SUSTAINABILITY REPORT 2019

SCG
PACKAGING

Message from the CEO

SCG Packaging firmly believes in determination to operate the business in order to achieve Sustainable Development Goals through operating principles that attach significance to economic, social, and environmental considerations in a balanced manner to ensure sustainable growth for both the business and all stakeholders amid fast-changing circumstances.

In 2019, the importance of the Circular Economy, safety, energy management to climate change and water management had been majorly emphasized; for instance, the awareness and cooperation regarding Circular Economy throughout the supply chain were fostered, along with innovations being served as the primary catalyst, the raising of awareness and enforcing stronger safety compliance for employees and contractors through the Life-Saving Rules and technologies, which resulted in a continuous decrease in fatality accident each year, the reduction of energy consumption and greenhouse gas emissions by improving energy efficiency in production, increasing the proportion of renewable and alternative energy to reduce reliance on fossil fuels, and maximizing raw materials utilization and lastly, the conduction of risk assessments to formulate preventive actions and mitigation measures for water management in each area as well as reduced water consumption in accordance with the 3R principles and enhanced water efficiency by reusing water and by recycling treated wastewater in production process, with part of it allocated to agricultural areas around the factory to reduce costs for local farmers.

We are committed to initiating products and services through innovative development in order to bring sustainable value to society as well as actively enhance a better living and a strong society as a foremost foundation for sustainable growth.

Wichan Jitpukdee
Chief Executive Officer
SCG Packaging Public Company Limited

Contents

“Sustainable Packaging Solutions”

We deliver sustainable packaging solutions.

This book is printed on Green Offset Paper 100% EcoFiber (made from 100% recycled pulp) with environmental friendly mineral oil free ink

SCG Business Philosophy

SCG Packaging adheres to SCG Business Philosophy – SCG's long-standing ethical business practice that has been upheld by its Board of Directors, Management, and employees at all levels. As a result, SCGP has been recognized as a leading organization that conducts its business with transparency, accountability, and equitable treatment of all stakeholders.

SCG Business Philosophy

Adherence to Fairness

- Treat all stakeholders fairly and equitably.
- Operate honestly, transparently, and accountably.
- Uphold equality in the workplace without any discrimination based on personal relationship, seniority, or alma mater.

Dedication to Excellence

- Innovate to answer the needs of society.
- Strive to achieve goals and create better results.
- Keep pace with the world and stay prepared for changes.

Belief in the Value of the Individual

- Continuously develop the potential of employees at all levels.
- Work collaboratively as a team and respect each other's opinion.

Concern for Social Responsibility

- Pay attention to safety, occupational health and environment standards.
- Value and use resources mindfully.
- Contribute to environmental conservation, community protection, and social development.

Open & Challenge

Open – Be Open and Embrace Differences.

- Stay open-minded, listen attentively, and avoid stubbornly holding on to your beliefs.
- Be eager to learn.
- Collaborate and create networks, both internal and external.
- Dare to admit mistakes and be ready to learn from them to move forward.

Challenge – Challenge Yourself for Betterment

- Do not dwell on past and present successes.
- Dare to think outside the box and keep striving for better things.
- Dare to express contrary opinions and accept the conclusion.
- Dare to make prompt decisions informed by risk assessment and management.
- Dare to put ideas and lessons into practice to create results without waiting to be forced by circumstances.

Vision

“Packaging Business will be a leading regional packaging company offering solutions through innovative products and services and sustainable business practices.”

Sustainable Development Goals

SCG Packaging has formulated business policies to respond to the UN's Sustainability Development Goals (SDGs) with our promise: "Passion for Better." To this end, it seeks to achieve an economic, environmental, and social balance by prescribing business policies that will enable growth in a rapidly changing landscape, taking into account the short-term and long-term needs and expectations of all stakeholders, enhancing efficiency across its supply chain, optimizing energy efficiency, and reducing waste generation in order to elevate the quality of life, in line with Circular Economy principles.

SCG Packaging is committed to accomplishing the nine following Sustainable Development Goals:

Good Health and Well-Being
Ensure healthy lives and promote well-being for all at all ages.

Gender Equality
Achieve gender equality and empower all women and girls.

Clean Water and Sanitation
Ensure availability and sustainable management of water and sanitation for all.

Affordable and Clean Energy
Ensure access to affordable, reliable, sustainable and modern energy for all.

Decent Work and Economic Growth
Promote sustained, inclusive and sustainable economic growth as well as productive employment and decent work.

Industry, Innovation, and Infrastructure
Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.

Responsible Consumption and Production
Ensure sustainable consumption and production patterns.

Climate Action
Take urgent action to combat climate change and its impacts.

Life on Land
Protect, restore and promote sustainable use of terrestrial ecosystems.

Business Overview

SCG Packaging Public Company Limited (SCGP) is a regional leader in integrated packaging solutions. Its businesses are divided into two main business segments. The Integrated Packaging Chain and the Fibrous Chain. In addition, the Company provides a wide range of design and printing services as well as solutions to meet the specific needs of customers.

Business Operation

1

Integrated Packaging Chain

SCGP offers a comprehensive array of packaging products with over 120,000 units (SKUs), consisting of:

Flexible Packaging
It helps extend product shelf life and lends itself to logistics thanks to its lightweight.

Retail Display Packaging

Corrugated Containers

2
Fibrous Chain

This chain comprises safe, environmentally-friendly and food safety packaging under the brand “Fest,” recognized for its beautiful designs and comprehensive functions for consumers, as well as pulp-based products and printing and writing paper.

Rigid Packaging
It helps present the product and offer high barrier properties.

Packaging Paper
This group of products, which includes paper used in corrugated containers, recyclable paper bags, and industrial bags, caters to a diverse range of ever-shifting consumer needs, such as in businesses related to fast-moving consumer goods, (FMCG), retail businesses, and E-commerce businesses.

Dissolving Pulp
It is derived from eucalyptus plantations and it is used to produce rayon for the textile industry.

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Innovations for Sustainability

Through R&D, SCG Packaging strives to deliver packaging solutions that embrace Circular Economy principles and use an efficient, eco-friendly manufacturing process to achieve greater convenience and safety, longer shelf life, recyclability or biodegradability, and economic feasibility. To this end, we apply innovations to every stage of the manufacturing process, from upstream (the development of raw materials, fibers, and additives) and midstream (the development of paper and plastic materials) to downstream (the development of packaging products).

Fiber Technology and Advanced Additives

High-performance additives, such as modified nanocellulose-starch (Fortina), and Powerseries additives, are used to enhance the durability of packaging paper. In conjunction, fiber modification technology and fiber engineering are applied in order to improve tearing resistance and burst strength.

- **Fortina**
  Capable of improving paper strength by 30-50%.

- **Long fiber substitute**
  Modified nanocellulose-starch can serve as a substitute for long fibers, which cannot be manufactured in Thailand, to reduce reliance on imports.

Integrated Packaging Chain

Corrugated Containers

Retail Display Packaging

Flexible Packaging

Technology for Lightweight Cartons

Lightweight cartons are manufactured with new fiber arrangement and paper pulp structuring technologies, along with a coating technology that improves strength and creates a highly smooth surface that allows a crisp and beautiful print.

- **Green Carton**
  These eco-friendly corrugated cartons not only use less paper material to produce without compromising the quality or strength but also reduce transport energy consumption and logistics costs thanks to their light weight.

- 42.38 kWh/ton of energy saved in the manufacturing of green cartons
- Over 25 g./sq.m. of paper reduced for each product model

Advanced Material Technology

SCGP has developed flexible packaging made from multi-layer monomaterials that is readily recyclable yet retains protective capabilities and high impact resistance as well as modified atmosphere packaging (MAP), which can extend the shelf life of fresh food thanks to its controlled moisture and oxygen permeability.

- **Odorlock**
  The packaging locks in odors and prevents them from contaminating other products, allowing food items such as durians and fermented fish to be transported or put on display in stores along with other products.

• **Plasterboard liners**
These tough and durable liners are used in gypsum boards and adhere well to gypsum.

• **Sack kraft paper and bags**
Tough, flexible, and highly resistant to tensile force and tearing, this paper lends itself to industrial applications.

Bravo Tech Coating Technology

The coating technology not only gives desired properties to packaging, such as fat impermeability, frost resistance, and insulation but also protects the product effectively, requires less material to produce, and is easy to recycle.

• **Fest**
The natural pulp-based food packaging features a durability-enhancing coating and can be heated or frozen without losing its properties. It is also recyclable and biodegradable.

• **FybroZeal**
Made from natural pulp, these recyclable and biodegradable paper bags are heat-sealed and thus require no plastic films.

• **OptiBreath**
The packaging can keep fruits and vegetables fresh longer and give them longer shelf life compared to regular bags.

• **OptiSorb**
The sachet absorbs ethylene that fruits naturally produce and slows down ripening.

Product and Technology Development Center (PTDC)

As SCGP's primary research and development center, PTDC consists of laboratories for research, experiments, and testing where assessments are conducted on products from different plants to determine their quality and properties. PTDC's personnel research and develop innovations in accordance with the direction of the business and foster partnerships with leading universities both in Thailand and overseas.

Integrated Packaging Solutions

To meet a diverse range of needs of all customer segments, one of SCG Packaging's key efforts is the active and continuous development of its innovation capabilities to offer products, including pulp and paper packaging polymer packaging, and food packaging as well as design, printing, and marketing services in accordance with Circular Economy principles, using an eco-friendly and resource-efficient manufacturing process, to enhance customer satisfaction and experience.

Circular Economy Solutions

Using resources efficiently and protecting the environment in accordance with the principles of sustainable development

- **Microflute:** Microflute for small-sized packaging. It offers a smooth surface for high quality printing and great strength to satisfy the demand of industries for various packaging solutions.

