. Unlike traditional approaches to e-learning, PCA takes a "white glove" approach by curating content relevant to individual learners or entire teams. PCA's Learning and Development team has the attitude that no job is too big or too small and makes themselves accessible to the entire organization.

Our Learning and Development team takes the time to vet courses to ensure these meet our quality standards, and work diligently to engage with learners to understand their unique needs and not simply assign trainings. This results in custom learning journeys which are more focused and are taken a step further by developing leader-and-learner guides to make the learning process interactive to bring the content to life.

In addition to the bespoke trainings curated to employees, we also deploy learning challenges on a regular basis to create awareness on certain topics and grow key competencies throughout the organization. PCA University also uses algorithms to recommend content to learners based on courses they have completed.

Thousands of e-learning assets are available to all employees. The majority of our online resources are available 24 hours per day, 7 days per week. This benefit is available at no cost to PCA learners.

PCA e-learning started in 2001 and has seen over 6,000 individual learners complete over 42,000 courses. In 2021, 5,493 courses were completed by 1,603 employees for a total of 6,864 hours.

Industrial Maintenance Training and Development

Online maintenance training, provided by TPC (an outside vendor), is available for maintenance teams to enhance and develop their skills. We began using TPC maintenance training in 2010. In 2021, we had 355 learners who completed a total of 21,000 hours of training.

Leadership and Development

Throughout PCA's history, several initiatives and programs have been developed internally to grow PCA's leaders of tomorrow and build on the strengths of our current front-line, functional and general management leaders.

As we look to the future, we have continued to enhance our approach to training and development, finding new ways to better serve our employees and help them to grow and achieve excellence. We are leveraging technology and the experience of PCA experts to develop personalized content that is aligned with our business objectives and is made available virtually for broader reach. We also embed frequent feedback into the training process to increase engagement and ensure that content is on the leading edge. This approach helps empower our employees to grow their skillset and ensures that our customers continue to get the support they need to grow their business.

Current programs are as follows:

Generational Investment for Tomorrow Program (GIFT): Developmental program for college recruits or other new employees who are highly engaged and demonstrate leadership potential. Participants rotate among and learn across operational roles with an intent of furthering PCA's bench strength. GIFT participants attend conferences throughout the year to equip and build their leadership development competencies.

Blueprint for Success: Developmental program for college recruits graduating with an electrical, mechanical, chemical or industrial engineering degree. Engineers hired at PCA as part of the Blueprint for Success Program participate in a series of technical, functional and leadership development learning opportunities. The goal of the program is to equip engineers with the skills they need to optimize processes across PCA.

Engineers are paired with a mentor, and they collaborate on similar projects and engage with other program participants through a Microsoft Teams channel. Each engineer has multiple one-on-one calls with PCA's Training and Development Manager to provide feedback on their experience in the program.

Leadership Excellence and Professionalism (LEaP): A series of proven best practices delivered in focused training modules that describe what excellent leadership is and how excellent leaders behave. Modules are tailored based on the results of our employee engagement survey.

Leadership Development Program (LDT): Intended for those currently demonstrating deep engagement, initiative and promise. This 9-week program, spread over nine months is positioned to support the growth of current employees that have potential to report to the General Manager level within 2-5 years.

Educational Assistance

PCA established the Educational Assistance Program to support salaried employees in developing their capabilities through reimbursement of costs incurred in pursuit of degrees. Additionally, some participants of our Internship/Co-Op program qualify for tuition reimbursement.[6]

2021 EDUCATIONAL ASSISTANCE PARTICIPATION AND CONTRIBUTION

Employee		Co-Op		Total
Women	Men	Women	Men	
37	31	0	7	**75**
$391,100		$55,200		**$446,300**

ESG Training

We also train our employees on topics important to reducing risk, such as cybersecurity. The following trainings are specific to environmental, social and governance (ESG) topics:

Cybersecurity

Data fraud or theft and cyberattacks have been considered top global risks in terms of likelihood since 2012, and recent ransomware attacks have brought this risk into focus for many companies. To heighten our protection against cyber threats, we sought new and innovative ways to protect ourselves beyond the digital space. PCA recognized social engineering as the main avenue malicious actors use to gain access to digital assets, so we knew we needed a better-trained workforce.

We conducted research and found that humor played an important role in helping adults learn, and we wanted to avoid long, PowerPoint-types of courses. In February 2019, we launched a new training program utilizing short, comical videos that are easy to follow and understand. These videos cover topics such as phishing, data protection, physical security and sharing of sensitive information. In 2021 our employees completed 84,603 courses, totaling 4,230 hours.[7]

Ethics and Compliance

PCA holds ethics, integrity and lawful conduct as essential behaviors. To ensure that our high standards are upheld, we require salaried and supervisory employees to participate in and complete periodic online education on topics such as antitrust laws, protecting confidential information and intellectual property, conflicts of interest, financial integrity and fraud, insider trading, sexual harassment, and employment law. We also conduct in-person training for sexual harassment. In total, 8,472 hours of ethics and compliance training were completed in 2021.

Fiber Sustainability

As part of our fiber sustainability and chain of custody program, we provide annual training to a large population of PCA employees. Content varies between woodlands and mill staff and those at our packaging plants, and the depth varies by job function. We also prepare internal auditors to ensure each location maintains conformance to the standards. We provide a mix of on-demand content as well as live webinars. Records for salaried employees are maintained centrally, and hourly records are retained locally. In 2021 we reached over 9,100 employees for a total of 2,100 hours completed.

[6] Qualifications include minimum GPA of 3.0/4.0, at least one semester as a co-op or intern, and must be in their senior year of college.

[7] Assuming three minutes per training video and test question.

Employment

PCA strives to be the employer of choice and works to create a culture where all employees are treated with respect and dignity in a "golden rule" work environment.

2021:

15,200
EMPLOYEES

99.9%
FULL-TIME
IN THE U.S.

People are critical to how PCA attracts our customers and their business. Consequently, people are essential to our success, and we place a high priority on attracting talented and engaged employees. Retaining those whom we recruit and develop is paramount as we work toward achieving our objectives.

NEW EMPLOYEE HIRES *by age, 2021*

	Total	Women	Men
18–24	763	126	637
25–34	1,044	183	861
35–44	732	157	575
45–54	500	120	380
55–64	244	43	201
65+	10	1	9
Grand Total	3,293	630	2,663

EMPLOYEE TURNOVER *by age, 2021*

	Total	Women	Men
18–24	571	110	461
25–34	997	150	847
35–44	722	145	577
45–54	545	101	444
55–64	502	86	416
65+	235	24	211
Grand Total	3,572	616	2,956

Benefits Provided to Full-Time Employees

About 99.9% of PCA employees are full time and work in the United States. PCA provides comprehensive health and welfare benefits to its employees, including participation in medical, dental and vision coverage plans, an employee assistance program, wellness screenings, flexible spending accounts, basic and supplemental life/AD&D insurance, disability coverage and paid vacation. PCA provides medical and parental leave in accordance with U.S. laws. Examples of benefits include:

Health Care: The following plans are offered to salaried and hourly employees:

- **Medical Plans** and prescription plans with different employee cost and benefit levels that meet the varying needs of our employees.
- **Dental** coverage designed to place emphasis on preventive treatment, while providing assistance for more serious conditions.
- **Vision** coverage that provides discounts on glasses and contact lenses, in addition to providing coverage for routine eye exams.
- **Flexible Spending Accounts** that allow employees to use tax-free dollars to pay for eligible out-of-pocket healthcare or dependent care expenses.
- **Health Savings Account** available for those who enroll in the company's high-deductible medical plan option and offers a tax-free way to save for future healthcare expenses.

Employee Assistance Program (EAP): This program is a resource to help employees with everything from checking off daily tasks, online advice, webinars and up to eight free mental health counseling sessions.

Medical Guidance/Claim Assistance: Third-party assistance with one-on-one support to help make informed decisions about any medical condition. In addition, experts can provide support with medical claims and billing issues.

Wellness Screenings: We have partnered with a third-party healthcare group to provide free, quick and confidential preventive health checkups at company location sites to eligible employees.

Disability Coverage: Long-Term Disability (LTD) and Short-Term Disability (STD) plans for salaried and hourly employees.

Parental Leave: Coverage allowed in accordance with the U.S. Family Medical Leave Act (FMLA).

Vacation Days and Holidays: Paid vacation and holidays are made available to all full-time employees.

Retirement: Both salaried and hourly employees are covered by a defined contribution plan and/or defined benefit plan. In addition, we have a third-party organization that provides advisory services for the defined contribution retirement plan to help save for and live in retirement. These services include retirement account evaluations and various online investment resources provided at no cost to the employee.

Basic Life Insurance/Accidental Death & Dismemberment (AD&D): Both life insurance and AD&D are provided at a value equivalent to 1.5 times the employee's annual salary. Business travel insurance is also available to many employees that travel on behalf of PCA.

Supplemental Life Insurance/Supplemental AD&D: Most employees will have options to add supplemental life insurance for themselves, spouses and children. In addition, most employees will also have an option to add supplemental AD&D for themselves or family.

Stock Ownership: Available as an option in several employee thrift plans, including PCA's primary defined contribution plans.

Work-From-Home for Non-Essential Workers

PCA allows certain non-essential employees the flexibility to perform their duties remotely. Effective May 2021, PCA introduced a hybrid workplace policy for our corporate and administrative offices. This policy provides options to managers to allow their teams to work fully remote, partly remote, or vary their hours with flex time.

College Recruitment

PCA makes a focused investment in attracting and employing people with the right skills and expertise to build on our strong foundation of employee excellence. We recruit at numerous colleges and universities around the country, including:

State	College/University
AL	Auburn University University of Alabama University of South Alabama
CA	California Polytechnic State University
FL	Florida State University University of Florida
GA	Georgia Institute of Technology University of Georgia
ID	University of Idaho
IL	College of Lake County DePaul University Loyola University Northern Illinois University Northwestern University University of Illinois at Chicago
IN	Purdue University
LA	Louisiana Tech University McNeese State University University of Louisiana at Lafayette
ME	University of Maine
MI	Michigan State University Michigan Technological University Western Michigan University

State	College/University
MN	Iron Range Engineering University of Minnesota – Duluth University of Minnesota – Twin Cities
MS	Mississippi State University
NC	North Carolina State University
ND	University of North Dakota
NY	Rochester Institute of Technology
OH	Miami University Ashland University
SC	Clemson University
TN	University of Memphis University of Tennessee
TX	Lamar University
VA	Virginia Tech
WA	University of Washington Washington State University
WI	University of Wisconsin – Platteville University of Wisconsin – Stevens Point

Diversity, Equity and Inclusion

PCA employees are encouraged to do the right things for each other and foster a culture of caring and inclusivity. We embrace the fact that every person brings unique perspectives and experiences, which help PCA to work collaboratively to deliver exceptional customer experiences and position us as a market leader. We succeed through our people, who are highly engaged and results-oriented, operating in an entrepreneurial culture.

In 2021, we established a Diversity, Equity and Inclusion Council to hone our strategy, create a roadmap for inclusive leadership and set goals for the organization. Key focus areas of this Council will also include talent acquisition and development, community engagement and cultural alignment.

Our DE&I Council is sponsored by our Chairman and CEO, Mark Kowlzan. Excluding our CEO, this Council includes twelve leaders from across the company including corporate, mill and corrugated business roles. In 2021, this Council met several times both in person and virtually and received training on the strategic, tactical and practical concepts of DE&I. This Council also discussed current ways diverse candidates are sought and brainstormed ideas to attract and retain top talent.

As an ideas and solutions company, we believe it is essential to hire and promote diverse candidates and employees. This begins with employee engagement — as well as enhancing our leaders' skills in empathy, listening and interpersonal communication — and providing education and training. PCA encourages our employees to utilize our extensive online training library (PCA University) including Diversity, Equity & Inclusion specific training on recognizing and overcoming unconscious biases, fostering an inclusive work environment, improving communication across cultural boundaries and more. In addition, our "Blueprint for Success" and "Generational Investment for Tomorrow (GIFT)" training and leadership programs provide both engineers and recent college graduates with rotational and specialized training so that we continue to build and retain a pipeline of diverse and talented future leaders.

We are proud to be an equal opportunity workplace and an affirmative action employer.[8] We take a proactive approach to recruit diverse and talented applicants by sending open job postings to local organizations who specialize in recruiting protected classes of job candidates. On the following page is a summary of PCA's employee and Board of Directors demographics and in the Appendix to this report, you will find our U.S. Equal Employment Opportunity Commission's EEO-1 Report.

