

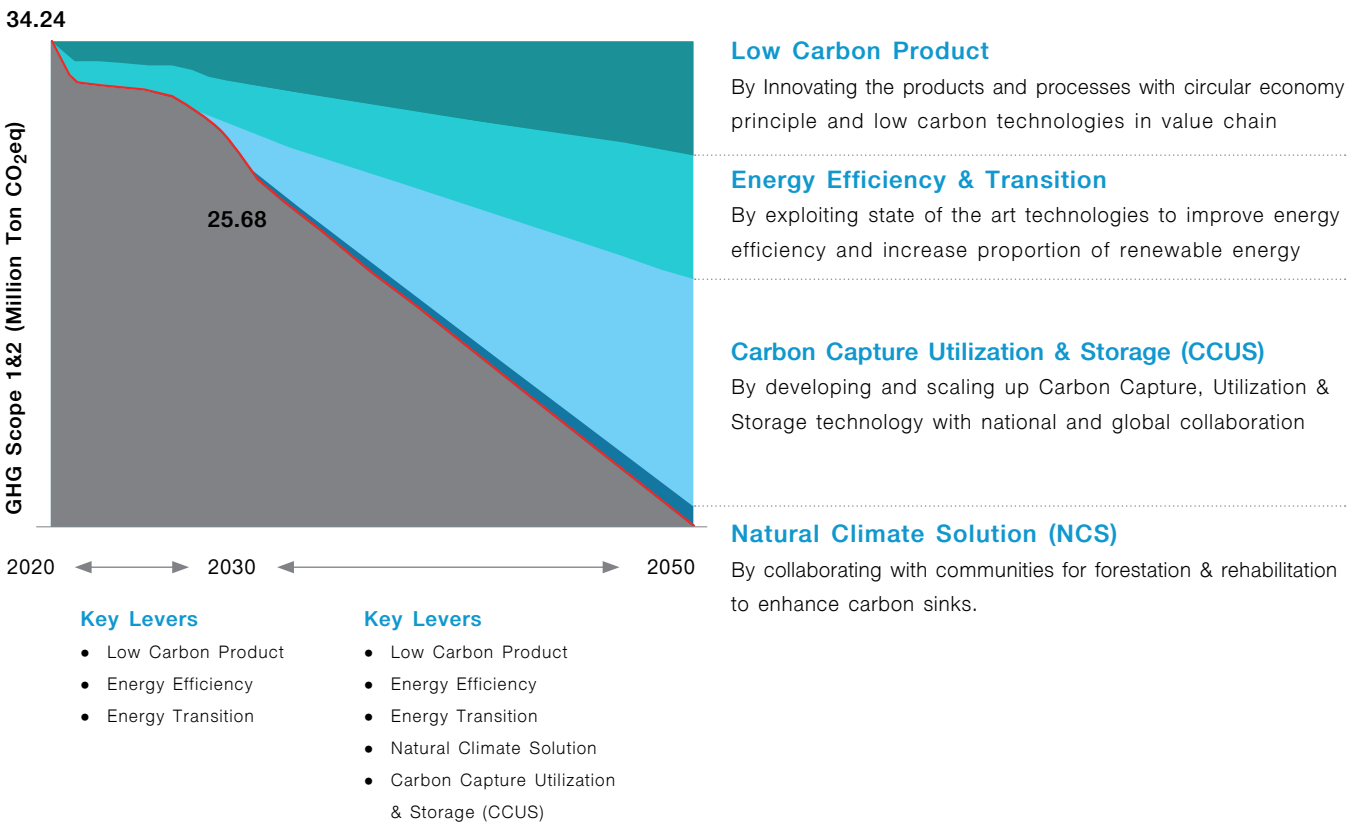
Driving Transition  
with Collaborative Actions towards  
**Low Carbon  
Society**







# SCG Net Zero Roadmap 2050



**SCIENCE  
BASED  
TARGETS**

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Near Term Target has been validated by SBTi.

SCG commits to reduce absolute scope 1 and 2 GHG emissions 25% by 2030 from 2020 base year\*. SCG also commits to reduce absolute scope 3 GHG emissions from the use of sold fossil fuels 25% by 2031 from 2021 base year.