Packaging for Containing Goods

Smart & Functional Solutions

Smart packaging is developed using design, printing, and production technologies, resulting in packaging that has more advanced features than general packaging.

- **Digital Watermark:** This is a technology for printing barcodes as digital codes on the surface of packaging to replace traditional barcodes. It helps prevent the counterfeiting of goods with a tracking feature for the products along the supply chain as well as for the payment process. This feature is not only for convenience and security purposes, but also offers a new customer experience.

Packaging for Displaying Goods

Convenience Solutions

Developing convenient, ready-to-use packaging and services to serve customer's needs.

- **Shelf Ready Packaging:** Designed to both be convenient and to look good when products are on shelves, it helps make products stand out and can be easily installed in seconds.

We Packag for A Se

Elevating Solutions through Quality Personnel

Designers	Customer Service Officers	Researchers	Expert Engineers
+40	+500	+90	+120

E-commerce Solutions

End-to-end e-commerce services for small- to medium-sized businesses as well as customized packaging for SME businesses.

- **End-to-end E-commerce services**: Offering packaging solutions for online platform customers; smaller quantities of printing, faster lead time, and competitive pricing.

Innovate ing Solutions ll Customer gments

Packaging for Transportation

Packaging for Exhibitions

Packaging for Marketing Promotion

Small Lot Solutions

Our production capabilities allow us to both respond to the needs of companies with high and low demand for packaging.

- **Digital Printing:** Digital printing is a system that can reduce the production time of packaging and can print on corrugated sheets and many materials. The printing is precise and clear, with beautiful colours, while also reducing the limitations of small lot productions.

Marketing Event Solutions

This design service for exhibitions and product showcases includes manufacturing, installation, as well as collecting used materials for recycling.

- **Paper Furniture Design Service:** Produced from high quality containerboard with beautiful printed designs from water-based ink, 100% recyclable, and easy to store and transport.

Corporate Governance and Sustainable Development

SCG Packaging takes into account risks, opportunities, demands, and expectations of all stakeholders in formulating business strategies to ensure sustainable growth and achieve an economic, social, and environmental balance. The company also seeks to develop and deliver safe, eco-friendly, and quality products to meet a diverse range of consumer needs in accordance with Circular Economy principles while remaining committed to the preservation of sustainable environmental value and ecosystems, workplace safety maximization, as well as social and community development in every location where SCG Packaging operates.

Changes for Sustainability

• Making business adjustments to accommodate exponential growth towards becoming a packing solutions provider, especially in the high-growth potential ASEAN market.

• Adopting digital technology in designing and introducing automation to manufacturing to reduce production time, reduce production lot size, and be able to meet more customers' needs.

• Maintaining market leadership through packaging solutions in accordance with Circular Economy principles to meet consumer needs in terms of environmental friendliness and gain competitive advantages.

• Modifying the organizational management structure, enriching employees' skills and competencies consistent with the company's sustainable development approach, and enhancing good leadership skills and digital capabilities to create value that meets customers' needs promptly.

Corporate Governance

• SCG Packaging has conducted business with responsibility, transparency, and fairness, adhering good corporate governance principles and SCG Business Philosophy, namely "Adherence to Fairness, Dedication to Excellence, Belief in the Value of the Individual, and Concern for Social Responsibility." which form the cornerstone of corporate best practices under SCG Code of Conduct framework on the basis of sustainable and balanced benefits.

• SCG Packaging has declared compliance policies and good corporate governance practices both in Thailand and in every country where SCG Packaging operates.

• Compliance Policy
To ensure that SCG Packaging's operation complies with relevant laws and regulations and that all employees perform their duties with honesty and integrity according to SCG Packaging Code of Conduct and be good citizens in every country where SCG Packaging operates.

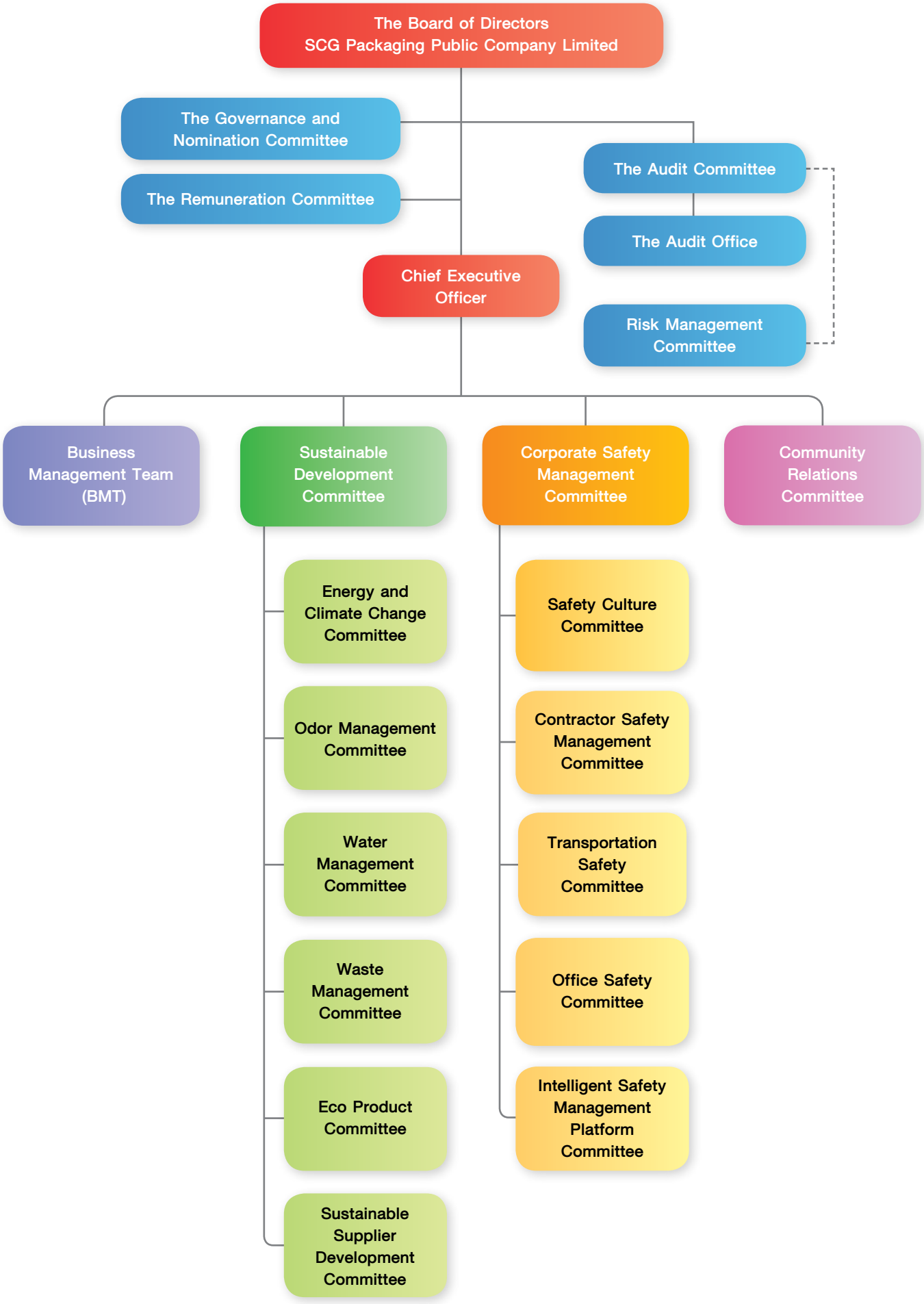
• Anti-Corruption Policy
To ensure that SCG Packaging has defined appropriate responsibilities, guidelines and regulations to prevent corruption in every business activity of SCG Packaging.

• Anti-Trust Policy
To ensure that SCG Packaging employees understand and strictly adhere to fair business practices as well as take into consideration trade ethics together with the interests of customers and suppliers and comply with antitrust laws.

• Insider Policy
To ensure that SCG's Packaging insider information is appropriately managed and prevent any leakage or abuse that could create unfair advantage.

• Stakeholder Engagement Policy
To provide clear guidelines on conducting business for SCG Packaging employees so as to offer shareholders long-term value added and take into considerations the interests of other SCG Packaging stakeholders.

Sustainable Development Structure



Sustainable Supply Chain

SCG Packaging adheres to an approach whereby it seeks to develop the entire supply chain to create sustainability for the business operation, society, and the environment, consisting of the following steps:

1

Green Manufacturing

• Improve the effectiveness and efficiency of the operation to achieve operational excellence in accordance with the Business Philosophy "Dedication to Excellence" by defining both short-term and long-term indicators and goals of each issue and applying management systems and standards such as the Total Quality Management, the Total Productive Maintenance, and the Integrated Business Excellence (IBE); as well as implement Safety Performance Assessment Program (SPAP) and Environmental Performance Assessment Program (EPAP) to boost the confidence of stakeholders in the Company's safety and environmental operations.

• Commit to developing employees and suppliers in accordance with the Business Philosophy "Belief in the Value of the Individual," which believes that human resources are key factors for the Company's operation; and set up a Learning Council to create more effective learning systems and introduce them to the countries where SCG Packaging operates in order to ensure uniform standards.

2

Upstream Supply Chain Improvement

• Conduct an environmentally-friendly procurement and contractor safety management system to strengthen suppliers' sustainable development.

3

Downstream Supply Chain Value Creation

• Create value-added, environmentally-friendly products and services to sustainably meet customers' needs.

Sustainable Development Promotion

• Provide assistance and support to strengthen society in accordance with the Business Philosophy "Concern for Social Responsibility," even though it is for a cause that is not directly relevant to SCG Packaging.