Diversity of Governance Bodies and Employees

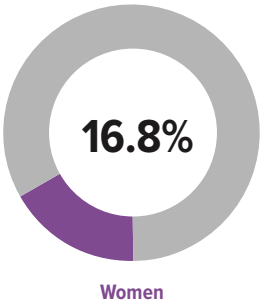
PCA's Board of Directors has adopted a policy under which it will actively seek out qualified diverse candidates for consideration when seeking new directors.[9]

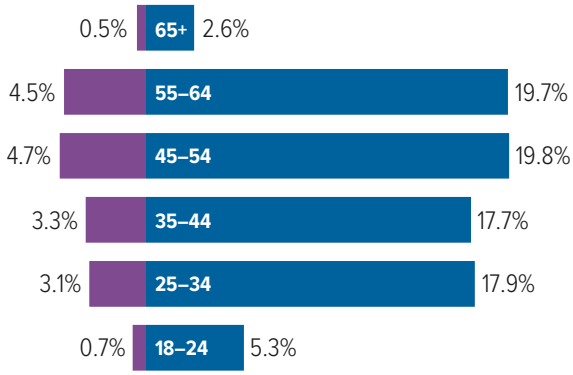
[8] PCA has long held an Equal Employment Opportunity and Affirmative Action policy that all salaried employees are required to affirm adherence to each year.

[9] Nominating and Governance Committee Charter

EMPLOYEE POPULATION *2021*

PCA is committed to developing, promoting and maintaining a culture and environment of respect and inclusion.





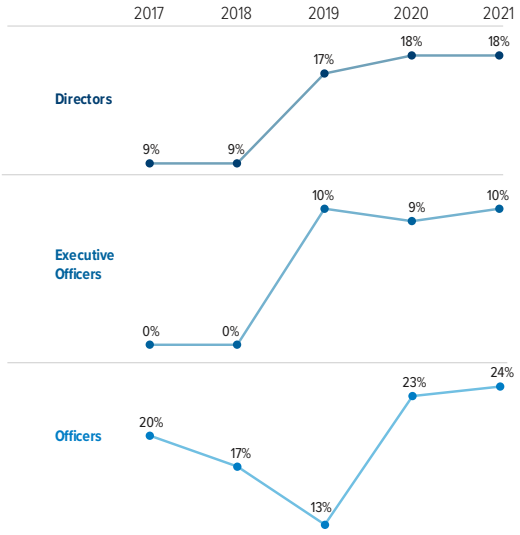
Data presented for calendar year 2021, as of 12/31/21

Board Members	Women	Men
30–50 years old	—	—
Over 50 years old	2	9

Executive Officers	Women	Men
30–50 years old	—	1
Over 50 years old	1	8

Officers	Women	Men
30–50 years old	1	8
Over 50 years old	6	14

PERCENT OF BOARD MEMBERS, EXECUTIVE OFFICERS AND OFFICERS WHO ARE WOMEN



Consumer Health and Safety

PCA believes that serving our customers, and the consumers who purchase from them, comes with significant responsibility. We do everything we reasonably can to support the health and safety of the ultimate consumer of food, beverage, pharmaceutical and personal care products carried in PCA packaging.

For more than a decade PCA has been a leader in working to ensure the safety of corrugated packaging food applications. In 2010 we undertook an initiative to universally implement Good Manufacturing Practices (GMPs). Concurrently, we chose to inspect our manufacturing locations and audit our food safety management systems to the appropriate AIB International standards. By December 2011, all PCA full-line plants had fully implemented GMPs and successfully audited to AIB standards. Also in 2011, we began exploring the Global Food Safety Initiative (GFSI) and undertook preparations to pilot emerging GFSI-benchmarked standards for practices for implementation across our system of manufacturing plants. In 2013 we launched an initiative to fulfill our commitment to certify all full-line packaging plants by the end of 2016.

Global Food Safety Initiative

GFSI provides the platform to build food safety management systems that will not only be effective, but also be externally assured, credible and universally accepted. PCA has developed, implemented and audited our food safety management systems to the FSSC 22000 standard. FSSC 22000 combines a rigorous and comprehensive set of GMPs with the internationally accepted ISO 22000 Food Safety Management standard.

PCA remains the only large North American, vertically integrated provider to accomplish GFSI conformance across all full-line corrugating operations. As the PCA system continues to grow organically and by acquisition, all full-line plants accomplish GFSI conformance, as well as sheet plants whose customer base benefits from certification.

COVID-19 Response

All certified locations maintained GFSI conformance throughout 2020. Our GMPs and food safety management systems prepared us well to implement CDC recommendations to help keep our employees safe. During 2020, we leveraged partial on-site audits to ensure continued conformance while minimizing the time auditors needed to spend in our facilities, thereby reducing the likelihood of transmission. We resumed normal on-site audits in 2021 while also ensuring the safety of our auditors and employees by following strict protocols.

Notable Achievements

2011	2012	2016
PCA led the corrugated industry in committing to GFSI accomplishment well in advance of standards being finalized for packaging.	Our Colby, Wisconsin, plant became the first North American corrugating operation to attain GFSI certification.[10]	PCA became the first large North American corrugated provider to achieve GFSI conformance nationwide across our entire system of full-line packaging operations.

[10] Our Colby, Wisconsin, plant moved to Marshfield, Wisconsin, in 2019 and is audited to the Safe Quality Food (SQF) Program.

Assessment of the Health and Safety Impacts of Product and Service Categories

We view our role in supporting the health and safety of the consumer purchasing the products we package to be of the utmost importance. This begins with ensuring that the containerboard we produce and incorporate into our packaging is compliant with statutory and regulatory law and is fit for its intended use. PCA invests in a robust product stewardship function to accomplish these objectives. This ensures the cleanliness and safety of the materials we combine and convert into packaging.

Food Safety Management Systems

A crucial component of our strategy is our food safety management systems, which are established and maintained at each certified operation. The foundation of these systems is based on GMPs and hazard analysis critical control points (HACCP). This foundation drives us to accomplish an in-depth review of every process we employ that may influence the safety of our products. End-to-end, all-encompassing and exhaustive efforts go into identifying any potential hazards and subsequently into quantifying any risks present in our processes. The ultimate objective is to prevent potential illness by effectively mitigating risk to consumer health and well-being. The end result is assurance that we have built health and safety expectations into our products. By doing so, both our customers and the consumer know that every effort has been made to support food safety. Our food safety management systems are audited annually by NSF International for external assurance.

GFSI Vision
Safe food for consumers — everywhere.

GFSI Mission
Provide continuous improvement in food safety management systems to ensure confidence in the delivery of safe food to consumers worldwide.

GFSI Objectives
- Reduce food safety risks by delivering equivalence and convergence between effective food safety management systems.
- Manage cost in the global food system by eliminating redundancy and improving operational efficiency.
- Develop competencies and capacity building in food safety to create consistent and effective global food systems. Provide a unique international stakeholder platform for collaboration, knowledge exchange and networking.

Community Outreach

We seek to be a good neighbor in the more than 90 communities where we operate, as well as in the larger global community. We see this objective as the right thing to do, and it fits with our business philosophy of fostering a caring culture within all PCA operations. Working collaboratively and driving shared value benefits everyone. We regularly promote our community outreach activities through our social media accounts on LinkedIn and Twitter.

We are currently reporting cash donations and are working to report volunteer hours and in-kind donations in the future.

CHARITABLE GIVING *Cash donations (dollars)*

	2017	2018	2019	2020	2021
Total	**$1,319,000**	**$2,764,000**	**$3,726,000**	**$985,000**	**$944,000**
Education (Schools and Scholarships)	36%	78%	80%	29%	**27%**
Charitable Organizations	64%	22%	20%	71%	**73%**

PROJECT UP™ by Boise Paper

Funded through sales of select office papers and in partnership with the Arbor Day Foundation, Project UP works to transform distressed urban areas, like school playgrounds and vacant lots, into vibrant green spaces. Since 2011, Boise Paper has sponsored 15 planting events across the country, including neighborhoods in Indianapolis, Baltimore, Miami, Toronto, Atlanta, Los Angeles, Chicago, Phoenix and Jacksonville. In cooperation with 60 local partners, more than 1,500 Project UP volunteers have planted thousands of trees and hundreds of other woody plants and perennial flowers.

Meeting Customer Expectations

Corrugated packaging plays an important role in nearly every business by containing and protecting products during distribution. It would not be possible to efficiently transport most goods without corrugated packaging.

Many decisions made by our customers are driven by consumers. For that reason, it is important for us to help our customers by educating consumers on the sustainability of corrugated packaging and other paper products. We financially support the Paper & Packaging Board and their How Life Unfolds® campaign, which educates consumers through television advertisements, engaging videos and social media content.

An engaged workforce is essential to providing outstanding customer service and to develop sustainable solutions that exceed our customers' expectations. Our employee engagement program, Your Opinion Counts, is offered to approximately 10,000 employees of PCA's Corrugated Products group. Our customer engagement program, Customer ConneXions, is currently offered to customers of PCA's Corrugated Products group.

These programs help us focus our efforts to ensure we are meeting our employees' needs and exceeding our customers' expectations every day.

Employee Engagement, *Your Opinion Counts*

At PCA, we believe that people make the difference. Our culture encourages our people to do their best and to do what's right — for each other and for our customers. We hold ourselves accountable for results and continuously strive to be better. Although we did not survey our employees in 2020 (as scheduled) due to the COVID-19 pandemic, we typically solicit their feedback every two years to learn about their work experience.

During 2021, we reviewed all aspects of our employee survey process. We evaluated several independent third-party research firms specializing in employee engagement and selected a new strategic partner. We also formed a new employee survey advisory panel with individuals representing different parts of our organization across the country. Together with our third-party partner, we reviewed and redesigned the survey questions, the way the survey is administered, and how results are shared across PCA. This in-depth review set the foundation for us to administer an updated and more accessible employee survey in 2022.

The goal of PCA's *Your Opinion Counts* survey is to solicit feedback and input from our employees on their work experience. Employees are given the opportunity to take the survey during working hours. The survey is anonymous, which allows employees to respond openly and honestly. We encourage participation and work to ensure that every voice is heard. Once survey results are collected and analyzed, we focus on turning results into action so that we can make PCA an even better place to work.

Customer Engagement, *Customer ConneXions*

Our customers know that a partnership with PCA isn't just about buying boxes. It's about building a relationship with a knowledgeable, trusted, committed source; adding value to their business and actively contributing to their success in the marketplace.

PCA takes this responsibility very seriously. We survey our customers on an ongoing basis in an effort to measure customers' perception of their relationship with us and to ensure that we are delivering on our promises.

We partnered with a thought leader in the customer engagement space to help us develop survey tools and measure our performance against metrics that are important to our customers. The feedback we receive is shared and acted upon in a timely manner and enables the voice of the customer to be central in our decision making.

The response rate for business-to-business organizations typically averages around 12% to 15%. PCA's response rate is significantly higher, indicating a high level of engagement between our employees and our customers. Our Net Promoter Score is also significantly higher than other manufacturing organizations.

PCA's business philosophy is that highly engaged employees lead to highly engaged customers. Our survey responses validate this statement as our customers repeatedly acknowledge the strong collaborative relationships they have with PCA's sales and customer service professionals.

EVERYDAY

PLANET

Climate Change

Energy

Emissions

Raw Material Sourcing

Water and Effluents

Waste

Climate Change

PCA is part of a regenerative, circular bioeconomy. When trees grow, carbon is sequestered both within the trees and in the soil where the trees are rooted. This is a substantial carbon sink which may more than negate subsequent emissions, depending on the energy consumption and end-of-life treatment that follows. The Greenhouse Gas Protocol is in the process of developing guidelines to account for the carbon negativity of this activity and expects publication in early 2023.

The largest sources of PCA's emissions are fossil fuels for energy, including upstream fuel-related emissions (62%), product end-of-life and operational waste (18%), and material sourcing and transportation (14%). For this reason, we are focusing our efforts on reducing fossil fuel consumption at our mills and box plants, diverting waste from landfills and optimizing the carbon benefits of sustainable forestry. This culminates in our climate change strategy: **MORE PCA**. "MORE" is an acrostic, standing for:

- **M**aximize resource efficiency.
- **O**ptimize carbon benefits of sustainable forestry.
- **R**educe waste to landfills.
- **E**nergize our operations with clean power.

Carbon Sinks

Natural carbon sequestration technology like trees and other plants remove carbon from the atmosphere. Sustainable Forest Management principles help to ensure conservation of soil and biological diversity, which are important for working forests to remain a carbon sink.