*\*The target boundary includes biogenic emissions and removals from bioenergy feedstocks.*



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# Message from President & CEO and SCG Sustainable Development Committee

The world is currently confronting a multitude of escalating crises, spanning from the Russia-Ukraine conflict and heightened tensions in the Middle East to economic instability and environmental challenges. These include global warming, climate change, biodiversity loss, and social inequalities. These issues thus call for the collaboration of all stakeholders to work towards achieving the United Nations' 17 Sustainable Development Goals, which are founded upon the principles of balancing economic, social, and environmental systems, before the window of opportunity closes.

SCG's 2023 Sustainability Report seeks to capture ideas, strategies, and activities driven from the dedication of every business unit within SCG to foster participation across all sectors in order to drive a transition towards a low carbon society. The report also reflects SCG's commitment to sustainable development practices, which prioritize environmental, social, and governance (ESG) considerations across the entire value chain. Given the current crises both domestically and globally, it is evident that no single organization can effectively address or reverse these challenges alone. Instead, addressing them requires the collaborative actions of all sectors.

## Double and Dynamic Materiality Analysis

A key tool in SCG's sustainable development operations is materiality analysis, which SCG conducts annually. In 2023, we elevated our analysis by adopting Double and Dynamic Materiality, taking into account both the impacts of external factors on the organization and the impacts of the organization's operations on the external environment. This approach also takes into account risks and opportunities, which would then guide the development of business strategies and both short and long-term plans. Additionally, it involves the management of impacts on the business and stakeholders throughout the value chain across economic, social, and environmental dimensions.

The materiality assessment for the year 2023 revealed several topics with a high level of impact, such as climate resilience, circular economy, and health and safety. Other material issues with a moderate level of impact that were identified include sustainable products and services, water management, biodiversity and ecosystems, human rights, and community and social development.

For each material issue, relevant targets, strategies, and management, along with examples of outcomes from various past activities that reflects SCG's commitment, are detailed within this Sustainability Report.

## Near-Term GHG Reduction Targets validated by SBTi

To tackle the problem of climate change, every country has made a concerted effort to set a GHG reduction target to

keep the global temperature rise under 1.5 degrees Celsius, according to the Paris Agreement. SCG has established a goal to achieve net-zero emissions by 2050 and has been taking serious steps to reduce its emissions. These include utilizing renewable energy, reducing fossil fuel consumption, developing low carbon SCG GREEN CHOICE products, and planting trees to sequester carbon. In addition, SCG has joined the Science Based Target Initiative (SBTi), which promotes and certifies near-term and long-term GHG reduction targets for organizations and businesses based on scientific calculations. As a result, in 2023, SCG received the validation from SBTi for its near-term targets to reduce GHG Scope 1 and 2 greenhouse gas emissions by at least 25% by 2030 compared to the base year of 2020, and GHG Scope 3 emissions from the use of sold fossil fuels by at least 25% by 2031 compared to the base year of 2021.

The validation from SBTi helps to boost confidence among all stakeholders in SCG's actions in pursuit of its long-term goal by 2050 to protect our planet.

## Driving a Transition towards a Low carbon Society

Transitioning to a low carbon society requires collaborative actions of all sectors. As it is a novel concept in Thailand, it is crucial to modernize the first low carbon city through the Public Private People Partnership (4P) model to serve as a case study and identify factors of success and failure as well as various limitations. These insights will lead to the improvement of laws and regulations in support of a transition to low carbon cities in the future. In 2023, the Thai Cement Manufacturers Association (TCMA), the Industrial Council of Saraburi Province, and more than 20 partner organizations, with the support of seven ministries, collaboratively launched the "Saraburi Sandbox" to establish Saraburi as a model of a partnership between government agencies, private organizations, communities, and the general public. SCG has taken part in driving the "Saraburi Sandbox" in accordance with Thailand's Nationally Determined Contribution (NDC) Action Plan, which consists of five components, namely green transportation networks and energy transition, value creation through a circular economy, low carbon industries, low carbon agriculture, and expansion of green spaces. The project represents another potential pathway for Thailand towards becoming a low carbon country in the future.