4

Materiality

SCG Packaging has compiled and prioritized Materiality issues relevant to business operation in reference to the Global Reporting Initiative (GRI) Standards, and incorporated participation in the prioritization of Materiality issues to ensure that the issues will be managed appropriately.

Steps for Materiality Assessment

01 Compile sustainability issues from across the supply chain (raw material procurement/ manufacturing/logistics and distribution/products and services usage).

- SCG Packaging Sustainable Development Guidelines.
- International guidelines (GRI, DJSI, WBCSD, etc.).
- Opinion panels with multi-disciplinary experts.
- Employee satisfaction surveys.
- Community satisfaction surveys.
- Corporate image surveys.
- Whistleblowing channels.
- Corporate risk assessment.

02 Evaluate the importance of the issues by the impact on stakeholders.

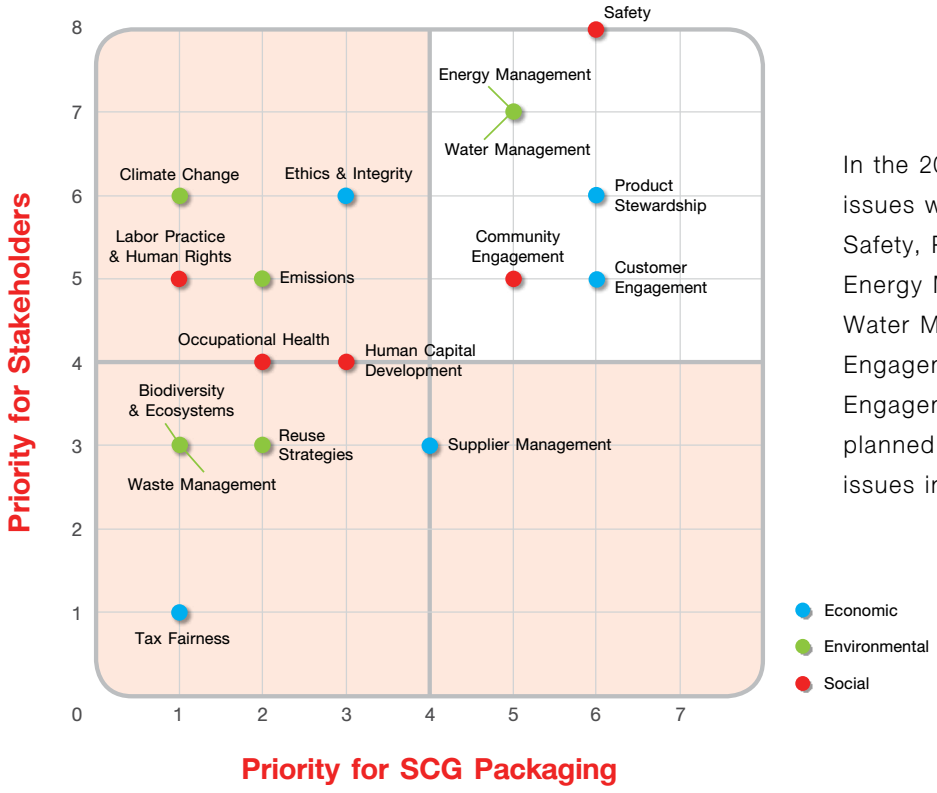
- Conduct a workshop with representatives from all departments directly related to each group of stakeholders to evaluate the impact levels.
- Hold department-level meetings to review the impact levels analyzed from external stakeholder's viewpoint.

03 Evaluate the importance of the issues by the impact on the company.

- Conduct a workshop with representatives from various departments and specialists to evaluate and prioritize the impact levels from the viewpoint of SCG Packaging as well as any other possible impacts and business opportunities.

04 Prioritize the issues in the overall picture.

- Create a materiality matrix from the viewpoint of both stakeholders and the company.
- Hold a meeting with all relevant departments to hear their opinions and validate the materiality matrix.
- Present the materiality matrix to SCG Packaging's Sustainable Development Committee.

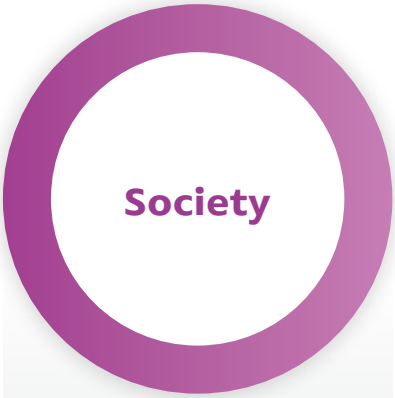


In the 2017 analysis, six Materiality issues were identified, namely Safety, Product Stewardship, Energy Management, Water Management, Customer Engagement, and Community Engagement. SCG Packaging has planned to reassess Materiality issues in 2020.

Sustainable Development Approaches

Create value not only for profitability, but for mutual benefits for all stakeholders, and enhance the organization's capabilities to keep pace with the ever-shifting circumstances.

Demonstrate commitment to the conservation of the environment and natural resources, mindful consumption of resources, and the sustainable preservation of ecological balance.



Be committed to ethical business conduct, social responsibility, and life quality improvement in communities where SCGP operates.

Dimension	Materiality Issues	Risks for SCG Packaging	Opportunities for SCG Packaging
Economy	Product Stewardship	• Due to greater sustainability awareness, consumers shifted toward sustainable consumption choice, cleaner production and more eco-friendly materials.	• To develop packaging products that are safe, easy to use, durable, recyclable, and eco-friendly and develop the organization capability to support businesses as a leader in the packaging industry with creativity and innovation for continuous improvement.
	Customer Engagement	• Popularity, preferences, and consumer behavior change constantly due to innovation and digital disruption. Consumer needs are changing rapidly and growing more diverse and individualized.	• Strive towards integrated packaging solutions provider to keep pace with changes in consumers' needs, technology, regulations, and trends as well as continuously collaborate with customers to deliver relevant solutions.
	Sustainable Value Creation for Suppliers	• The operation of certain suppliers in the supply chain, such as manufacturers, service providers, and distributors, may pose risks that result in disruptions to the operation of SCG Packaging.	• Select potential suppliers based on the supplier code of conduct as well as foster collaboration to enhance and elevate their capabilities for mutual sustainable growth.

Dimension	Materiality Issues	Risks for SCG Packaging	Opportunities for SCG Packaging
Environment	Energy Management	• Limited availability of natural resources and the increasing severity of the impacts of fossil fuel consumption on climate change.	• Research and develop alternative energy technology by using Circular Economy principles as key strategies, and continuously enhance energy efficiency.
	Water Management	• Climate change has led to a lack of rain during rainy seasons and in upstream watersheds, resulting in lower water levels in reservoirs and risks of water stress in factories.	• Enhance capabilities for integrated water management through collaborations with government and industrial sectors to apply international equipment to the assessment of the water situation, develop water reservoirs in factories, improve water efficiency, and and effectively treat wastewater for water recovery.
	Waste Management	• The depletion of natural resources brought about by industrial expansion and pollution from improper waste management have adverse impacts on the environment and communities.	• Research and develop innovations that enable raw material and waste recovery and add value to waste; implement industrial waste management in line with the 3R principle and Circular Economy principles, and decrease non-beneficial waste incineration.
Society	Community Engagement	• Domestic and overseas business operations can impact neighboring communities, while expectations for socially- and environmentally-conscious business conduct from stakeholders and society have heightened.	• Develop model communities characterized by sustainability, self-reliance, and better quality of life by fostering engagement with all stakeholders and leveraging the knowledge and expertise of SCG Packaging as well as other related entities.
	Safety	• Accidents among employees and contractors still have not shown a downward trend as targeted. The number of fatalities amongs contractors still exceeds the target. Safety management in overseas businesses are to be overseen to ensure conformity with SCG Packaging standards.	• Effect change and put it into practice actively and continuously, as well as develop digital technology as monitoring tools to enhance safety standards.
	Human Rights	• Human rights violations occurring in SCG Packaging's direct business activities, the business value chain, as well as in joint ventures where SCG Packaging has no authority in management, have impacts on SCG Packaging's business operations.	• Announce Human Rights policy to demonstrate SCG Packaging's commitment to becoming a role model for human rights by directly and indirectly advocating and promoting human rights protection in business conduct among those involved in its value chain.
	Employee Caring and Development	• Dynamic changes and intense business competition as well as varied needs of customers result in employees lacking proper knowledge and skills to cope with such changes.	• Redesign courses and learning formats to equip the employees with knowledge and skills that enable them to promptly adapt to both current and future circumstances.

Sustainable Development in Action in 2019

Economy

Product Stewardship

97%

recovered paper used in packaging paper production

- **Producing Packaging Paper from Recovered Paper (RCP):** Used corrugated containers and recycled paper are collected, compacted into bales, and sent to paper factories. RCP accounts for 97% of the pulp used in manufacturing packaging paper.
- **Green Cartons:** The production uses 25 grams less material per square meter while maintaining the same level of strength and quality. The lighter weight helps reduce transport fuel consumption and logistics costs.
- **Flexible Packaging:** is made from multi-layer monomaterial films and is readily recyclable because it is made from a single material.
- **Digital Printing:** Digital printing obviates the plate preparation step, shortens production time, removes minimum order constraints, and minimizes waste from production.
- **Microflute:** Microflute for small-sized packaging offers a smooth surface that caters to high quality printing and offers great strength to satisfy the demand of industries for various packaging solutions.

Customer Engagement

84%

customer satisfaction score

- **Collaborating with modern trade retailers to create closed-loop systems:** The company offers a service where it takes used paper and packaging from modern trade outlets for recycling and turns it into paper bags.
- **Design service to support marketing:** The company collaborated with Big C Ratchaprasong to design and develop standard boxes bearing the logo of the department store to cater to foreign tourists as well as the "Made in Thailand" corner showcasing products of Thailand, featuring characters from Ramayana made from recycled paper.
- **Promoting packaging usage according to Circular Economy principles:** To promote CE principle, the company collaborated with S&P to design luxury packaging for mooncakes from recycled material.