Clean Power

Clean electricity is generated from hydro, solar, wind, nuclear, geothermal, biomass and fossil fuel plants with carbon capture and storage. The industrial sector makes up 24% of U.S. greenhouse gas emissions.[11]

Landfill Emissions

In addition to carbon dioxide, methane emissions are also driving increases in global warming. Unlike carbon dioxide which persists in the atmosphere for hundreds or even thousands of years, methane lasts for a short time, around nine years. However, methane is a significantly more potent greenhouse gas. The leading sources of anthropogenic methane emissions are from agriculture (40%), energy from fossil fuels (34%), and waste (19%).[12]

For every million tons of corrugated, a 1% difference in recycling rate equates to a difference of 6,000 metric tons of CO_2e.[13] This is primarily due to methane emissions from the decomposition of corrugated in a landfill. According to the EPA, recycling corrugated containers reduces greenhouse gas emissions by approximately 88% as compared to landfilling.

[11] Sources of Greenhouse Gas Emissions | U.S. EPA 16 Methane Tracker 2020 – Analysis - IEA

[12] Methane Tracker 2020 – Analysis - IEA

[13] Assuming 80% of corrugated that is not recovered for recycling is landfilled at 0.9 metric tons of CO_2e/ton of landfilled corrugated containers, 20% is incinerated at 0.02 metric tons of CO_2e/ton, and 0.11 metric tons of CO_2e/ton of recycled corrugated containers. These are also the emission factors and assumptions used to calculate Scope 3 Category 12 emissions for end-of-life treatment of sold products.

Corrugated has boasted a recycling rate around 90% since 2011 because most corrugated containers reach their end-of-life upstream from consumers where recycling rates exceed 95%. As more boxes reach homes due to e-commerce, it will require a different approach to keep corrugated containers out of the landfill. Recycling rates for corrugated containers in residential programs are estimated to be between 40-50%.[14]

Carbon Neutrality Team

PCA formed a Carbon Neutrality Team in February 2021 that focuses on reducing fossil fuel consumption of our operations, both direct and indirect (purchased electricity). In 2021 the team accomplished the following:

- Educated PCA management on methods to reduce our carbon footprint and expanded awareness at each of our mills by designating a site Carbon Neutrality Lead.
- Developed CO_2 emissions models for each of our mills.
- Identified easily achievable "quick-win" projects to lower emissions with minimal capital spending.
- Established a new capital approval process to include scope 1 and scope 2 emissions associated with the project.
- Created a new corporate role dedicated to decarbonization efforts at our mills and plants.

The Carbon Neutrality Team is sponsored by PCA's Senior Vice President, Corporate Engineering and Process Technology, who is responsible for communicating the progress of this team to PCA's Sustainability Committee of the Board of Directors. In 2022, this team is developing a carbon reduction roadmap.

[14] American Forest & Paper Association, The Recycling Partnership

Energy

Improving energy efficiency and expanding our use of renewable sources is the central component of our sustainable energy strategy. Much of our focus has been on utilizing biofuels, which are byproducts of our manufacturing process, predominantly wood waste (bark) and black liquor solids. We also purchase supplemental fuels, some of which are also carbon neutral.

Mill energy usage is tracked and compared to internal and external benchmarks on a routine basis. Energy benchmarks for individual unit processes within a mill are tracked and compared with historical usage and targets. Energy usage is discussed in daily production meetings, and systems are in place for operators and managers to evaluate usage and pricing data in real time. Decisions can then be made on how to operate our mills the most efficiently and economically based on current energy information.[15]

Combined Heat and Power (CHP) and Self-Generated Electricity

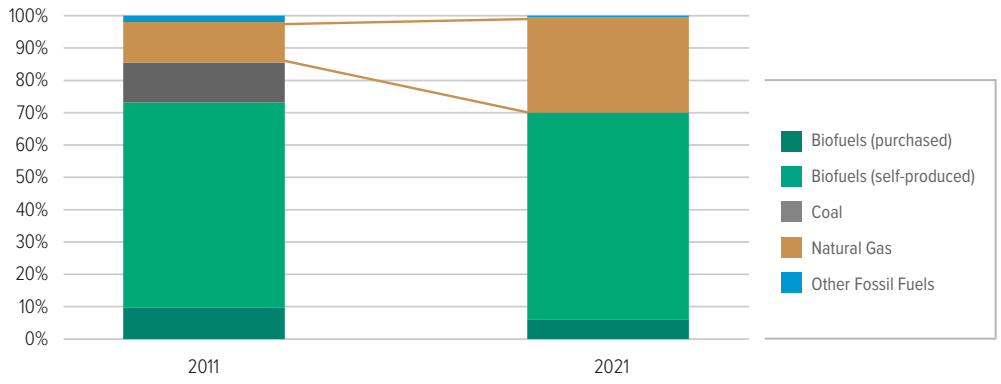
The majority of our mills utilize CHP processes wherein high-pressure steam is first routed to steam turbines to generate electricity on-site. Subsequently, exhaust steam from the turbines is utilized for both pulping and papermaking processes. Two of our mills, Tomahawk, Wisconsin, and International Falls, Minnesota, also self-produce and utilize hydroelectricity.

Energy Reduction

Through significant strategic investments, our mills have improved their energy efficiency by replacing fixed speed with variable speed electrical drives. Over the past decade, several PCA mills have increased capacity for biogenic fuel types and replaced coal with lower-emitting fuels like natural gas.

MILL ENERGY MIX BY FUEL TYPE

Switching from Coal to Natural Gas helped our mills avoid nearly 500,000 metric tons of CO_2e in 2021, compared to 2011.



Energy Modeling

All PCA mills have a computer model of their energy system, which is used to identify energy reduction opportunities. Multiple smaller capital projects are identified by the model and executed each year at all mills. When any capital project is identified, the model is used to determine the optimum energy balance for the new installation and

[15] Packaging plants account for less than 5% of our total energy consumption — these predominantly utilize purchased electricity and natural gas. Our full-line plant boilers combust natural gas to produce and supply steam to corrugators as well as for building heat.

to quantify the benefit of the project after it is installed. Mill and corporate personnel work together so that opportunities identified at one mill may be quickly implemented at other mills.

Examples of Capital Investment in Energy Improvements

Tomahawk

We built an enclosure over the wastewater treatment lagoon at our Tomahawk medium mill to facilitate the capture of methane gas, which is used as fuel for our boilers, while reducing greenhouse gas emissions. This generates an average 108,500 gigajoules (GJ) of biogenic, carbon-neutral energy per year, which is enough to power 2,745 U.S. homes.[16]

International Falls

We installed a turbine generator that increased our rate of electrical self-generation by 595,000 GJ of energy per year. This is the equivalent electrical consumption of 15,120 homes — or five times the number of households in the entire City of International Falls.

Counce and Valdosta

We upgraded our recovery boiler and turbine generator assets to increase the use of internally generated wood waste and black liquor as energy sources to increase our capacity to self-generate electricity. These projects substantially increased energy efficiency. This investment added approximately 3 million GJ of biogenic, carbon-neutral energy to our portfolio, which enables the mills to reduce consumption of fossil fuels.[17] It would require over 2,800 acres (or 4.4 square miles) of solar panels to generate this same level of renewable power.[18]

Filer City

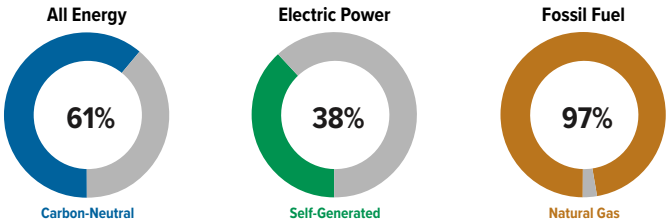
We recently installed a bubbling fluidized bed boiler to combust wood waste (previously shipped off-site) and other fuel types. This investment added 888,000 GJ of biogenic, carbon-neutral energy, and it allows the mill to reduce consumption of fossil fuels. Also, 10% of the boiler's fuel supply comes from used passenger vehicle tires. For every full year of operation, over 790,000 tires will be converted into recovered, useful energy.

ENERGY CONSUMPTION WITHIN AND OUTSIDE OF THE ORGANIZATION *(million GJ)*

	2017	2018	2019	2020	2021
Renewable Fuel	73.5	72.9	71.6	69.0	**70.6**
Non-Renewable Fuel	28.3	30.7	33.0	30.3	**34.3**
Electricity and Steam	9.5	9.7	9.4	9.5	**10.3**
Hydroelectricity	0.4	0.3	0.3	0.3	**0.2**
Total	**111.7**	**113.6**	**114.3**	**109.1**	**115.4**

Notes: Lower energy consumption in 2020 was due to the idling of our Jackson mill from May–Sept 2020. In 2021, we changed our data collection methods resulting in minor changes to previously reported data for the years 2017–2020 for renewable fuel, non-renewable fuel, and electricity and steam.

ENERGY PERFORMANCE METRICS *all locations, 2021*



[16] Based on U.S. EIA 2018 average annual electricity consumption of 10,972 kWh.

[17] Based on the difference in average energy production from biogenic fuels before the project (2005–2011), and since the project (2012–2019).

[18] 2013 National Renewable Energy Laboratory (NREL) report, based on Large PV generation-weighted average land use, 3.4 acres/GWh/yr.

Emissions

PCA is one of the largest producers of containerboard, corrugated packaging products and business paper in the United States. The scale of our production requires significant amounts of energy and resources. Much of these energy requirements are at our pulping and papermaking operations. These needs are met in large part via electric and steam self-generation and leveraging combustion of renewable biogenic fuels. While doing so creates greenhouse gas emissions, the majority are reported as biogenic CO_2. However, combustion of biomass does result in net additions of methane and nitrous oxide to the atmosphere. Emissions of these pollutants are included as part of our scope 1 emissions.

Greenhouse Gas Emissions Inventory

In 2021, PCA emitted 6.05 million metric tons of greenhouse gas emissions (market-based) from fossil fuels including non-CO_2 emissions from biogenic sources (methane and nitrous oxide). We additionally emitted 6.32 million metric tons of biogenic CO_2. The first-use (virgin) fiber we sourced sequestered 11.6 million metric tons of CO_2e in the biomass we purchased, which offsets most of our fossil and biogenic greenhouse gas emissions. The GHG Protocol does not currently have guidance for how to include removals in our inventory, but this work is underway and expected to be published in early 2023.

2021 FOSSIL CO_2e EMISSIONS *6.05 million metric tons CO_2e (market-based)*

Fossil by Scope:	32%	27%	41%
	Scope 1	Scope 2 (Market-Based)	Scope 3

Fossil by Category:	62%	18%	9%	7%	4%
	Energy	Waste	Materials	Mobile	Other
	• Scope 1, Fuel • Scope 2 • Scope 3, Cat. 3	• Scope 1, Company-owned landfill • Scope 3, Cat. 5, 12	• Scope 3, Cat. 1	• Scope 1 – Company-owned/leased vehicles • Scope 3, Cat. 4, 6, 7, 9	• Scope 1 – Process Emissions, • Scope 3, Cat. 2

**Scope 3, Cat. 8, 10, 11, 13, 14 & 15 are not applicable for PCA. For more information about our Scope 3 emissions, please see the appendix.*

2021 TOTAL GREENHOUSE GAS EMISSIONS (FOSSIL + BIOGENIC CO_2), NET OF REMOVALS *(metric tons CO_2e)*

Carbon removals were calculated assuming 50% the dry weight of wood procured is made of carbon.[19]

Today we track all direct (scope 1),[20] indirect (scope 2) and applicable other indirect (scope 3) emissions at our mills and packaging plants for which we have operational control.[21]

GHG EMISSIONS, DIRECT, INDIRECT, OTHER INDIRECT *(million metric tons CO_2e)*

	2017	2018	2019	2020	2021
Scope 1	1.87	1.80	1.91	1.77	**1.95**
Scope 2 (location-based)	1.40	1.28	1.20	1.10	**1.06**
Scope 2 (market-based)	-	-	-	1.38	**1.62**
Scope 3	-	2.27	2.47	2.30	**2.48**
Total (location-based)	**3.27**	**5.35**	**5.58**	**5.17**	**5.49**
Total (market-based)	-	-	-	**5.45**	**6.05**
Biogenic CO_2	6.57	6.52	6.40	6.16	**6.32**

Notes: In 2021, we changed our data collection methods and identified that we overstated our Scope 1 emissions in 2018 and 2019, and that a minor biogenic fuel source was double counted in previously reported data for the years 2017–2020. All updates to previously reported Biogenic CO_2 data to eliminate this double count, as well as other revisions to previously reported Scope 1 and 2 data, resulted in changes of less than 3%. Scope 3 emissions were restated for the years 2018–2020 to include end-of-life treatment of sold product, and fuel-and-energy related activities for natural gas. We changed our methodology for calculating emissions from wood pallets and determined it is a de minimis quantity, and changed our methodology for calculating emissions from purchased caustic soda. 2020 was our first year reporting a Scope 2 market-based figure. Lower Scope 1 + 2 emissions in 2020 were due to the idling of our Jackson mill from May–Sept 2020.

We compile our greenhouse gas inventory following the World Resources Institute and World Business Council for Sustainable Development Greenhouse Gas Protocol for Corporate Accounting and Reporting with the help of Schneider Electric's sustainability data management platform, Resource Advisor™, which we have utilized since 2013. We utilize invoice data for electric power, natural gas, propane and solid waste disposal, in addition to other minor sources contributing to our footprint. Where invoice data was not readily available, manually reported data was applied, and estimations were made for the remaining gaps based on consumption patterns within a plant or of like plants.

Scope 3 Inventory

After the publication of our 2020 report, the National Council for Air and Stream Improvement (NCASI) released two tools to support companies in our industry to compile their scope 3 inventories. These resources helped us identify gaps, as well as guided us to refine some existing processes. There were two significant gaps which more than doubled our previously reported scope 3 statements: End of life treatment of sold product, and fuel and energy related activities for natural gas. With these additions, we believe our inventory includes substantially all scope 3 emission sources.

[19] Accounting Framework for Biogenic CO_2 Emissions from Stationary Sources (epa.gov)

[20] Greenhouse gas emissions from company-owned landfills are reported on a one-year lag due to the complex nature of the calculation and the length of time required for data aggregation necessary for computation.

[21] In 2018, we began tracking emissions for our regional, in-house trucking fleet, our corporate headquarters and our technical center. In 2020 we began tracking emissions for our supply services and fulfillment centers. As of 2021, all manufacturing and related facilities other than Creative Design Centers are included in our inventory.

GHG EMISSIONS INTENSITIES

Numerator *(metric tons CO_2e)*	Denominator	2020	2021
Fossil Scopes 1 + 2 (Market-Based)	Per Employee	205	**235**
	Per $ Revenue	0.00047	**0.00046**
	Per Ton of Paper	0.62	**0.65**
Fossil Scopes 1 + 2 (Market-Based) + 3	Per Employee	356	**398**
	Per $ Revenue	0.00081	**0.00078**
	Per Ton of Paper	1.08	**1.11**
Fossil Scopes 1 + 2 (Market-Based) + 3 and Biogenic CO_2, Net of Removals	Per Employee	-1.32	**49**
	Per $ Revenue	-0.000003	**0.000096**
	Per Ton of Paper	-0.004	**0.14**

Lower greenhouse gas emissions intensity in 2020 than 2021 was due to the idling of our Jackson mill from May–Sept 2020.

Life Cycle Assessment (LCA) of Products

For both our corrugated and paper products, we provide data to our trade associations to conduct life cycle assessments for the entire industry. The most recent LCA for corrugated products was published in 2017 (using 2014 data). The industry average corrugated product had a global warming potential of 0.533 kg CO_2e per kilogram of corrugated.[22]

The most recent LCA for printing and writing paper products was published in 2010 (using 2006/2007 data). The industry average ream of office paper had a global warming potential of 4.25 kg CO_2e per ream.[23]

Air Emissions

We calculated nitrogen oxides (NO_x), sulfur dioxide (SO_2) and Particulate Matter 10 (PM_{10}) based on emission factors derived from stack testing and/or from our Continuous Emissions Monitoring Systems (CEMS). These factors are used to calculate our emissions based on the type and volume of fuel we combust and the efficiency of our control equipment.

AIR EMISSIONS *Mills (thousand metric tons)*

	2017	2018	2019	2020	2021
Nitrogen Oxides (NO_x)	6.4	6.4	6.6	6.0	**6.4**
Sulphur Dioxide (SO_2)	2.0	1.4	1.5	2.1	**2.4**
Particulate Matter 10 (PM_{10})	-	-	1.6	1.0	**1.1**

Note: 2019 was our first year reporting Particulate Matter 10.

[22] Using the flow accounting approach. For an executive summary of the 2017 corrugated LCA, please visit corrugated.org.

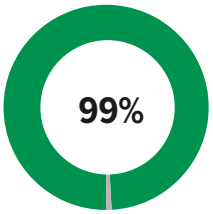
[23] Using the flow accounting approach. For an executive summary of the 2010 printing and writing paper product LCA, please visit Printing_and_Writing_Papers_-_Life-Cycle_Assessment_Summary_Report.pdf (twosidesna.org).

Raw Material Sourcing

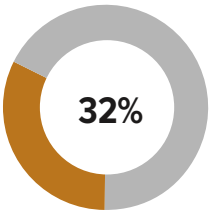
Wood fiber is a renewable resource and the essential material used to make our products. PCA's mill system utilizes both first-use (virgin) fiber and recycled content. A sustainable fiber stream requires both first-use fiber and recycled content. PCA's role in maintaining this sustainable system is to supply first-use fiber, which is necessary to continue to make recovered fiber available and useful. It is also our role to provide end markets to growers of timber, so they are provided appropriate economic incentives to continue to grow trees that provide important ecosystem services during their lifetime.

First-use fiber is sourced almost exclusively from the United States, with less than one percent sourced from Canada (Ontario and Manitoba) by our International Falls white paper mill. Our white paper mills also source a small amount of market pulp. We procure wood from timberland, both private and public, in the form of roundwood and in-field chips. We also procure residuals from sawmills in the form of chips and sawdust.

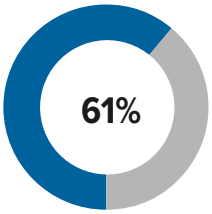
Percentage of First-Use Fiber From Trained Loggers



Percentage of First-Use Fiber From Certified Forests



Percentage of Recycled Content Classified as Post-Consumer



All PCA Mills

Responsible and sustainable procurement of fiber is both a key policy and principle at PCA. PCA's commitment to practicing and supporting sustainable forestry and responsible wood fiber procurement is communicated both internally and externally. Internally, our Sustainable Forestry Policy is required to be posted at all manufacturing sites as part of our certification program, and it is also readily available on our company intranet.

Externally, all PCA-approved wood suppliers receive our policy through an annual correspondence. Prior to delivery, we make sure that suppliers are adequately insured, are a legally registered business, and are able to meet our terms. Once approved and a purchase order has been submitted, PCA woodlands managers and foresters verify the accuracy of the information. Our wood management system tracks and catalogs details of our wood and fiber sourcing, including county of origin. PCA's policy is incorporated by reference in our Terms and Conditions for the Purchase of Wood Fiber Goods in every transaction and is available on our website.[24]

[24] https://www.packagingcorp.com/addendum-for-wood-fiber-goods

SOURCES OF WOOD FIBER *(thousand tons)*

	2017	2018	2019	2020	2021
First-Use Fiber (green tons)	14,439	14,668	15,021	13,933	**13,986**
PEFC Certified	27%	26%	26%	28%	**27%**
FSC Certified	5%	4%	4%	5%	**5%**
Controlled Material*	19%	70%	70%	67%	**68%**
Recycled Content	1,013	1,083	1,053	994	**1,200**
Market Pulp	5	4	6	18	**53**

Note: All data in thousands of air-dried short tons, except for first-use fiber, which is reported as thousands of green short tons.

**All fiber procured by PCA mills meets the requirements for SFI Fiber Sourcing, PEFC Controlled Sources, and FSC Controlled Wood at a minimum.*

Our packaging plants source containerboard (linerboard and corrugating medium) and corrugated sheets. The majority of our containerboard comes from PCA mills or trade partners. To ensure that our containerboard and sheets come from non-controversial sources, all suppliers are evaluated by our due diligence system and risk assessment.

Due Diligence System and Risk Assessment

PCA uses a due diligence system in conformance with the Sustainable Forestry Initiative® (SFI) and Programme for the Endorsement of Forest Certification (PEFC)[25] standards to avoid controversial sources in our supply chain. Each year we evaluate the contiguous United States and Canada for all of our operations that source wood fiber. Additionally, all of our mills have successfully been audited to the Forest Stewardship Council® (FSC®) standards.[26]

U.S. Controlled Wood National Risk Assessment (NRA) and FSC Canada Controlled Wood NRA.[27] These efforts help ensure that we avoid sourcing conflict timber or otherwise illegally harvested wood, genetically modified forest-based organisms, species that are included in Appendices I to III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and wood from land converted to other vegetation types.

We evaluate our sources at both the origin (country) level and supply chain level, as well as the effectiveness of social laws. The U.S. and Canada both have effective social laws, relatively strong law enforcement and low levels of corruption. For these reasons, our 2021 assessment determined there is negligible/low risk that PCA supplies originate from controversial sources. The FSC U.S. NRA identified 11 mapped areas of specified risk for high conservation values within PCA's supply area.

Environmental Impact Assessments

We utilize NatureServe and states' Natural Heritage websites to check for threatened or endangered species and ecosystem conservation priorities in combination with on-the-ground inspections prior to harvest activity. This enables us to ensure that biodiversity constraints are identified and that an effective plan of action is in place before, during and after forest management activity.

[25] (PEFC/29-31-222) (PEFC/31-29-09)

[26] (FSC-C139165) (FSC-C020415)

[27] Only applicable to our International Falls, Minnesota, mill.

PCA fully complies with the U.S. Lacey Act, Endangered Species Act and the Clean Water Act. We also fully comply with the Canadian Environmental Protection Act, Species at Risk Act and provincial timber regulations. PCA is in full conformance with the European Union Timber Regulation (EUTR).

Best Management Practices (BMPs)

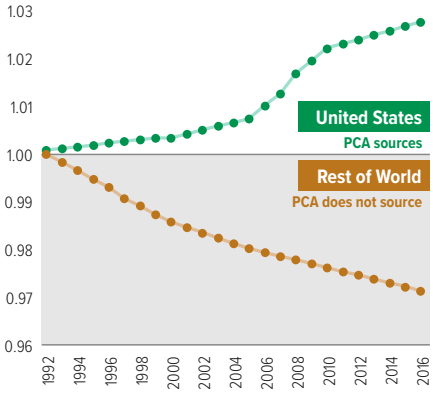
The forest certification programs we adhere to support the protection of biodiversity through voluntary and compulsory measures. For example, the SFI standard requires a trained Master Logger or Qualified Logging Professional (QLP) on-site during harvest activities, and wood suppliers must remain up to date on continuing education requirements, including biodiversity protection. In 2021, 99% of the wood sourced directly from forestlands was delivered by QLPs.[28] PCA promotes, conducts and financially supports training programs for logging professionals as part of our commitment to sustainable forestry standards. We are dedicated to applying all mandatory and voluntary states' best management practices (BMPs)[29] during harvest activity to protect a site's biodiversity and to preserve the quality of water and soil within the landscape.

Zero Deforestation

PCA sources the majority of first-use fiber from private landowners, which is consistent with the broader forest products industry. This is important because healthy end markets for timber are part of what keeps these lands forested. Without appropriate economic incentives like timber grown for harvest, landowners may elect to convert to different land uses such as human food agriculture and livestock, which are the leading causes of deforestation globally.[30] Additionally, PCA takes steps to mitigate risks when sourcing from specified counties that have a higher risk of conversion due to urbanization.

Deforestation is a significant issue in many parts of the world. Between 1992 and 2016, the world lost roughly 327 million acres of forestland. Conversely, during the same time period, the United States added 19.3 million acres of forestland. According to the U.S. Department of Agriculture, between 1953 and 2017, the amount of standing timber increased by 60%.[31]

FOREST AREA (% OF LAND COVERAGE) *Index, 1992=1*



Source: World Bank

[28] Although it is a requirement of voluntary standards, there are limited exceptions granted, because we are not legally allowed to deter new loggers from gaining entry to markets. We require loggers to be enrolled in the next available QLP training course at a minimum.

[29] To view states BMPs, please see the interactive map at https://www.stateforesters.org/bmps/

[30] http://www.fao.org/state-of-forests/en/

[31] U.S. Department of Agriculture, Forest Resources of the United States, 2017 (2019) https://www.fs.fed.us/research/publications/gtr/gtr_wo97.pdf Table 31 page 164

Certification

PCA has a fiber procurement program for all mills in compliance with the Sustainable Forestry Initiative® (SFI) Standard Requirements, the Forest Stewardship Council® (FSC®)[32] and the Programme for the Endorsement of Forest Certification (PEFC).[33] We also recognize the American Tree Farm System® (ATFS) individual and group certifications. Our program ensures compliance with the certification standards and follows all applicable laws and regulations. Approximately 7% of corrugated products were sold under certified chain of custody in 2021.