Sustainable Value Creation for Suppliers

100%

contractors with procurement spending of over 1 million baht assessed on Environmental, Social, and Governance (ESG) risks

- **Financing Program - Blockchain:** Blockchain has been introduced to improve efficiency in procurement, billing, and payment and provide contractors with a cost-saving and efficient alternative for financial management.
- **CEO Exclusive Forum 2019:** The seminar aimed to support customer businesses and update industrial outlooks and trends to handle change and create opportunities for mutual, sustainable growth.
- **The Challenge 2019:** The packaging design contest encouraged university students to present their creativity and ultimately develop their ideas into consumer packaging.

Environment

Energy Management

Targets

Reduce greenhouse gas emissions by

28%

in 2030
compared with business as usual (BAU)
at the base year of 2007

Reduce energy consumption by

13%

in 2025 compared with business as usual (BAU)
at the base year of 2007

- **Thailand Energy Awards 2019:** SCG Paper Energy Co., Ltd., Siam Kraft Industry Co., Ltd., and Thai Paper Co., Ltd. launched the Biogas project from Wastewater Treatment System in the Wang Sala plant to substitute for approximately 3.3 million liters of oil and coal fuels and energy for lime kiln of Thai Paper Co., Ltd. per year and substitute for approximately 4,500 tons of coal for Siam Kraft Industry Co., Ltd. per year.
- **Carbon credits from T-VER:** The solar power project of SCG Paper Energy Co., Ltd. received a carbon credit certificate for 7,700 tons of carbon dioxide offset per year, worth 700,000 baht in total, for a period of seven years from the Thailand Voluntary Emission Reduction Program (T-VER) under Thailand Greenhouse Gas Management Organization (Public Organization)
- **Internal Carbon Pricing (ICP):** The Internal Carbon Pricing scheme worth 18 USD per ton carbon dioxide was adopted as a criterion for decision making of greenhouse gas emission reduction projects.

Water Management

Target

Reduce water withdrawal by

35%

in 2025 compared with business as usual (BAU)
at the base year of 2014

- **WRI AQUEDUCT:** Water situations are analyzed using internationally recognized water risk assessment tools of the Water Resources Institute along with data from government agencies to create collaborative water management with all sectors.
- **Recycling treated wastewater:** The wastewater treatment systems have been improved to increase efficiency, enhance water quality, and boost water recovery, resulting in a decrease in water withdrawal by 50,000 cubic meters per year.
- **Developing the capabilities of water management personnel:** The company has placed emphasis on action learning according to the principle of Kaizen, organized workshops to share examples of effective water conservation projects, and developed indicators to track progress.

Waste Management

Target

Reduce waste disposed by

92%

in 2015
compared with
the base year of 2014

- **Thermal Recycling Plant:** Through the conversion of waste from paper production into fuel, SCG Paper Energy Co., Ltd. generates 73 GWh/year and reduces 100,000 tons of waste per year.
- **Reducing lime mud and developing a disinfectant from lime kiln dust:** Lime kilns have been built to convert lime mud, which is waste from pulp production, into lime (CaO), so that it can be added back into digesters, thus reducing the need for quicklime from natural mines. Lime kiln dust has also been developed into a highly effective disinfectant for use in cattle farms.

Society

Community Engagement

86%

community satisfaction

- **Occupational promotion for local communities:** The company promoted paper-band basket weaving as a viable career option as well as a way to add value to paper bands, which scrap materials from paper production, and support local economies sustainably.
- **Water management for agriculture:** The company allocates a portion of its treated wastewater to communities to reduce their farming costs and increase their revenue and offers support during water shortages. The project has delivered over 5.3 cubic meters of treated wastewater to agricultural areas in Ratchaburi, Kanchanaburi, and Prachinburi.
- **Banpong Circular Economy Community Project:** The company provided knowledge and equipment for waste management to Ban Rang Plub, which was a role model of Circular Economy community and the winner of the Zero Waste Community Competition 2019, organized by the Department of Environmental Quality Promotion, as well as extended waste management knowledge to other communities in Ban Pong District.

Safety

2 cases of fatality accident (employees and contractors) in 2019

0.605 person /**1,000,000** man-hours lost time injury frequency rate for employees and contractors in 2019

75%

domestic plants certified with SPAP Level 4 and above

- **SAFEsave:** SCG Packaging has developed security management systems for individuals and assets using digital technology and A.I., including the identification of individuals and equipment with QR codes upon entering or exiting factories and CCTV-enabled notifications for trespassing into restricted areas.
- **Goods Transportation Safety:** The company has elevated single transportation safety by formulating organization-wide safety standards and applying them to transportation contractors.
- **Care for Self:** The company has promoted safety culture in the organization, which begins with caring for one's own wellbeing and keeping oneself safe at work, with the executives serving as role models.

Human Rights

0

case of human rights violation

- **Commitment to human rights protection:** The company strictly complies with all relevant commitments, laws, and international standards in engaging with stakeholders and employees, such as Disney's labor standards, corporate governance policies, etc.
- **SEDEX:** SCG Packaging join hands with the Sedex Members Ethical Trade Audit or SEDEX to implement SEDEX standards in treating employees and contractors in the company and business partners.
- **Gender equality:** The company provides equal opportunities for employment and career advancement based on competencies at all levels without gender discrimination.

Employee Caring and Development

74%

employee engagement

Target

80%

by 2022

- **Developing future executives:** The company has connected its key talent management and development systems to the succession plan to develop key talents into leaders who can serve as role models and are equipped with skills and expertise in business and human resources management in the future.
- **Reskill & Upskill:** The company equips its employees for changes by offering courses, such as Digital Literacy, Business Model Canvas, and Design Thinking, and by shifting from training towards action learning and project-based learning.

Our Sustainability

- Circular Economy
- Climate Resilience and Energy Management
- Water Management
- Waste Management
- Safety

Circular Economy

The ongoing global crisis has given rise to a multitude of problems ranging from environmental pollution, economic regression, quality of life, all of which directly impacting business sectors. SCG Packaging is thus committed to sustainability in its business conduct by adhering to the principle of Circular Economy. Circular Economy has implications far beyond recycling of raw materials for production, but it offers a holistic perspective to managing and facilitating the practice of circulating resource and energy within the system for maximum use and value, starting from planning and selection of resources, production, consumption, waste management, to reuse instead of disposal upon end of consumption. SCG Packaging is firmly committed to pioneering Circular Economy business practices in the region, and it has joined as a member of an international network CEFLEX (A Circular Economy for Flexible Packaging) to collaborate in sustainability efforts through delivery of Circular Economy products, services and solutions.

Target

2020

50%

revenue from recycled or reused polymer packaging compared to total revenue from polymer packaging category

2025

100%

revenue from recycled or reused polymer packaging compared to total revenue from polymer packaging category

Strategy

1. Promote use of bio or substitute materials which are recyclable.
2. Research and develop innovations extending the lifespan of products and constituents.
3. Utilize sharing platform to foster maximization of resource use.
4. Collect and manage waste for reuse.
5. Develop Product as a Service as a new business.

Green Packaging from Recyclable Materials

SCG Packaging has invested in research and development of green and circular food packaging innovations, from materials that are bio-degradable and/or recyclable. A line of diverse products has been generated as a result on the basis of “make-able, sell-able and practical,” and consumer-centered through the production process which is hygienic, safe and meeting standards.

• **“Fest” line of food safe packaging made from natural pulp** from eucalyptus plantation grown in SCG Packaging-supported agroforestry project to boost farmers’ income, with attention to every step of the way starting from development of plant varieties to suit the growing areas, nurturing and buying back the harvest to be used as natural pulp for forming of durable, practical recyclable packages. **Fest Chill** has coating innovation

Fest

FybroZeal

aimed at increased strength, and utilization at both ends of heating and refrigerating while maintaining freshness. **Fest Bio** has white and smooth surface, hygienic and safe packaging for either hot food without leakage or refrigerated food. It is also biodegradable within 60 days.

• **FybroZeal** is paper packaging from natural pulp with application of coating technology. It is environmental friendly, offering high-quality print finish without the need for plastic film. Still the packaging retains the strength and durability, ability to protect content quality and light weight. Most importantly, it is 100% recyclable and biodegradable.

• **Recyclable Polymer Packaging** includes Thermoformed Barrier Food Packaging, High-Barrier Rigid Food Packaging which has the property of controlling seepage of water and oxygen which helps make food lasting longer, equivalent to metal or glass packaging but lighter in weight. Multi-layer mono-material packaging can protect goods, and it is impact-resistant, recyclable as plastic resin and other materials, which help in circulation of raw material substitution into the system.

In 2019

recyclable polymer accounts for

47%

share in the total revenue from sale in Performance and Polymer Packaging Business (PPP Business)

Product Life-Extension

Rapid urbanization and population growth result in higher rates of consumption. The rise in volume of general waste aside, high volumes of food waste were generated from manufacturing, retailing and household sectors – with upward trajectory in sight. Recognizing such a trend, SCG Packaging applies Circular Economy principle in innovating packaging that extends product shelflife of fresh produce in line with "From farm to table" concept, targeting both domestic consumption and export.

• **OptiBreath® for fruit and vegetable life-extension** is flexible packaging characterized by application of Modified Atmosphere Packaging (MAP), from the stage of material selection and manufacturing of film suitable for packaging of various types of fruits and vegetables with a view to keeping them fresh most efficiently. In addition, the plastic is recyclable for reuse as raw materials. Examples of OptiBreath® use for product life extension include young aromatic coconuts.