CERTIFIED PRODUCT SOLD *(thousand tons)*

	2017	2018	2019	2020	2021
Corrugated					
PEFC	61.8	167.3	174.9	206.3	**305.6**
White Paper					
FSC	95.2	126.6	116.5	72.2	**66.8**
PEFC	36.7	48.1	33.5	27.1	**40.7**
Total	**193.7**	**342.0**	**324.9**	**305.6**	**413.1**

Note: Corrugated output is measured in thousand square feet (MSF) and was converted to tons for reporting this metric in a common unit of measure for both our packaging and paper segments.

HISTORY OF CERTIFICATION

2005

PCA white paper mills certified to SFI Fiber Sourcing standard.*

2007

All of PCA's containerboard mills and corrugated packaging operations certified to SFI's Fiber Sourcing standard, including Certified Sourcing.

PCA white paper mills certified to SFI, PEFC and FSC Chain of Custody, and FSC Controlled Wood standards.*

2010

PCA's containerboard mills certified to SFI and PEFC Chain of Custody standards.

2011

PCA's entire system of corrugated packaging plants certified to SFI and PEFC Chain of Custody standards.

2018

PCA's containerboard mill system certified to FSC Chain of Custody and Controlled Wood standards.

PCA's entire system of full-line plants certified to FSC Chain of Custody standard.

2019

PCA containerboard mill system successfully audited to FSC U.S. Controlled Wood National Risk Assessment.

2020

PCA white paper mills successfully audited to FSC U.S. and Canada Controlled Wood National Risk Assessments.

**Prior to PCA acquisition of Boise, Inc. in October 2013.*

[32] (FSC-C139165) (FSCC020415)

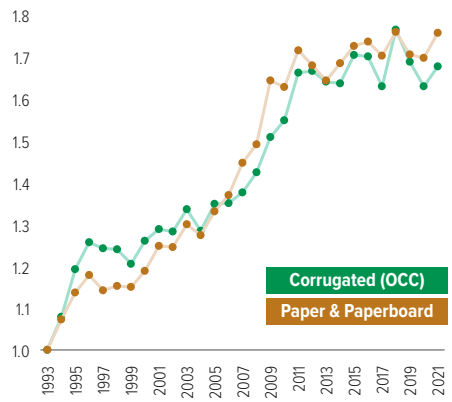
[33] (PEFC/29-31-222) (PEFC/31-29-09)

Recycling

Corrugated is the most widely recycled packaging material on the planet. To promote the recyclability of our products, PCA is a proud user of the *Corrugated Recycles* symbol and encourages our customers to print it on their qualified products. Since the program was introduced, the recycling rate of corrugated has increased from 54.5% in 1993 to 91.4% in 2021, and achieved a record of 96.2% in 2018.[34] Paper has a similar success story. Over the same time period, the recycling rate of paper and paperboard rose from 38.7% in 1993 to 68.0% in 2021, and it reached a record of 68.1% in 2018.

By recycling used paper, boxes and scrap from the manufacturing process, the amount of timber required to be harvested is reduced. This also serves to prevent greenhouse gas emissions from decomposition in a landfill. However, there are limits to fiber recycling. Wood fibers can only be recycled five to seven times before these become too short and brittle to bond any longer. *The Fiber Cycle Technical Document* published by Metafore in 2006[35] was updated by the National Council for Air and Stream Improvement (NCASI) in 2019 with current data. This document provides a model that takes into account the finite nature of fiber recycling and how long the cycle could continue without adding fresh fiber. Even when the recycled fiber utilization rate is maximized, the model shows that without the introduction of first-use fiber, the North American containerboard supply would be exhausted in 13.5 months, and printing and writing grades would be exhausted in 1.5 months.

INCREASES IN U.S. RECYCLING RATES *Index, 1993=1*



Source: AF&PA, U.S. Census Bureau

Recycled Content of Finished Paper Product

The recycled content of our finished products is calculated based on the proportion of recovered fiber to overall production after taking into account production yield for each stream. The average recycled content of our containerboard was 23% in 2021 (14% post-consumer, 9% post-industrial), the substantial majority in our corrugating medium. Our white paper division sells products under our ASPEN® brand that specify a minimum percentage of post-consumer recycled content (30%, 50% and 100%). This information is available through our Office Paper Product Finder on the Boise Paper website.[36]

Product Stewardship

PCA has a robust product stewardship process to ensure all raw materials used in producing, manufacturing, packaging and transporting paper and containerboard products comply with the applicable product regulations, including FDA and USDA, along with any certifications PCA has made regarding customer requirements. The product stewardship process (for product and raw materials qualification) must be followed for all new chemicals/ingredients prior to use in PCA's processes. In addition, PCA utilizes third-party testing facilities for its products to test for chemicals of concern on an annual basis.

[34] https://www.paperrecycles.org/statistics/recovery-use-of-old-corrugated-containers-(occ)

[35] https://twosidesna.org/wp-content/uploads/sites/16/2018/05/Metafore_-_The_Fiber_Cycle_Technical_Document_Summary_Report_2006.pdf

[36] http://bph.boisepaper.com/product/

Elemental Chlorine Free (ECF)

Our white paper mills do not utilize elemental chlorine gas in our bleaching processes. In addition, we ensure all first-use (virgin) pulp suppliers also use ECF bleaching. PCA's self-produced containerboard product is unbleached.

Heavy Metals

The Coalition of Northeastern Governors (CONEG) created Model Toxics in Packaging Legislation, which has been adopted by 19 U.S. states.[37] To ensure conformance, we test our paper products on an annual basis to determine that the presence of incidentally introduced heavy metals — namely lead, mercury, cadmium and hexavalent chromium — does not exceed 100 parts per million. None of these heavy metals are intentionally added to our products.

[37] https://toxicsinpackaging.org/the-clearinghouse/

Water and Effluents

Pulp and paper manufacturing is a water-intensive process. We use either surface or ground water, depending on the location of the mill. Water withdrawal is measured with in-line flowmeters. Our mills intentionally reuse/recycle each gallon of water within the pulping and papermaking processes. We quantify water recycling using the *NCASI Water Recycle Tool,*[38] and determined our average water recycle ratio to be 7.11 in 2021. States issue permits for groundwater and surface water based on extraction volumes. We typically report to each state where we operate mills at least once a year.

Water Risk Assessment and Due Diligence

We use the World Resources Institute (WRI) Aqueduct 3.0 Water Risk Atlas[39] to identify potential risks associated with our water supply. The assessment showed low risk for seven of our mills. Our Tomahawk, Wisconsin, corrugating medium mill assessment indicated high baseline water stress,[40] but we believe it is a limitation of the model as it is not indicative of our experience.

WATER WITHDRAWAL BY SOURCE *(in billion liters)*

Source	2017	2018	2019	2020	2021
Total	**288.2**	**280.5**	**273.9**	**270.8**	**274.9**
Surface Water	71%	70%	72%	73%	**71%**
Ground Water	29%	28%	27%	27%	**28%**
Municipal Water	<0.5%	1%	1%	1%	**<0.5%**

Note: Reporting of municipal water withdrawal at our packaging plants started in 2018. Data points may not add to 100% due to rounding.

Water Stewardship

Our trade association, the American Forest and Paper Association (AF&PA), and its members are in the process of developing industry-specific tools to help guide our water stewardship efforts. We hope to begin evaluating the usefulness of these tools by the end of 2023, and support AF&PA's commitment to set a goal for increasing member use of the tools by 2030.

Valdosta Mill Water Conservation Plan

In accordance with the Georgia Environmental Protection Division's Water Conservation Rules, our Valdosta, Georgia, containerboard mill has had a water conservation plan in place since 2004. The mill strives for continued incremental reduction of water consumption to the extent practical through a broad water conservation strategy. This includes recycling, reclamation and reduction of use. The key performance indicator used to determine this program's effectiveness is gallons per ton of product. The mill's average process water use is 7,328 gallons per ton, which is below the industry average.

[38] https://www.ncasi.org/technical-studies/sustainable-manufacturing/water-sustainability/water-reuse-recycle/

[39] Default parameters were used.

[40] GRI recommends reporting a location's water withdrawal as stressed if the baseline water stress or baseline water depletion is rated "high."

Water Reduction

In 2021, we designated Carbon Neutrality Leads at each of our pulp and paper mills to identify projects that reduce carbon emissions and water use. Our leads were able to identify five significant water reduction projects across our eight mills. We estimate these projects will reduce our annual water withdrawal by approximately 6% when fully implemented. We anticipate completing these projects by the end of 2023.

Water Discharge

Mills essentially "borrow" water resources for manufacturing, subsequently returning virtually all water back to the environment.[41] In 2021, PCA mills consumed 1.64% of water withdrawn, or about 908 liters per ton of production. Water is returned in two primary ways, depending on its use at the mill.[42] Non-contact cooling water (NCCW), used to cool energy turbines and lubrication systems during warm months, is returned without treatment. Process wastewater is treated in on-site wastewater treatment plants prior to being discharged to a river or lake. At all of our mills, treated wastewater is tested for biological oxygen demand (BOD) and total suspended solids (TSS) prior to discharge.

In addition to BOD and TSS, other parameters are tested in accordance with state-specific requirements. Each month, results are reported to state governments to verify we are operating within our permit limits.

WATER DISCHARGES *Mills (in billion liters)*

	2017	2018	2019	2020	2021
Total	**270.0**	**252.4**	**271.9**	**275.0**	**271.2**
Process Wastewater	73%	82%	77%	76%	**75%**
Non-Contact Cooling Water	27%	18%	23%	24%	**25%**

Note: Evaporative water loss calculated for 2019 was 2.3%.

WATER DISCHARGE QUALITY *Mills (lbs/ton of production)*

	2017	2018	2019	2020	2021
Biological Oxygen Demand (BOD)	1.69	1.88	1.38	1.54	**1.60**
Total Suspended Solids (TSS)	2.81	3.24	2.42	2.37	**2.38**

Stormwater Management Initiative

The majority of PCA packaging plants are subject to state stormwater permit programs. A stormwater permit requires a detailed stormwater pollution prevention plan (SWPPP), along with periodic inspections and stormwater sampling/monitoring, reports to state agencies, annual fees and annual training. The PCA corporate Environmental Health and Safety (EH&S) team established a goal in 2016 for the packaging plants to pursue stormwater "No Exposure Certifications" (NEC) offered by various state programs. Over the past four years, PCA plants have built on the foundational Good Manufacturing Practices (GMPs) previously achieved over the prior decade. Further improvements made include storing all oil and chemicals indoors and reducing pollutants in stormwater discharges.

[41] National Council for Air and Stream Improvement. (2018). Water Profile of the U.S. Forest Products Industry.

[42] Due to geographic location, International Falls operates a fully enclosed, UNOX system, (an anaerobic reactivated sludge system) for wastewater treatment. Wastewater treatment plant residuals from this system are subsequently dried and combusted as a biofuel. A fraction of one percent of Valdosta's treated wastewater is land applied to manage wastewater treatment system hydraulic inventory during drought events. Valdosta and International Falls both draw municipal water (for sinks, bathrooms, etc.), which is segregated and treated by publicly owned treatment works (POTW).

PCA has invested significant time and capital dollars where necessary to help packaging plants attain this goal where feasible. Since 2016, the number of PCA facilities achieving NEC status has more than doubled. Currently, 48 box plants have achieved the rigorous management standards and achieved NEC coverage.

As a best management practice, NEC plants conduct thorough monthly inspections with a site-specific checklist and annual NEC training. The success of the program reflects dedication to environmental excellence by the PCA plant and corporate personnel, as well as improved environmental performance, reduced compliance costs and reduced risk of spills at PCA packaging plants.

Waste

The majority of our mills own and operate private landfills (except Filer City, Michigan). These landfills are primarily used to dispose of two high-volume waste byproducts — ash from burning woody biofuels (see Energy) and residuals from our process wastewater treatment plants (WWTP). PCA mills and converting operations avoid sending waste to landfills whenever possible. For example, portions of process residuals are beneficially reused rather than landfilled.

At some of our mills, WWTP residuals and wood-fired boiler ash are beneficially used by local farmers as soil amendments or liming agents to achieve better overall moisture retention, to increase the organic matter content of topsoil and to elevate soil pH, which improves plant nutrient uptake. Additionally, combustion residuals are used on-site at the mills for building roads and banks (which are used for wastewater treatment ponds) and at the landfill as cover material. In some instances, where permitted, we dispose of mill construction waste in these landfills.