Recyclable Polymer Packaging

OptiBreath

Video

Sharing Platform

Efficient resource allocation is one of key drivers for a Circular Economy. SCG Packaging therefore uses digital technology to operate a sharing platform which generates solutions enabling access to product information, service, as well as solutions to be shared or co-owned. The ultimate aim is to circulate and optimize existing resources.

• **Paper X Digital Platform** operates purchase of paper to feed back into recycling processes. It facilitates the aggregation and sharing of data to manage collection of paper or packaging from end users. Successful waste aggregation the circular way requires multi-sectoral collaboration, which SCG Packaging has therefore fostered with a variety of entities such as Doozy Pack of Tesco Lotus to promote and multiply collection points of used packaging from customers, with Paper X application helping set up collection appointment. The company also collaborates with several Modern Trade operators in collecting used paper packages from their distribution centers to be returned directly to the factory to turn them into new packaging. Furthermore, efficiency of collection of used paper and plastic packaging for reuse is enhanced through Paper X application, tapping into a network of scrap paper compression plants.

Paper X Digital Platform facilitates recycling of

68,000

tons of paper per year

Resource Recovery

"Make-Use-Return" underpins a Circular Economy. SCG Packaging therefore prioritizes reuse of resources as material in manufacturing new products to be used. As such, the circle is complete systematically, and so resources are maximized.

• **Paper bag from recycled paper**
SCG Packaging collaborates with Tesco Lotus in environmental conservation the circular way. Under this collaboration, used paper and carton boxes are collected from Tesco Lotus's distribution centers nationwide, and returned directly to SCG Packaging plants to feed into recycled paper production, and formation of performance paper bags as options for customers.

Product as a Service

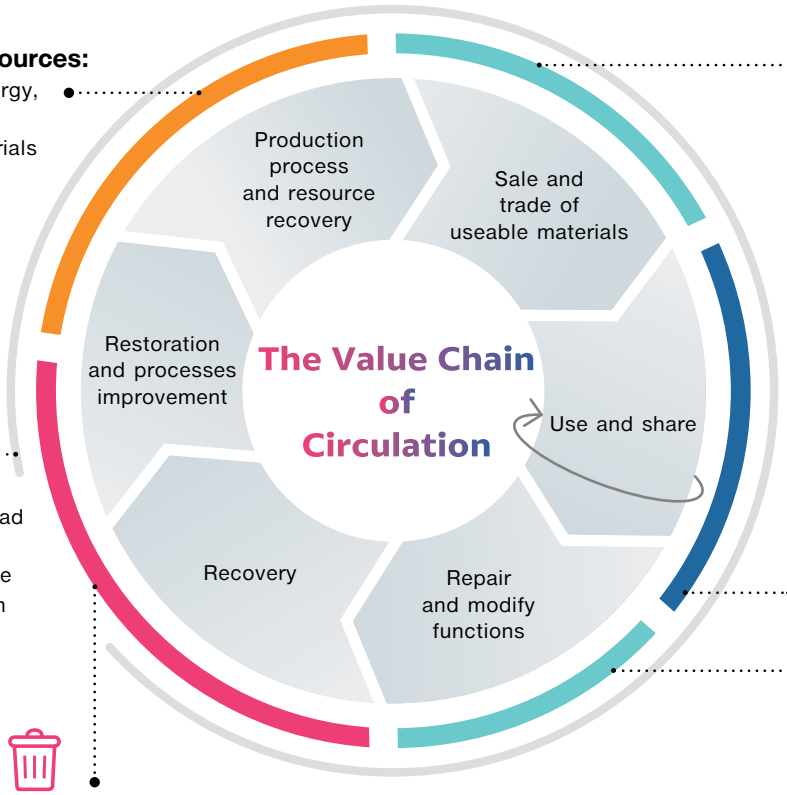
Advancing technology and innovation have transformed the economy and society, prompting businesses to adapt to keep up with changing needs and behaviors of consumers. For SCG Packaging, Product as a Service is one of the key drivers in our Circular Economy endeavor.

- **Marketing Event Solutions** offers integrated solutions of producing media for exhibition, event, product display booth and public relations, starting from design, to production, installation and collect used products for recycling purposes.

Renewable Resources:
Use alternative energy, bio-materials, or recyclable materials to substitute single-use, or toxic materials

Product Life-Extension:
Extend lifespan of products and components by developing packaging that maintains product freshness for longer lifespan and shelf life

Product as a Service:
Offer services instead of selling products in order to maximize resources utilization and recycling in production



Sharing Platform:
Increase utilization rate of products, services or solutions through co-using, or co-ownership

Resource Recovery:
recover raw material, resources and energy from products, by-products or waste from production

The Circular Way of Product Cycle of SCG Packaging

Product

- **Green Carton**

Decrease energy and paper consumption in the process of manufacturing corrugated containers at least 25 grams per square meter yet maintaining and strengthening the stacking and protection.

Product designed for reuse by Inspired Solutions Studio

Product

Production of Corrugated Containers

Production of Corrugated Containers

R&D of innovation to create green products

- **Reduce resource use**
- **Reduce food waste**
- **Increase recyclability**

Greenhouse Gases Emission Reduction

- **Increase the share of alternative energy use and waste recycling**
  - Use all types of solar energy
  - Use biogas from treated waste water as renewable energy
  - Use biomass or waste as fuel for power generation in the production process

Improve the management system for recycling of treated water

- **Install highly efficient treatment system to improve water quality**
- **Reuse treated water in the system**

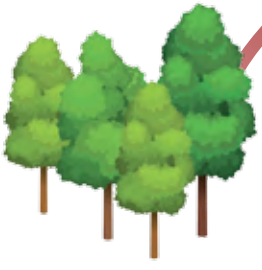
- **From Waste to Product** through use of fly ash to make Eco Brick.

Paper Production

Paper Production

- **Agroforestry management according to international certification standards of the Forest Stewardship Council (FSC).** To this end, SCG Packaging fosters collaboration with the Department of Forestry, local administrative organization, and community to promote agroforestry as income source for farmers, while keeping deforestation in check. We do so through research and develop varieties of eucalyptus trees that are diverse and suitable to plantation conditions, in order to yield materials for pulp that is environment-friendly and socially accountable.

FSC



- **Efficient management of resource use** by increasing the share of recycled material use to

97%

in paper packaging production.

• **Fest**
food safe packaging from natural pulp, environment-friendly, recyclable and biodegradable.

• **Recyclable Bag**
from recycled paper, which is recyclable as option packaging waste reduction.

• **Microflute**
for small-sized packaging. It offers a smooth surface to cater to high quality printing and great strength to satisfy the demand of industries for various packaging solutions.

• **OptiBreath**
Flexible Packaging for fruit and vegetable to stay fresh longer, and reducing loss during transportation.

• **Multi-layer Monomaterial**
Flexible Packaging with multiple layers from single material that help shield goods and impact-resistant, and recyclable.

Distribution Center

Shop

• **Foster multi-sectoral collaboration to create a closed-loop system**
Support collection and aggregation of used packaging materials from distribution center, shop, consumers, to be brought back to factory for recycling and production of new packaging. Examples include collaboration with Doozy Pack and Modern Trade operators to turn used paper packaging into either paper bags or recycled packaging.

• **Develop Paper X**, the sharing platform, to facilitate return of used packaging from customers with convenience, speed and efficiency.

Customer

• **Promote sustainable consumption principle**
by offering green products, services and solutions that are safe, and extending product life. Generating less waste by using less resource or using resource that is recyclable and biodegradable.

Recycle Station

• **Establish recycling center**
to collect and buy paper scraps and other used material, to be sorted and managed appropriately as material for production.

Community

• **Collaboration with community to pilot Circular Economy model community**
Provide technical support and tools for community waste management to activate circulation of resource use, for the sake of well being and good environment while contributing to nationwide effort at waste reduction.

Climate Resilience and Energy Management

Global warming and intensifying climate change constitute urgent factors requiring multi-sectoral cooperation in meeting greenhouse gas (GHG) emissions reduction targets according to the Paris Agreement. On its part, SCG Packaging has demonstrated its commitment to the goal of keeping global warming to well below 2 degrees Celsius in this century and striving for 1.5, by setting the target of reducing GHG emissions by 28% by 2030 (compared with the base year of 2007). It also set an interim goal of 20% emissions by 2025 through improvement or replacement of processes and equipment to achieve energy efficiency, alongside increasing the share of renewable energy use to reduce fossil fuel dependence.

Target

Greenhouse Gases Emission

2020

10%

2025

20%

2030

28%

(compared with business as usual at the base year of 2007)

2025

13%

reduction in energy use compared with BAU at the base year of 2007

Strategy

1. Pollution control at the level above legal benchmarks.
2. Improve or modify processes and equipment to achieve energy efficiency.
3. Organize activities to raise awareness on sustainable energy use for employees and suppliers.
4. Adopt Internal Carbon Pricing scheme to support project decisions that can reduce greenhouse gas emissions.