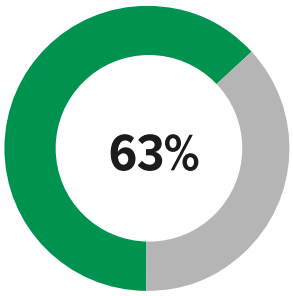
Our packaging plants recover the vast majority of their corrugated scrap and sell it back to mills as double-lined kraft (DLK), which is considered pre-consumer recycled material.

WASTE BY TYPE AND DISPOSAL METHOD *(thousand metric tons)*

Source	2017	2018	2019	2020	2021
Total	713.8	809.1	808.8	834.1	**977.7**
Recycled or Beneficially Reused	71%	68%	74%	70%	**63%**
Landfill	29%	32%	26%	30%	**37%**

Notes: Our 2019 Responsibility Report overreported hazardous waste due to a unit of measure error. Hazardous waste (disposed of by a third party) is reported in the Master Data Table of this report. The amount of waste in this category is insufficient to be included in the breakdown of all waste. Solid waste to landfill is reported for mills only in 2017. Packaging plants added 12–15 thousand metric tons per year.

Solid Waste



Recycled or Beneficially Reused

CORRUGATED RECYCLING

IN **2021**, PCA RECYCLED APPROXIMATELY **285,000** METRIC TONS OF CORRUGATED SCRAP.

THAT'S ENOUGH TO FILL **OVER 38 MILES OF 50-FOOT RAIL BOXCARS**.

EVERYDAY

APPENDIX

APPENDIX

Global Reporting Initiative (GRI) Index

ORGANIZATIONAL PROFILE		
102-1	Name of the Organization	Packaging Corporation of America
102-2	Activities, Brands, Products and Services	2021 Annual Report, pages 2–5
102-3	Location of Headquarters	Lake Forest, Illinois, USA
102-4	Location of Operations	2021 Annual Report, page 2
102-5	Ownership and Legal Form	Packaging Corporation of America is publicly held, incorporated in Delaware, USA. Our common stock is listed on the New York Stock Exchange under the symbol "PKG."
102-6	Markets Served	2021 Annual Report, pages 5-6
102-7	Scale	2021 Annual Report, pages 1–7
102-8	Employees and Other Workers	17
102-9	Supply Chain	2021 Annual Report, pages 4–6
102-10	Significant Changes	No significant changes to the organization during 2021.
102-11	Precautionary Approach or Principle	PCA follows a "precautionary approach" when developing, and prior to offering, new products. We seek to identify potential hazards and risk early in development, such that they can either be eliminated or assuredly managed to a level where they are acceptably mitigated for purposes of our customers, employees, communities and other stakeholders. Sensitivity to the impact that our products and their sourcing/ production/provision may have on health, safety and the environment is a key underpinning of our sustainability strategy and objectives.
102-12	External Initiatives	CDP EcoVadis Global Food Safety Initiative (GFSI) Paper & Packaging: How Life Unfolds Project UP! In partnership with Arbor Day Sedex
102-13	Membership of Associations	49
STRATEGY		
102-14	Statement from Senior Decision-Maker	4
102-15	Description of Key Impacts, Risks and Opportunities	8
ETHICS AND INTEGRITY		
102-16	Values, Principles, Standards and Norms of Behavior	Corporate Governance, Code of Ethics and Business Conduct, Code of Ethics for Directors, Code of Ethics for Executive Officers and Principal Accounting Personnel
102-17	Mechanisms for Advice and Concerns About Ethics	PCA has established a toll-free help line: (877) 643-8722. Concerns may also be written and mailed to: Compliance Officer Packaging Corporation of America c/o Corporate Counsel 1 North Field Court Lake Forest, Illinois 60045 Code of Ethics and Business Conduct, pages 6–8
GOVERNANCE		
102-18	Governance Structure and Committees Responsible	Corporate Governance Guidelines, Audit Committee Charter, Compensation Committee Charter, Section 162(m) Subcommittee Charter, Nominating and Governance Committee Charter, Board of Directors, Senior Management Team
STAKEHOLDER ENGAGEMENT		
102-40	List of Stakeholder Groups	Employees, customers, shareholders and other capital providers, governments, neighbors (community members), landowners and fiber suppliers, suppliers of other goods and services.
102-41	Collective Bargaining Agreements	2021 Annual Report, page 8
102-42	Identifying and Selecting Stakeholders	7
102-43	Approach to Stakeholder Engagement	7
102-44	Key Topics and Concerns Raised	7

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REPORTING PRACTICE		
102-45	Entities Included in the Consolidated Financial Statements	2021 Annual Report, page 47
102-46	Defining Report Content and Topic Boundaries	Boundaries for topic disclosures are determined based on data relevance, data availability and materiality. Significance of topics was determined based on surveys and research of stakeholder groups.
102-47	List of Material Topics	7
102-48	Restatements of Information	Any restatements of information are noted with an adjacent footnote.
102-49	Changes in Reporting	No changes in reporting period, material topics or topic boundaries.
102-50	Reporting Period	PCA's Fiscal (Calendar) Year 2021.
102-51	Date of Most Recent Report	June 30, 2021
102-52	Reporting Cycle	Annual
102-53	Contact Point for Questions Regarding the Report	responsibility@packagingcorp.com
102-54	Claims of Reporting in Accordance with GRI Standards	This report has been prepared in accordance with the GRI Standards: Core Option.
102-55	GRI Content Index	46–48
102-56	External Assurance	No external assurance for PCA's 2021 Responsibility Report. All data and information has undergone internal review.
ENVIRONMENTAL DISCLOSURES		
301	Materials Management Approach	35
301-1	Materials Used by Weight or Volume	36
301-2	Recycled Input Materials Used	36
301-3	Reclaimed Products	39
302	Energy Management Approach	30
302-1	Energy Consumption Within the Organization	31
302-2	Energy Consumption Outside of the Organization	31
303-1	Interactions With Water as a Shared Resource	41
303-2	Management of Water Discharge-Related Impacts	42
303-3	Water Withdrawal	41
303-4	Water Discharge	42
305	Emissions Management Approach	32
305-1	Direct (scope 1) GHG Emissions	33
305-2	Energy Indirect (Scope 2) GHG Emissions	33
305-3	Other Indirect (Scope 3) GHG Emissions	33
305-4	GHG Emissions Intensity	34
305-5	Reduction of GHG Emissions	31
305-6	Emission of Ozone-Depleting Substances (ODS)	Emissions from unrecovered refrigerant are a de minimis source of GHG emissions for PCA.
305-7	Nitrogen Oxides (NO_x), Sulfur Oxides (SO_x) and Other Significant Air Emissions	34
306	Waste Management Approach	44
306-2	Waste by Type and Disposal Method	44
306-4	Transport of Hazardous Waste	44
307-1	Non-Compliance With Environmental Laws and Regulations	PCA did not have any material violation of environmental laws in 2021, 2020, 2019, 2018 or 2017.
SOCIAL DISCLOSURES		
401	Employment Management Approach	17
401-1	Employee Hires and Turnover	17
401-2	Benefits Provided	17-18

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401-3	Parental Leave	18
403-1	Occupational Health and Safety Management System	11
403-2	Hazard Identification, Risk Assessment and Incident Investigation	12
403-3	Occupational Health Services	12
403-4	Worker Participation, Consultation and Communication on Occupational Health and Safety	13
403-5	Worker Training on Occupational Health and Safety	11
403-6	Promotion of Worker Health	13
403-7	Prevention and Mitigation of Occupational Health and Safety Impacts Directly Linked by Business Relationships	12
403-8	Workers Covered by an Occupational Health and Safety Management System	11
403-9	Work-Related Injuries	13
404	Training and Education Management Approach	14
404-1	Average Hours of Training Per Year Per Employee	14
404-2	Programs for Upgrading Employee Skills and Transition Assistance Programs	14-16
404-3	Percentage of Employees Receiving Regular Performance Reviews	PCA utilizes various formal and informal performance management processes, trainings and development programs to build competence among employees. Employees are evaluated on job performance, including performance against the expected standards of conduct.
405	Diversity and Equal Opportunity Management Approach	20
405-1	Diversity of Governance Bodies and Employees	20-21
413	Local Communities Management Approach	24
413-1	Operations With Local Community Engagement	24
413-2	Operations With Significant Actual and Potential Negative Impacts on Local Communities	PCA is not aware of any current operations that pose actual or potential material negative impacts on the communities where we operate.
416	Consumer Health and Safety Management Approach	22
416-1	Assessment of the Health and Safety Impacts	23
416-2	Incidence of Non-Compliance Concerning Health and Safety	PCA did not have any material incidents of non-compliance with product safety regulations or material incidents of non-compliance with voluntary product safety codes in 2021.

Membership of Associations

- American Forest and Paper Association (AF&PA)
- American Forest Resource Council (AFRC)
- American Society for Quality (ASQ)
- ASTM International
- Corrugated Packaging Alliance (CPA)
- Envelope Manufacturers Association (EMA)
- Federal Water Quality Coalition (FWQC)
- Fibre Box Association (FBA)
- Forest Stewards Guild
- Forest Stewardship Council® (FSC®)
- Institute of Packaging Professionals (IoPP)
- International Corrugated Case Association (ICCA)
- International Corrugated Packaging Foundation (ICPF)
- International Organization for Standardization (ISO)
- International Safe Transit Association (ISTA)
- National Council for Air and Stream Improvement (NCASI)
- National Fire Protection Association (NFPA)
- National Paper Trade Association (NPTA)
- North American Forest Partnership (NAFP)
- Programme for the Endorsement of Forest Certification (PEFC)
- Pulp and Paper Safety Association (PPSA)
- Recycled Paperboard Technical Association (RPTA)
- Society for Human Resource Management (SHRM)
- Society of American Foresters (SAF)
- Supplier Ethical Data Exchange (SEDEX)
- Sustainable Forestry Initiative® (SFI)
- Sustainable Packaging Coalition (SPC)
- Technical Association of Pulp & Paper Industry (TAPPI)
- The Longleaf Alliance
- The Nature Conservancy

Emission Factors and Global Warming Potential (GWP)

SCOPES 1 & 2	
Scope 1	U.S. EPA MRR: Final Rule (40 CFR 98) — Industrial Sector 2013
Scope 2 (2016–17)	U.S. EPA eGRID: eGRID 2017 v2 (w/ 2014 Data)
Scope 2 (2018)	U.S. EPA eGRID: eGRID 2018 (w/ 2016 Data)
Scope 2 (2019)	U.S. EPA eGRID: eGRID 2020 (w/ 2018 Data)
Scope 2 (2020)	U.S. EPA eGRID: eGRID 2021 (w/ 2019 Data)
Scope 2 (2021)	U.S. EPA eGRID: eGRID 2022 (w/ 2020 Data)
SCOPE 3	
Category 1 — Purchased Goods and Services	– Life cycle assessment of caustic soda production: a case study in China, 2013. – Life cycle assessment study of starch products for the European starch industry association (AAF): Sector study, Figure 3 – Life cycle assessment of forest harvesting and transportation operations in Tennessee – Environmental impacts of roundwood supply chain options in Michigan: Life cycle assessment of harvest and transport stages
Category 2 — Capital Goods	– Carnegie Mellon University Green Design Institute. (2020) Economic Input-Output Life Cycle Assessment (EIO-LCA) U.S. 2002 (428 sectors) Purchaser model
Category 3 — Fuel and Energy-Related Activities	– U.S. EPA eGRID: Grid Gross Loss (GGL) – DEFRA GHG Converstion Factors for Company Reporting, 2021
Category 4 — Upstream Transportation and Distribution	– Life cycle assessment of forest harvesting and transportation operations in Tennessee – Environmental impacts of roundwood supply chain options in Michigan: Life cycle assessment of harvest and transport stages
Category 5 — Waste Generated in Operations	– U.S. EPA Solid Waste Management and Greenhouse Gases. A Life Cycle Assessment of Emissions and Sinks, 3rd edition.
Category 6 — Business Travel	– U.S. EPA MRR — Final Rule (40 CFR 98) — Industrial Sector 2013; EPA (2014) Inventory of U.S. Greenhouse Gas Emissions and Sinks – Air Travel factors from 2017 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting. Version 1.0 August 2017.
Category 7 — Employee Commuting	– EPA Hub (Mar 2018), CO_2, CH_4, N_2O emissions data for highway vehicles are from Table 2-13 of the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015. Vehicle-miles and passenger-miles data for highway vehicles are from Table VM-1 of the Federal Highway Administration Highway Statistics 2015.
Category 9 — Downstream Transportation and Distribution	– EDF Green Freight handbook, Rail, Distance – U.S. EPA MRR — Final Rule (40 CFR 98) — Industrial Sector 2013; EPA (2014) Inventory of U.S. Greenhouse Gas Emissions and Sinks
Category 12 — End-of-Life Treatment of Sold Product	– EPA Emission Factors Hub (April 2021), Table 9
GLOBAL WARMING POTENTIAL	
CH_4 (2016–2019)	25
N_2O (2016–2019)	298
CH_4 (2020–2021)	28
N_2O (2020–2021)	265