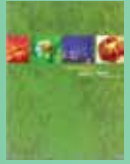
Milestone in Energy Management and Climate Resilience

1991
- SCG announced its Environment and Safety Policy

1992
- The Earth Summit's guideline for environment and development for the world community

1997
- The Kyoto Protocol on international commitment to limit and reduce greenhouse gas emissions

2001
- SCG compiled its first annual sustainability report



2019 Performance

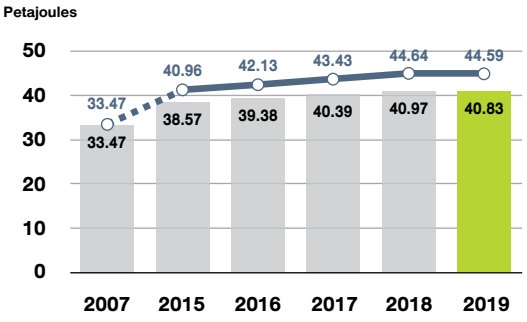
14.4%

GHG emissions reduction compared with BAU at the base year of 2007

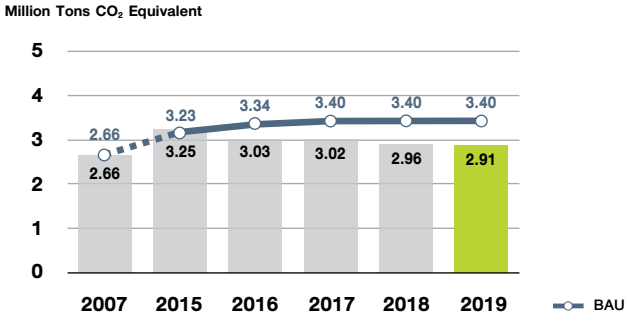
8.4%

energy reduction compared with BAU at the base year of 2007

Energy Consumption



Greenhouse Gas Emissions



2006

- All business units complete their GHG emissions report

2007

- SCG established an Energy Committee to chart energy management policy

2010

- All business units improve energy efficiency and reduce GHG emissions

2013

- Climate Change Committee established
- SCG Packaging used biogas to reduce the use of coal and fuel oil

2014

- Siam Kraft Industry received an award in the creative energy category at Thailand Energy Awards 2014 by the Ministry of Energy

Promote Renewable Energy

SCG Packaging has been active in the use and development of renewable energy – all types of solar energy including solar farm, floating and rooftop installation. It has also implemented biogas production from wastewater treatment and waste-to-energy projects. Apart from reducing dependence on fossil fuel and GHG emissions, these efforts conform with the circular way to reuse or recycle waste.

• **Thailand Energy Awards 2019, for Biogas Production from Wastewater Treatment System at Wang Sala Complex.** In this collaboration, SCG Paper Energy, Siam Kraft Industry and Thai Paper joined together in a project to improve wastewater treatment system of Siam Kraft Industry which was originally aerobic system, by adding anaerobic system for biogas production capability. Fuel use systems of both Thai Paper and Siam Kraft Industry had also undergone improvement so the two companies could use biogas energy.

In 2018 biogas output was used as fuel for white lime kiln of Thai Paper, replacing fuel oil in the amount of 3.3 million liters per year. The biogas also fueled boiler of Siam Kraft Industry, substituting 4,500 tons of coal per year, contributing to reduction of GHG emissions by 17,000 tons of CO_2 per year. Moreover, the anaerobic wastewater management system relieves the burden of the incumbent wastewater treatment system, and saves energy consumption by 5.6 million kilowatt hours per year, as well as reducing volume of waste for disposal by 12,000 tons per year.

As a result of these achievements, the project won an award in the alternative energy, off-grid category at Thailand Energy Awards 2019. The model can be applied at any factory with waste material, or wastewater from any type of production processes, in particular waste or wastewater with organic matter or high COD value which can generate high volume of biogas.

• **Expansion of Biogas from Wastewater Model** Siam Kraft Industry Banpong Complex implemented the successful wastewater treatment model piloted at Wangsala complex. The anaerobic system was added to enable biogas production. Use of biogas can reduce fossil fuel use and at the same time reducing greenhouse gas emissions at the rate of 23,000 tons of CO_2 per year

GHG emission reduction at

23,000

tons of CO_2 per year

- SCG launched its Environment and Energy Policy; started solar energy project and corporation-wide switch to LED light bulbs
- Phoenix Pulp & Paper Pcl. won top prize at Thailand Energy Awards 2016, and also the ASEAN Energy Award 2016, in Off-Grid (Thermal), alternative energy category

2016

2015

- Paris Climate Agreement pledged global warming to well below 2 degrees Celsius.
- SCG Packaging used biomass and waste reject as alternative fuel while reducing coal use
- SCG Packaging used biogas from treated wastewater as fuel substitute while reducing coal use

2017

- SCG Packaging used natural gas to reduce coal use
- Phoenix Pulp & Paper Public Company Limited received an Energy Globe World Award 2017 in Iran, for its refuse-derived fuel project as alternative to fuel oil

• **Solar Energy Project** In 2019, SCG Paper Energy Co., Ltd. implemented the following solar energy projects: 2.5 MW rooftop at Siam Kraft Industry's Wangsala Complex; 2 MW solar farm at Kanchanaburi factory; and 2 MW solar farm along with 3 MW floating system at Prachinburi factory of Thai Cane Paper Public Company Limited. In total, these projects achieve emission reduction of 7,700 tons of CO_2 per year. This project was submitted to join Thailand Voluntary Emission Reduction Program (T-VER) of Thailand Greenhouse Gas Management Organization (Public Organization). The Project passed T-VER criteria and was carbon credit-certified at 7,700 tons of CO_2 per year, equivalent to 700,000 baht per year over a period of seven years.

Reduction of GHG emissions by

7,700

tons of CO_2 per year

GHG emissions reduction of

104,381

tons of CO_2 per year

Energy Conservation Commitment

SCG Packaging has continuously implemented improvement of production processes and equipment from 2010. Throughout the period, we conducted self-monitoring of energy use, research and development into innovations that improve efficiency in every step of processes and equipment.

In 2019, these consistent efforts enabled SCG Packaging to achieve greater efficiency and reduce energy use at the rate of 325,119 gigajoules per year, while reducing GHG emissions at 104,381 tons of CO_2 per year.

- SCG Paper Energy Co., Ltd. established to focus on paper-production waste-to-energy in line with Circular Economy
- Emission reduction target set at 28% by 2030 against 2007 base year

2018

2019

- Interim emission reduction target set at 20% by 2025 against 2007 base year
- SCG Paper Energy Co., Ltd. received an outstanding award from Thailand Energy Awards 2019, alternative energy category from "Integrated Alternative Fuel of Biogas from Wastewater" project of Siam Kraft Industry's Wangsala complex

Strengthening the Management for Climate Change Adaptation Based on International Standard

Adoption of Internal Carbon Pricing (ICP)

In 2019 SCG Packaging started an Internal Carbon Pricing scheme by quantifying greenhouse gas emissions value at US$18 per ton CO_2, and applying it as one of the factors determining investment decision in projects that contribute to emissions reduction. This also forms parts of preparation for emerging regulatory risks.

Water Management

Key challenges to water management are rooted in climate change which causes unseasonal rainfalls, and deficit of rainfalls in watershed areas resulting in depletion of water stock in reservoir. Adding to these is the trend of rising demand for water in the future. All these highlight the risk of inadequate water supply for the factory. Against such backdrops, SCG Packaging enhances its capacity for integrated water management in collaboration with the public and industrial sectors in implementing measures including development of water reservoirs within the factory area, increase efficiency of water use, and increase the use of treated water in line with the 3R principle.

Risk Mitigation through Integrated Water Resource Management

SCG Packaging participated in the meeting of a sub-committee to monitor and analyze water trend. The sub-committee brings together representatives of the Royal Irrigation Department and other relevant agencies including Office of the National Water Resources; Hydro-Informatics Institute (Public Organization), Electricity Generating Authority of Thailand, RID Region 1-17 which covers different regions of Thailand. The sub-committee meets bi-monthly to analyze water data from all over the country. In addition, Business Continuity Management (BCM) closely monitors water outlooks in areas where factories are located in order to jointly define measures to prevent water shortage.

In 2019, droughts resulted in below-average rainfalls in certain parts of the country. At risk are factories located in the northeastern Khon Kaen province. SCG Packaging has collected various data sets to assess the situation using internationally-recognized tools, and put in place a crisis management plan. We collaborate fully with stakeholders from the public, private and civil society sectors in integrated water resource management.

WRI AQUEDUCT is a risk management tool of Water Resources Institute (WRI).

Target

Reduce water withdrawal by

35%

in 2025 compared with business as usual (BAU) at the base year of 2014

Preparing water reservoir with the capacity to retain

200,000

cubic meters of fresh water

Reduction of water withdrawal by SCG Packaging in the amount of

5.2

million cubic meters per year

Strategy

1. Living sustainably with community.
2. Reducing water-related risks.
3. Adopting the 3R principle to increase the efficiency of production processes.
4. Capability building of water management personnel.

In 2019, SCG Packaging started using the tool to jointly conduct water situation analysis with public agencies. The outcome provides us with a holistic, systematic picture on the health of water basins from upstream to downstream plus tributaries that link several areas spanning multiple provinces. Such perspective allows for accurate and complete coverage of analysis in areas where SCG operates.

• **Water crisis management plan of Phoenix Pulp & Paper Public Company Limited**

Phoenix Pulp & Paper Public Company Limited is located in Khon Kaen province which is vulnerable to drought. The company therefore has developed a plan to cope with water shortage with key measures including awareness-raising campaign on water use within the factory and among surrounding communities; reducing water use in production process in line with the 3R principle; making provision for reserve water, and planning risk management if it is required to progressive reduce water use in production processes proportionately with the drought. With such preparation, the company was able to survive the 2019 drought crisis without impact on businesses and without water-related dispute with other stakeholders in the area.

Reduction of Water Use in Production Processes

In 2019, SCG Packaging implemented a total of 49 projects aimed at boosting the efficiency across production processes and products. These include improving the efficiency of water filtering system to reuse water, improvement of showering system efficiency; of the cooling system. These concerted efforts result in reduction of water use by 5.2 million cubic meters per year, with an investment of 562 million baht, and saving water cost at an average of 10.6 million baht per year.