Employer Information Report EEO-1, Employment Data

Number of Employees

Job Categories		Male							Female							Total
		WHITE	HISP	BLACK	ASIAN	NHOPI	AIAN	2+ RACE	WHITE	HISP	BLACK	ASIAN	NHOPI	AIAN	2+ RACE	
Exec / Senior Managers	(1.1)	79	1	0	10	0	0	0	12	0	0	1	0	0	0	**103**
First / Mid-Level Managers	(1.2)	1,428	178	68	24	4	6	5	281	25	10	15	0	1	3	**2,048**
Professionals	(2)	561	49	19	23	1	4	15	413	56	26	23	2	1	4	**1,197**
Technicians	(3)	41	5	1	0	0	0	0	9	3	0	0	0	0	0	**59**
Sales Workers	(4)	376	36	8	1	1	1	0	289	61	8	6	1	5	8	**801**
Admin Support	(5)	184	37	14	7	1	0	3	132	17	8	2	1	0	2	**408**
Craft Workers	(6)	1,229	128	51	10	0	8	10	15	1	3	0	0	0	0	**1,455**
Operatives	(7)	3,595	1,470	1,002	159	52	34	88	406	160	146	11	13	4	11	**7,151**
Laborers & Helpers	(8)	850	342	343	42	8	7	35	165	112	59	5	8	2	5	**1,983**
Service Workers	(9)	21	3	7	0	0	0	0	6	3	7	0	0	0	0	**47**
Total	(10)	**8,364**	**2,249**	**1,513**	**276**	**67**	**60**	**156**	**1,728**	**438**	**267**	**63**	**25**	**13**	**33**	**15,252**

PCA's EEO-1 report was filed with the U.S. Equal Employment Opportunity Commission in May, 2022. Data used for the report was as of 12/31/2021.
HISP = Hispanic • NHOPI = Native Hawaiian and Other Pacific Islanders • AIAN= American Indian or Alaska Native • 2+ RACE = Two or More Races

Master Data Table

Restated data shown in italics

	Unit of Measure	2021	2020	2019	2018	2017
PRODUCTION AND SHIPMENTS						
Containerboard Production	thousand tons	**4,887**	4,341	4,249	4,081	3,881
Corrugated Shipments	billion square feet (BSF)	**65.7**	62.8	59.4	58.9	55.7
White Paper (UFS) Production	thousand tons	**572**	648	947	1,017	1,118
OCCUPATIONAL HEALTH AND SAFETY						
Employee Days Away, Restricted or Transferred (DART)	cases x 200,000/total hours worked	**1.34**	1.25	1.05	1.02	0.94
Employee Lost Time Case Rate (LTCR)	cases x 200,000/total hours worked	**0.61**	0.63	0.49	0.44	0.39
Employee Total Case Rate (TCR)	cases x 200,000/total hours worked	**2.3**	1.9	1.8	1.7	1.6
Employee Fatalities		**1**	0	0	0	0
Temp. Worker Days Away, Restricted or Transferred (DART)	cases x 200,000/total hours worked	**0**	0	0.53	0.43	0.57
Temp. Worker Lost Time Case Rate (LTCR)	cases x 200,000/total hours worked	**0**	0	0.36	0.26	0.28
Temp. Worker Total Case Rate (TCR)	cases x 200,000/total hours worked	**1.2**	0.7	1.1	1.1	1.1
Temp. Worker Fatalities		**0**	0	0	0	0
LEARNING AND DEVELOPMENT						
Average Training Hours per Employee	hours/ employee	**1.8**	1.6	-	-	-
Female Employee Participation in Degree Pursuit Program		**37**	*42*	38	45	41
Male Employee Participation in Degree Pursuit Program		**31**	*43*	38	37	35
Female Co-Op Participation in Degree Pursuit Program		**0**	0	3	-	-
Male Co-Op Participation in Degree Pursuit Program		**7**	9	6	-	-
Total Participation in Degree Pursuit Program		**75**	94	85	82	76
Total Contribution for Degree Pursuit Program	U.S. dollars	**$446,300**	$435,000	$468,200	$396,500	$374,400
EMPLOYMENT						
Grand Total New Hires		**3,293**	2,199	3,010	2,427	1,560
Total New Hires of Female Employees		**630**	331	519	449	409
Total New Hires of Male Employees		**2,663**	1,868	2,419	1,978	1,151
New Hires of Female Employees 18–24 Years Old		**126**	91	131	117	118
New Hires of Male Employees 18–24 Years Old		**637**	473	639	460	307
New Hires of Female Employees 25–34 Years Old		**183**	93	176	136	104
New Hires of Male Employees 25–34 Years Old		**861**	632	848	704	369
New Hires of Female Employees 35–44 Years Old		**157**	69	100	77	83
New Hires of Male Employees 35–44 Years Old		**575**	379	496	357	213
New Hires of Female Employees 45–54 Years Old		**120**	53	77	87	84
New Hires of Male Employees 45–54 Years Old		**380**	255	341	307	177

Restated data shown in italics

	Unit of Measure	2021	2020	2019	2018	2017
New Hires of Female Employees 55–64 Years Old		**43**	25	32	32	19
New Hires of Male Employees 55–64 Years Old		**201**	116	159	143	80
New Hires of Female Employees 65+ Years Old		**1**	0	3	0	1
New Hires of Male Employees 65+ Years Old		**9**	13	8	7	5
Grand Total of Employee Turnover		**3,572**	2,623	2,611	2,277	2,108
Total Turnover of Female Employees		**616**	437	461	397	371
Total Turnover of Male Employees		**2,956**	2,186	2,150	1,880	1,737
Turnover of Female Employees 18–24 Years Old		**110**	69	118	92	67
Turnover of Male Employees 18–24 Years Old		**461**	337	386	273	282
Turnover of Female Employees 25–34 Years Old		**150**	110	112	74	80
Turnover of Male Employees 25–34 Years Old		**847**	542	589	517	409
Turnover of Female Employees 35–44 Years Old		**145**	84	67	65	68
Turnover of Male Employees 35–44 Years Old		**577**	409	388	319	328
Turnover of Female Employees 45–54 Years Old		**101**	76	73	71	69
Turnover of Male Employees 45–54 Years Old		**444**	306	316	298	294
Turnover of Female Employees 55–64 Years Old		**86**	72	60	57	56
Turnover of Male Employees 55–64 Years Old		**416**	405	328	327	29
Turnover of Female Employees 65+ Years Old		**24**	26	31	38	31
Turnover of Male Employees 65+ Years Old		**211**	187	143	146	134
EMPLOYEES						
Total Employees		**15,200**	15,200	15,500	15,000	14,600
Total Salaried Employees		**4,400**	4,500	4,500	4,500	4,400
Total Hourly Employees		**10,800**	10,700	11,000	10,500	10,200
Employees Covered by Collective Bargaining Agreements (CBA)		**6,840**	6,634	6,930	6,615	6,630
Hourly Employees in CBA as % of Total Hourly Employees		**63%**	62%	63%	63%	65%
Employees in CBA as % of All Employees		**45%**	44%	44%	45%	46%
Percentage of Female Employees		**17%**	16%	17%	17%	16%
Percentage of Male Employees		**83%**	84%	83%	83%	84%
Percentage of Full-Time Employees		**99.9%**	99.9%	99.9%	99.9%	99.9%
Percentage of Part-Time Employees		**0.1%**	0.1%	0.1%	0.1%	0.1%
Percentage of Employees in USA		**99.9%**	99.7%	99.7%	99.7%	99.7%
Percentage of Employees in Canada		**0%**	0.2%	0.2%	0.2%	0.2%
Percentage of Employees in Hong Kong		**0.1%**	0.1%	0.1%	0.1%	0.1%
DIVERSITY, EQUITY AND INCLUSION						
Number of Female Directors		**2**	2	2	1	1
Number of Male Directors		**9**	9	10	10	10
Number of Directors 30–50 Years Old		**0**	0	0	1	1
Number of Directors Over 50 Years Old		**11**	11	12	10	10
Number of Male Directors 30–50 Years Old		**0**	0	0	1	1
Number of Male Directors Over 50 Years Old		**9**	9	10	9	9
Number of Female Directors Over 50 Years Old		**2**	2	2	1	1
Total Number of Directors		**11**	11	12	11	11

Restated data shown in italics

	Unit of Measure	2021	2020	2019	2018	2017
Number of Female Executive Officers		**1**	1	1	0	0
Number of Male Executive Officers		**9**	10	9	6	6
Number of Executive Officers 30–50 Years Old		**1**	2	2	1	1
Number of Executive Officers Over 50 Years Old		**9**	9	8	5	5
Number of Male Executive Officers 30–50 Years Old		**1**	2	2	1	1
Number of Male Executive Officers Over 50 Years Old		**8**	8	7	5	5
Number of Female Executive Officers Over 50 Years Old		**1**	1	1	0	0
Total Number of Executive Officers		**10**	11	10	6	6
Number of Female Officers		**7**	7	3	4	4
Number of Male Officers		**22**	23	21	19	16
Total Number of Officers		**29**	30	24	23	20
Number of Female Employees 18–24 Years Old		**111**	116	134	131	121
Number of Male Employees 18–24 Years Old		**814**	833	822	790	782
Number of Female Employees 25–34 Years Old		**473**	459	466	455	422
Number of Male Employees 25–34 Years Old		**2,735**	2,760	2,755	2,648	2,621
Number of Female Employees 35–44 Years Old		**503**	505	540	526	488
Number of Male Employees 35–44 Years Old		**2,702**	2,723	2,712	2,605	2,579
Number of Female Employees 45–54 Years Old		**718**	718	735	716	665
Number of Male Employees 45–54 Years Old		**3,020**	3,156	3,165	3,309	2,858
Number of Female Employees 55–64 Years Old		**682**	638	639	623	578
Number of Male Employees 55–64 Years Old		**3,010**	2,896	3,010	2,889	2,858
Number of Female Employees 65+ Years Old		**75**	64	68	67	62
Number of Male Employees 65+ Years Old		**400**	370	475	456	451
ENERGY						
Energy Consumption From Non-Renewable Fuel	million GJ	**34.3**	*30.3*	*33.0*	*30.7*	*28.3*
Energy Consumption From Renewable Fuel	million GJ	**70.6**	*69.0*	*71.6*	*72.9*	*73.5*
Energy Consumed From Purchased Electricity and Steam	million GJ	**10.3**	*9.5*	*9.4*	*9.7*	*9.5*
Energy Consumed From Self-Generated Hydroelectricity	million GJ	**0.2**	*0.3*	*0.3*	*0.3*	*0.4*
Total Energy Consumed	million GJ	**115.4**	*109.1*	*114.3*	*113.6*	*111.7*
EMISSIONS						
Scope 1 GHG Emissions	million metric tons CO_2e	**1.95**	*1.77*	*1.91*	*1.80*	*1.87*
Scope 2 GHG Emissions (location-based)	million metric tons CO_2e	**1.06**	1.10	1.20	1.28	1.40
Scope 2 GHG Emissions (market-based)	million metric tons CO_2e	**1.62**	1.38	-	-	-
Scope 3 GHG Emissions	million metric tons CO_2e	**2.48**	2.30	2.47	2.27	-
Total GHG Emissions (location-based)		**5.49**	*5.17*	*5.58*	*5.35*	*3.27*
Total GHG Emissions (market-based)		**6.05**	*5.45*	-	-	-
Biogenic CO_2 Emissions	million metric tons CO_2	**6.32**	*6.16*	*6.40*	*6.52*	*6.57*
Nitrogen Oxides (NO_x) Air Emissions	thousand metric tons	**6.4**	6.0	6.6	6.4	6.4
Sulfur Dioxide (SO_2) Air Emissions	thousand metric tons	**2.4**	2.1	1.5	1.4	2.0

Restated data shown in italics

	Unit of Measure	2021	2020	2019	2018	2017
Particulate Matter 10 (PM_{10}) Air Emissions	thousand metric tons	**1.1**	1.0	1.6	-	-
MATERIALS — WOOD FIBER SOURCING						
First-Use (virgin) Fiber Sourced	thousand green tons	**13,986**	13,933	15,021	14,668	14,439
Percent by Weight of First-Use Fiber Certified Sourced		**32%**	33%	30%	30%	32%
Percent by Weight of First-Use Fiber PEFC Certified Sourced		**27%**	28%	26%	26%	27%
Percent by Weight of First-Use Fiber FSC Certified Sourced		**5%**	5%	4%	4%	5%
Recovered Fiber Sourced	thousand tons	**1,200**	994	1,053	1,083	1,013
Market Pulp Sourced	thousand tons	**53**	18	6	4	5
PEFC Certified Product Sold, Corrugated	thousand tons	**305.6**	206.3	174.9	167.3	61.8
PEFC Certified Product Sold, White Paper	thousand tons	**40.7**	27.1	33.5	48.1	36.7
FSC Certified Product Sold, White Paper	thousand tons	**66.8**	72.2	116.5	126.6	95.2
Total Certified Product Sold	thousand tons	**413.1**	305.6	324.9	342.0	193.7
WATER AND EFFLUENTS						
Total Water Withdrawn	billion liters	**274.9**	270.8	273.9	280.5	288.2
Surface Water Withdrawn	billion liters	**196.3**	197.1	197.0	197.7	203.9
Percentage of Surface Water for Process		**59.9%**	61.9%	59.4%	60.9%	59.8%
Percentage of Surface Water for Cooling		**39.9%**	37.9%	40.4%	38.9%	40.0%
Percentage of Surface Water for Potable		**0.2%**	0.2%	0.2%	0.2%	0.2%
Ground Water Withdrawn	billion liters	**77.2**	72.0	74.3	79.3	83.8
Percentage of Ground Water for Process		**89.0%**	87.1%	83.8%	85.5%	82.8%
Percentage of Ground Water for Cooling		**10.7%**	12.7%	15.9%	14.3%	16.9%
Percentage of Ground Water for Potable		**0.3%**	0.2%	0.3%	0.2%	0.3%
Municipal Water Withdrawn	billion liters	**1.4**	1.7	2.6	2.8	0.5
Water Consumption	liters/ton of production	**908**	1,110	-	-	-
Total Water Discharges at Mills	billion liters	**271.2**	275.0	271.9	252.4	270.0
Percent of Water Discharges at Mills From Cooling		**25%**	24%	23%	17.8%	27.4%
Percent of Water Discharges at Mills From Receiving		**75%**	76%	77%	82.2%	72.6%
Biological Oxygen Demand (BOD)	lbs/ton of production	**1.60**	1.54	1.38	1.88	1.69
Total Suspended Solids (TSS)	lbs/ton of production	**2.38**	2.37	2.42	3.24	2.81
WASTE						
Process Waste Recycled or Beneficially Reused	thousand metric tons	**616.0**	583.9	600.4	525.7	505.1
Process Waste to Landfill	thousand metric tons	**361.7**	250.2	198.1	237.4	201.5
Hazardous Waste (disposed of by third party)	metric tons	**75.0**	43.7	21.9	37.3	21.7
Total Process Waste	thousand metric tons	**977.7**	834.1	808.8	809.1	713.8
COMMUNITIES						
Cash Donations	dollars, in thousands	**$944**	$985	$3,726	$2,764	$1,319

Glossary

ADS Tons Air-Dried Short Tons. Pulp is generally reported as an air-dried product that is assumed to be 10% water and 90% dry pulp.

American Tree Farm System (ATFS) A group that works with private landowners to help them be effective stewards of forests.

Biodiversity ("biological diversity") The variety of life on earth or in a specific habitat or ecosystem.

Biogenic Carbon CO_2 emissions related to the natural carbon cycle, as well as those resulting from the combustion, harvest, digestion, fermentation, decomposition or processing of biologically based material.

Biogenic Fuel Fuel generated through the consumption of biomass. Generates biogenic carbon as opposed to the use of fossil fuels, which generates carbon that has long been removed from the natural carbon cycle (thus introducing additional carbon to the present day).

Biological Oxygen Demand (BOD) The amount of dissolved oxygen needed by aerobic biological organisms to break down organic material. Used to measure water quality.

Biomass Energy Energy derived by combusting fuel that is developed from organic material. In PCA's case, pulping byproducts like black liquor solids and wood waste (bark, knots, etc.). Renewable source of energy.

Black Liquor The remaining water, after chemical reclamation processes, from kraft process pulping operations. Contains significant lignin and hemicelluloses. Typically processed to evaporate water and to combust the remaining biogenic material, providing heat, steam and electricity to power mill processes.

California Transparency in Supply Chains Act of 2010
Requires larger manufacturers and certain others that do business in California to publicly disclose their efforts to eradicate slavery and human trafficking from their supply chains.

Carbon Dioxide Equivalent (CO_2e) Measure used to compare emissions when fossil fuels such as coal, oil and gas are burned — in equivalence to the global warming potential of carbon dioxide.

Carbon Sink Something that stores more carbon than it emits, thus amounting to net removals of carbon from the atmosphere. The world's largest carbon sinks include the ocean, soil and forests.

Caustic Soda Sodium hydroxide, NaOH, a strong base used in pulping processes.

Chain of Custody A certification that connects materials or products back to their original source. In the case of forest products like PCA's, it requires connecting and documenting sequential steps through the supply chain from the original procurement of fiber, whether from recycled or certified forests, through each subsequent stage of processing and distribution.

Containerboard Paperboard specifically made for the construction of corrugated packaging (linerboard and corrugating medium). It is also used, to a lesser degree, in the manufacture of several other types of packaging.

Days Away Restricted or Transferred (DART) Refers to the number of recordable (human health and safety) incidents per 200,000 hours worked that resulted in workdays where the employee was assigned to a different task, restricted in their duties or transferred due to work-related injuries or illness.

Direct Emissions (Scope 1) Greenhouse gas emissions directly controlled by PCA.

Double-Lined Kraft (DLK) Corrugated scrap from box-making. Considered pre-consumer recycled material.

"Dual-Chain" (Dual Chain of Custody) PCA's sheet plants are certified to SFI® and PEFC and are thus described as dual chain of custody.

ECF (Elemental Chlorine Free) A method of bleaching wood fiber from its natural color to white in various brightness levels.

Fair Labor Standards Act (FLSA) U.S. law declaring the federal minimum wage and hour requirements for employees, along with overtime eligibility. It also divides employees into exempt and non-exempt (regarding eligibility for overtime pay).

Family and Medical Leave Act (FMLA) U.S. law that permits employees to take unpaid time away from work to address health and family matters.

First-Use (Fiber) Fiber that has been produced (pulped) directly from wood and is being used in its first "cycle" — prior to typically being recaptured and recycled back into fiber-based products like paper, containerboard, tissue and similar.

Forest Stewardship Council (FSC) An international sustainable forestry non-governmental organization, known for their voluntary standards on the topic. PCA has earned chain of custody and controlled wood certifications from FSC.

Fossil Fuel Fuels such as gas, oil, coal, petroleum, kerosene, propane, etc. Naturally found, finite resources used for energy production.

FSSC 22000 Food Safety System Certification 22000. Non-governmental organization that produces food safety standards, which are benchmarked and accepted by the Global Food Safety Initiative. Fastest-growing standards in terms of adoption in the U.S. and Europe. PCA's full-line packaging operations are predominantly certified to FSSC 22000.

Global Food Safety Initiative (GFSI) Initiative created by food industry and retail leaders to collaboratively drive continuous improvement in food safety management systems around the world.

Green Ton Weight of trees as these are harvested with full moisture content, about 50% water weight.

APPENDIX

Greenhouse Gas (GHG) Gases like carbon dioxide, methane, nitrous oxide and chlorofluorocarbons (CFCs) that absorb and emit radiant energy.

Indirect Emissions (Scope 2) Emissions from the consumption of purchased electricity, steam, energy, etc., generated upstream of, but purchased by, PCA.

International Union for Conservation of Nature (IUCN)
Considers itself the global authority on the status of the natural world and measures to safeguard it.

Kraft A paper- and paperboard-making process that utilizes cooking (rather than mechanical processes) to produce wood pulp from solid wood. Frequently used to produce high-strength paper and paperboard from softwood (coniferous) timber. Frequently employed to produce linerboard (the outer facings of corrugated fiberboard).

Linerboard Containerboard specifically produced to be utilized as an outer facing in corrugated fiberboard and packaging.

Location-Based Scope 2 greenhouse gas emissions calculated based on the average emissions intensity of the region-wide electrical grid where a facility is located.

Lost Time Case Rate (LTCR) A mathematical calculation that describes the number of lost time cases per 100 full-time employees in any given timeframe.

Market-Based Scope 2 greenhouse gas emissions calculated based on the specific electricity that a facility is buying.

Materiality Determination of that which is relevant or significant.

Methane A colorless, odorless, flammable gaseous hydrocarbon that when present in the atmosphere poses a greenhouse effect significantly more potent than carbon dioxide (CO_2). Methane is made up of four hydrogen atoms and one carbon atom and is expressed chemically as CH_4.

Metric Ton (Tonne) A unit of weight equal to 2,204 pounds or 1,000 kilograms. Differentiated from a short ton, which is equal to 2,000 pounds.

MRR Mandatory Reporting Regulation. EPA-issued regulations regarding mandatory reporting on GHG, defining what must be reported and by whom.

NatureServe A network of scientists who collect decision-quality data about species and ecosystems. Used by PCA to protect biodiversity-rich areas.

NO_x Term used to refer to nitric oxide (NO) and nitrogen dioxide (NO_2) that are produced when fuel is burned. It can contribute to smog and have health implications.

Occupational Safety and Health Administration (OSHA)
U.S. Department of Labor group charged with ensuring safe and healthy working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance.

Old Corrugated Containers (OCC) Used corrugated packaging that has been recaptured for purposes of recycling. OCC has a recapture rate of between 85% and 95% in the U.S.

Other Indirect Emissions (Scope 3) Greenhouse gas emissions occurring in the value chain, upon which PCA may have some influence, but limited control.

Particulate Matter (PM) Microscopic solid particles or liquid droplets found in the air. Can impact respiratory health and air quality.

Programme for the Endorsement of Forest Certification (PEFC) PEFC is an international sustainable forestry standard/ endorsement group and non-governmental organization. PEFC writes standards on the topic and recognizes other national or regional standards after benchmarking to their requirements. PCA has earned a chain of custody certificate from PEFC. PEFC recognizes and endorses SFI certification of fiber sourcing.

Renewable Resources Resources that can replenish themselves naturally over time, e.g., wood products.

Safe Quality Food (SQF) A food safety and quality program that produces food safety standards, several of which are benchmarked/accepted by the Global Food Safety Initiative. PCA Marshfield is certified to SQF Level 2.

Semi-Chemical (Corrugating Medium) Containerboard specifically produced to serve as corrugating medium (to be fluted and bonded into the center of a corrugated sheet). Produced with a combination of mechanical and chemical cooking processes.

Short Ton (Net Ton) A unit of weight equal to 2,000 pounds. Differentiated from the long (gross) ton, which is equal to 1,000 kilograms, or 2,240 pounds.

SO_2 Sulfur dioxide is formed when fuels like oil and coal are burned. In sufficient concentrations, its presence can lead to the acidification of water and soil.

Stakeholder An individual or entity that has a concern or interest in a business.

Sustainability Accounting Standards Board (SASB) Provides sustainability accounting standards. Controlled by a foundation, chaired by Michael Bloomberg from 2014–2018.

Sustainable Forestry Initiative (SFI) SFI is a North American non-governmental organization that supports sustainable forestry and writes standards on the subject. PCA has the chain of custody and several sourcing certifications.

Terminations Employees who have voluntarily or involuntarily left employment in the reporting year.

Title VII of the Civil Rights Act of 1964 Federal law that prohibits employers from discriminating against employees on the basis of sex, race, color, national origin and religion.

Total Case Rate (TCR), officially, **Total Incidence Rate (TIR)** A mathematical calculation that describes the number of employees per 100 full-time employees who have suffered an injury or illness requiring medical treatment.

Total Suspended Solids (TSS) The dry weight of suspended particles that do not dissolve in water. These can be separated using a filter. Used to measure water quality.

APPENDIX

"Triple-Chain" (Triple Chain of Custody) PCA's mills and plants that are certified to all three sustainable forestry standards (SFI, PEFC and FSC) and are thus commonly referred to as triple chain of custody.

Turnover Percentage of employees who have voluntarily or involuntarily left employment in the reporting year.

Vertically Integrated A strategy and corporate architecture where a company owns and operates several operations or entities in order to manufacture from raw materials to finished/offered products. PCA is a vertically integrated packaging and paper company.

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