Recycling of Treated Wastewater

SCG Packaging has continuously undertaken efforts to recycle treated wastewater, through improvement of wastewater treatment system using high efficiency and latest technologies with a view to improving the quality of treated water and its reusability. Treated wastewater has been used for an increasing range of purposes including cleansing, machine cleaning, floor cleaning, plant watering, among others.

Efforts at improvement continued in 2019, resulting in an additional reduction of water use by 50,000 cubic meters per year, without additional investment cost.

Capability Building of Water Management Personnel

SCG Packaging supports capability building of employees involved in water management, by enabling them to learn from practical experience. These include encouraging staff to propose initiatives on water use reduction according to Kaizen approach to efficiency, which can be replicated in other units within the enterprise, organizing workshops per product groups to share good practices in water use reduction and jointly develop indicators for performance monitoring such as for the Packaging Paper Group; Graphic Paper Group; Pulp Production Group. Their co-created work would then form a collective agreement to be implemented and replicated in various factories with progress constantly monitories. As a result, efforts to reduce water use are sustained and effective.

2019 Performance

Reduction of water withdrawal by

10.3%

compared with business as usual (BAU) at the base year of 2014

Water recycled is

12%

1,012

check dams built

5.3

million cubic meters of treated wastewater for

3,338

rais of farmland

Increase the rate of water reduction by

50,000

cubic meters per year

Ecosystem Rehabilitation and Supporting Community/Agriculture

In parallel with reducing water withdrawal for equitable distribution of water supply among stakeholders, SCG Packaging prioritizes rehabilitation of water-related ecosystems to ensure sustainability of water supply. SCG Packaging also supports water supply to community and agricultural areas.

- Organize ecosystem rehabilitation activity, by building a total of 1,012 check dams jointly among employees, suppliers, communities, students, public agencies in several provinces including Kanchanaburi and Ratchaburi.
- Arrange supply of 5.3 million cubic meters of treated wastewater with quality appropriate for farm use as well as with plant nutrients to 3,338 rais of farmland.

Waste Management

Rapid growth of industrial sector has given rise to needs to procure finite natural resources for production, risking shortage, and pollution resulting from inappropriate disposal impacts the environment and community. SCG Packaging therefore strives to reduce waste generation and embeds this thinking into the entire chain starting from product design, material choice, production process efficiency, reduction of waste bound for external waste management. At the same time, it invests in R&D for innovations enabling reuse and recycle of material and value-adding to waste, while managing industrial waste in conformity with the 3R and Circular Economy principles.

Thermal Recycling Plant

SCG Packaging pursues effective waste management, by turning waste to alternative energy in line with Circular Economy practice.

• **SCG Paper Energy Co., Ltd.** turns waste amounting to nearly 300 tons per day from paper production process of

Target

Annually

0

waste to landfill

2025

Reduce the volume of waste to be disposed per ton of production by

92%

compared with the base year of 2014

Reduce the volume for disposal to

72,000

tons

Reduce use of CaO from natural mine by

50,000

tons

73

gigawatt hours per year of power generated;

100,000

tons of waste disposed per year

Strategy

1. Reduce the volume of waste at source.
2. Manage industrial waste according to 3R and Circular Economy principles, for hazardous and non-hazardous waste, internally at best effort within SCG and SCG Packaging.
3. Research and develop innovations to reuse material and waste, and value-adding to waste.
4. Industrial waste management without sending to landfill.
5. Reduce waste disposal by incineration.

Siam Kraft Industry Co., Ltd. and Thai Cane Paper Public Company Limited. With the help of topline technology from Europe, this particular amount of waste is turned into fuel for power generation. Pollution emissions in the process comply with EIA requirements. Waste from power plant such as fly ash can be used as substitute material in cement factory and brick factory.

Waste to Product

Besides waste to energy, SCG Packaging has conducted R&D into how to add value to waste, and generating innovations to the effect which boosts revenue and brings benefit to the organization, community and other agencies.

• **From lime mud to disinfectant**

Pulp production generates a type of waste that is lignin insolvent. Chemical recovery is an approach to obtain the chemical back for use in the pulp boiler. Yet the approach generates huge volume of waste in the form of unburnt lime, lime mud, and dreg.

In 2011, Phoenix Pulp & Paper Public Company Limited invested in building two lime kilns, and one more in 2014, totaling three kilns. In 2012, Thai Paper Co., Ltd. built one lime kiln at its Wang Sala factory. The main function of the kilns is to turn mud into lime or CaO so that it can be reused in the boiler. In so doing, waste volume to be disposed is reduced along with less use of CaO from natural mine. In 2019, these efforts reduced lime waste due for disposal to only 72,000 tons, while reducing the volume of CaO required from natural mine by about 50,000 tons.

In addition, Thai Paper Co., Ltd. sold about 4,000 tons of lime mud as raw material for fertilizer plants around the factory, as lime mud has alkali property which can neutralize acidic soil.

The process of incinerating lime mud released lime dusts collected at the dust trap of the kiln and these have to be sent for proper

disposal. Phoenix Pulp & Paper Public Company Limited collaborated with SCG Corporate Technology Office and leading academia to explore ways to capitalize on white lime dust. Their findings show that the lime dust can be further developed into disinfectant to be used by livestock farms to disinfect pathogens causing dysentery and respiratory disease at the rate of 99.9%. And with light weight and compact size the particles distribute well to provide complete coverage of the work area, therefore its use rate is 20% less than other white-lime-based disinfectants available in the market. Through this project, the volume of white lime dust to be disposed of is reduced by 200 tons in 2019, generating 40,000 baht in revenue and saving the disposal bill by 270,000 baht

- **Development of soil nutrients**

Siam Forestry Co., Ltd. together with the Product and Technology Development Center of SCG Packaging and Department of Geology, Faculty of Agriculture, Kasetsart University Kampangsaen Campus conducted R&D into production of soil nutrients from fermentation of black and white lime mud, pulp sediments and microorganisms which are refuse generated in the pulp and paper making processes from cellulose fibers of eucalyptus trees. The formula for soil nutrients

2019 Performance

Reduce the volume of waste to be disposed per ton of production by

96%

compared with the base year of 2014

developed contains organic substance and rich nutrients for plants, along with microbes that retain nitrogen from the air to boost nutrients for soil. Furthermore, the nutrients have protective properties that can substitute the use of chemical pesticide and insecticide which harm both users and the environment.

- **PROBLOCK - Eco Brick** is the innovation by SCG Packaging, SCG Cement-Building Materials and SCG Corporate Technology Office to manage fly ash arisen from combusting of solid fuel including coal and biomass in industrial plants. The innovation centers on turning fly ash into quality construction materials such as brick, impact brick, finishing brick, with a view to reducing waste-disposal-generated pollution and to adding value to waste.

About

5,400

tons of fly ash disposed

In 2019, SCG Packaging disposed of 5,400 tons of fly ash, by using it to produce 3,248,600 pieces of Eco Brick. A batch of 56,900 pieces was donated to temples and communities around the factory: Wat Tatakraw, Wat Nongsua, Ban Huaykwang, the New Theory of Sufficiency Economy Learning Center, Wat Nongplub School in Thamaka District, Kanchanaburi, and the volunteer camp project of Chulalongkorn University Dormitory at Wat Bankluay School.

Safety

SCG Packaging's operations involve production, servicing, transportation, with employees and contractors playing instrumental role. We pay attention and strive to do our best to minimize an accident. Our highest goal is zero lost time accident by 2022, and zero fatality accident among employees and contractors every year. Although we are not there yet, our efforts indicate that we are progressing towards the ultimate goal.

Workplace Safety

SCG Packaging fully recognizes that the company's activities which carry high risks of an accident arise from lack of understanding and awareness on safe work practices, as well as supervision gaps. We therefore prioritize the development and enhancement the safe operation standards for employees and supervisors, alongside establishing a safety culture which will ensure safety in a sustainable manner.

• **Safety Training Center (STC) & Safety Dojo** The Center is established by Siam Kraft Industry, Wangsala Plant. It has the dual function as a training center as well as a center to simulate accidents for employees and contractors to learn directly from consequences of accidents. Learning through simulation and having direct experience in simulated helped to enhance skills and knowledge to work safely and free from injury.

• **SCG Safety Framework and SPAP** SCG Packaging implements SCG Safety Framework along with tools of Safety Performance Assessment Program (SPAP). We found the correlation between SPAP result and accident rate: companies in Level 4 of SPAP (Succeeding) and Level 5 (Leading) have lower accident rates in the previous three consecutive years than their peers in Level 3 (Qualifying). Therefore the efforts and determination to enhance safety standards of all companies both domestic and overseas

Target

Annually

0

fatality accident among employees and contractors

2022

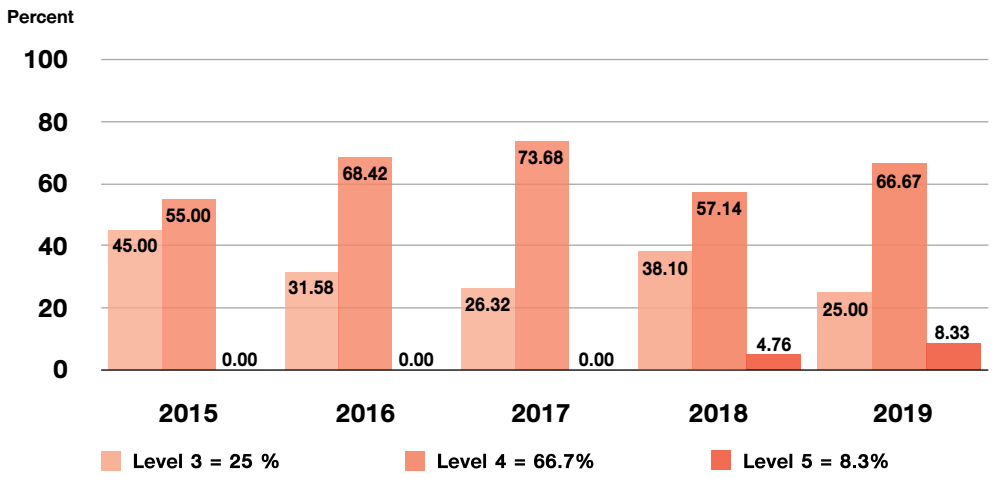
0

lost time accident among employees and contractors

Strategy

1. Instill awareness and change behavior for safety culture.
2. Encourage managers and supervisors to be safety role model who fully support and caring to employees and contractors.
3. There is safety management system to enhance the safety standards for domestic plants and leverage to overseas plants as well.
4. Develop and use digital technology as fast and efficient tool to minimize the risks for an accident.

Number of Plants in Thailand According to SPAP



are provided assurance that we are heading in the right direction to reduce accident rate towards achieving the highest goal.

In 2019, SCG Packaging has six factories certified SPAP Level 3; sixteen factories in Level 4 and two in Level 5.

• **Promotion of Life Saving Rules** SCG Packaging announced enforcement of 11 Life Saving Rules to reinforce the conscience and to change behavior for embedding safety culture among employees and contractors. These Life Saving Rules are agreement among all companies in domestic and overseas. Neglect of Life Saving Rules is subject to strict disciplinary measures as stipulated. Rigorous inspection is undertaken.

2019 Performance

0

fatality accident among employees

0

fatality accident among contractors in the workplace

0

fatality accident among direct transportation contractors

2

fatality accident cases among other transportation contractors

• **Enhancing Safety Leadership**
SCG Packaging believed the key for safety workplace is the leadership. Managers and supervisors must demonstrate leadership and be the safety role model.

SCG Packaging adheres to SCG's standards and guidelines such as "Leader Standard Work" which covers aspects of Coaching, Leadership Line Walk, monitoring of safety-related progress through Visual Board (Visualization) and Safety Observation Program which enables supervisors to constantly observe, advise, coaching, change behavior when any unsafe action is found so that workers learnt first-hand, remind and develop safety conscience as a result. We organize activities to encourage employees to demonstrate their safety expression through activities such as My Safety Commitment, for employees to submit and remind a safety motto.

• **SAFEsave** To enhance the safety standards in domestic and oversea, SCG Packaging has developed a digital technology titled "SAFEsave" with the capability in Machine Learning, Real-Time

"We don't build a supervisor-supervisees type of organization. Rather, we are building an organization of brothers and sisters."

Niwat Poosisalab,
Manufacturing Director, Thai Containers Group Co., Ltd., Navanakorn Plant

"Thai Containers Group Co., Ltd., Navanakorn Plant was founded in 1971, as SCG's first paper box factory. We set the goal of zero accident, and to make safety part of the organizational culture. All employees are on the lookout for everyone – themselves and their colleagues, without the supervisor hovering around to enforce.

"The executives have to always communicate safety. They must be alert and serious. Employees working for less than six months are most vulnerable to risk of accident. We stick a yellow stripe to the hat to signal that they are newcomers. When I walk into the plant, I'd tap his shoulder, starting a chat about safety, to make employees feel that the managers take workplace safety seriously.

"We have 'Morning Talk,' as a starter of the day where participation is mandatory for all employees. The first order of the day is inviting employees to share their Near Miss experience. Initially employees were too shy to come forth and share. But once this has become a routine, those who shared actually felt proud to be sharing about safety with their colleagues. This type of activities reinforced the safety mindset among the employees. I think safety mindset is important, and playing a big part in us being ranked SPAP Level 5 in last year's audit.

"Should I stay quiet in the event of a small accident? If this happens it means our system is not effective yet. We don't use penalty, but we'd rather make them feel that they can share full details without hiding them. Of course, the executives must undergo coaching. We don't build a supervisor-supervisees kind of organization. But we'd rather build an organization of brothers and sisters."

alert and data collection instead of paper form, for prompt risk mitigation.

In progress since 2018, SAFEsave was piloted at the Wang Sala complex, Banpong complex and the engineering division. In 2019, 14 out of the total 15 modules were completed.

Some interesting examples such as People Classification modules evaluate contractors prior to operation by using QR Code to verify whether the contractors have attended mandatory safety trainings as required by law. Restricted Area for Security feature inspects the area using CCTV. When any anomaly is detected, the system will alert and record the footage as evidence.

Transportation Safety and Road Safety

"Zero Road Accident" is the challenge SCG Packaging has been addressing all along, for the safety of drivers of our company and transportation contractors, as well as public fellow road users.

• Goods Transportation Safety

In 2019, all SCG business units met to share and brainstorm on transportation safety, with the aim to develop single Goods Transportation Safety standard applicable across all business units. Chemicals Business was the first to adopt the standard, followed by Cement-Building Materials. SCG Packaging subsequently adapted and adopted it for the company and transportation contractors. We also undertake measures to build the capacity for them to be able to regulate safety on their own.

• Driver Management System

SCG Packaging has measures to regulate safety in transportation covering pre, during and after transportation stages, as well as enhance standards of our drivers which are crucial to safety. Drivers pass training courses at SCG Skills Development School and are regulated by Logistics Command Center of SCG Logistics which deploys staff to provide 24-hour tracking of vehicles all of which have GPS activated. Drivers are alerted at first sign of safety risk such as speeding, parking on road shoulders, or driving for a stretch of 4 hours without break.

S.E.R.T. A Voluntary Mission Reducing Loss and Disaster Response

S.E.R.T. (SCG Packaging Emergency Response Team) is a public disaster emergency response team established to reflect the organization's commitment to protect and save lives and properties of employee, organization, community, society and the country as framed by the United Nations Office for Disaster Risk Reduction (UNDRR). It is also a member of Thailand's national emergency response team under the Department of Disaster Prevention and Mitigation (DDPM), Ministry of Interior, and upholding the operational goal set by the Sendai Framework for Disaster Risk Reduction 2015-2030.

S.E.R.T. received capacity strengthening continuously including: Search And Rescue Team according to USAR standard (Urban Search And Rescue) from DDPM, Emergency Medical Team (EMT) from the National Institute of Emergency Medicine (NIEM). It is supported by the Ministry of Defense to participate in the annual joint civilian-military preparedness training, as well as attending Incident Command System (ICS) training, according to The International Search and Rescue Advisory Group (INSARAG), among others.

In 2019, S.E.R.T. assisted people, communities, temples, schools and public agencies affected by floods in the Northeast of Thailand in recovery efforts, focusing on BUILD-BACK-BETTER (B-B-B). S.E.R.T. remains committed to developing its capacity for the sustainability of the organization, community and country.

Awards We Are Proud of in 2019

Internationally

WorldStar Packaging Awards 2019 from World Packaging Organization (WPO):

Food Packaging

Luxury Packaging

Point of Purchase

Regionally

AsiaStar Packaging Awards 2019 of Asian Packaging Federation (APF):

- Two awards in Point of Purchase
- Two awards in Consumer Packaging
- One award in Eco Packaging

Nationally

ThaiStarPackaging Awards 2019
of Department of Industrial Promotion, Ministry of Industry

- Three awards in Consumer Packaging
- Five awards in Point of Purchase
- Two awards in Eco Packaging

- Thai Cane Paper Public Company Limited, Kanchanaburi Plant and Prachinburi Plant received The Prime Minister's Industry Award 2019, in the category of Social Responsibility, organized by the Ministry of Industry.

- Thai Cane Paper Public Company Limited, Kanchanaburi Plant received The Award Ceremony for Outstanding Establishment Labor Relations and Labor Welfare 2019, organized by the Mistry of Labor.

- Thai Cane Paper Public Company Limited, Kanchanaburi Plant and Prachinburi Plant received CSR-DIW Continuous Award 2019, organized by the Ministry of Industry.

- Siam Kraft Industry Co., Ltd. Wangsala Plant was awarded first runner-up prize in ASEAN Awards in the category of Excellence Coal Management, organized by the Ministry of Energy.

Sustainability Performance in 2019

Green Procurement Purchased

5,114 million baht

Contractors Assessed on Environment, Social and Governance (ESG) Risk

100% of contractors with procurement spending over 1 million baht

Lost Time Injury Frequency Rate (Employee/Contractor)

0.522/0.678 person per 1,000,000 man-hours

Greenhouse Gas Emissions Reduction

489,050 tons CO_2 equivalent | **14.4%** (compared with BAU at the base year of 2007)

Energy Saved

3.76 petajoules | **8.4%** (compared with BAU at the base year of 2007)

Proportion of Alternative Energy

30.6% (compared with total calorific value)

Water Withdrawal Reduction

7.02 million cubic meters | **10.3%** (compared with BAU at the base year of 2014)

"SCG eco value" Products and Services

14 products

R&D Investment

584 million baht

Proportion of Recycled Water

12% (compared with total water withdrawal volume)

Hazardous /Non-Hazardous Waste to Landfill

0/0%

Industrial Waste Sent to Unproductive Incineration

0.10 kilogram per ton production

Environment Expense and Investment

1,080 million baht | **1.2%** of revenue from sales

Sharing Opportunities, Drawing the Future Program

45 projects

Scholarship for Youth

1,383 grants in **56** schools

Supporting Community Goods

5,157,418 baht

Community Career Development Center

27 centers

Supporting Livelihood and Community from Weaving Handicraft Products

1,183,000 baht

Supporting Municipal Waste Management Program

21 communities

1,012 Check Dams

Plantation

24,618 trees

SCG
PACKAGING
Your Unbounded Answers

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