## Fostering Cooperation Through ESG Symposium for a Sustainable World

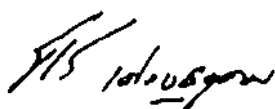
Driven by its commitment to sustainable ESG-led business practices to achieve long-term growth for the business, SCG has established clear operational guidelines known as ESG 4 Plus, which consists of "Net Zero - Go Green - Reduce Inequality - Enhance Collaboration"



**plus Trust through Transparency.** In 2023, SCG elevated ESG into a national agenda at the ESG Symposium 2023 **“Accelerating Changes Towards a Low Carbon Society,”** where all government, private, and civil society sectors came together to brainstorm and propose four collaborative approaches to the Prime Minister: 1) creating an NDC Accelerator for greenhouse gas reduction, 2) driving a transition to clean and sustainable energy, 3) elevating the circular economy into a national agenda, and 4) ensuring a just transition. Furthermore, SCG extended the collaboration and scaled up the ESG Symposium to the ASEAN level by organizing the Vietnam Circular Economy Forum 2023 and the ESG Symposium 2023 Indonesia to promote the adoption of circular economy principles and support the achievement of Vietnam's and Indonesia's goals to achieve net-zero GHG emissions in line with their NDC targets by 2050 and 2060, respectively.

## Accelerating Innovation for Low carbon Economy

One of the greatest challenges in transitioning to a low carbon economy is innovating solutions that facilitate the shift towards clean and sustainable energy and the development of low carbon products and services. In 2023, SCG introduced several noteworthy innovations, such as Rondo, an industrial heat battery technology for use in place of fossil fuels like coal, and the Smart Grid, a smart electricity network for stable and efficient clean energy management. Other examples include SCG Hybrid Cement, the low carbon cement which incorporates less clinkers and thus helps reduce greenhouse gas emissions, and high-quality SCGC GREEN POLYMER™ plastic resins, which enhance recycling efficiency and reduce carbon emissions from virgin plastic consumption.



### Thammasak Sethaudom

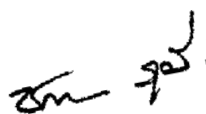
President & CEO, SCG,  
President, Cementhai Holding,  
Chairman of the SCG Sustainable  
Development Committee

## A Just Transition

To reduce social inequality, SCG aims to develop in-demand vocational skills for 50,000 people by 2030. In 2023, SCG trained professional truck drivers through SCG Skills Development School and developed technicians through Q-Chang. Additionally, through the Learn to Earn project by the SCG Foundation, SCG provided professional training for assistant nurses, dental assistant, and elderly caregivers.

SCG has also been carrying out the **“Conserving Water from Mountains to Mighty Rivers”** Project for over 20 years and has taken part in working with local communities to enhance their quality of life, increase their productivity and income, and foster self-reliance in a sustainable way. Under this initiative, SCG supports the construction of check dams and reforestation to restore forested watersheds and arid areas as well as spearheads the installation of “coral homes” to promote reef restoration and provide sanctuaries for marine life. In addition, SCG has collaborated with local fishermen as part of the Nets Up Project to reduce marine waste by collecting discarded fishing nets, which are then upcycled into value-added textile products, thus generating income for the community.

SCG operates in adherence to good corporate governance principles and carries out all activities with fairness, transparency, and accountability to foster confidence in stakeholders. This is achieved by instilling SCG Core Values and SCG Code of Conduct, which have been passed down through generations and developed into an organizational culture, in all employees and by adapting continuously, which ensures that SCG will be a key changemaker that can help the global community navigate through crises towards sustainable and balanced economic, social, and environmental development in accordance with ESG principles.



### Chana Poomee

Chief Sustainability Officer, SCG  
Co-Chairman of the SCG Sustainable  
Development Committee



# SCG at a Glance

## Business Purpose

**Inclusive Green Growth** Drive Business Expansion through Low Carbon Innovations, Fostering a Resilient and Sustainable Society

## Impact of Global Crises on the Business

Overall, the global economy in 2023 saw significant volatility due to various crises, including the conflicts between Russia and Ukraine and in the Middle East, high interest rates and inflation, fluctuating energy prices, the ongoing petrochemical downcycle, and the slowdown in the economic recovery of China and ASEAN. Thailand also faced risks due to high energy and electricity prices, which impacted every sector.

## Crisis Management

**Streamlining the structure for innovation development and prompt customer response:** SCG has restructured its management structure into an agile organization. This transformation has led to the emergence of new businesses with high growth potential, aligning with the uncertainties in the global context and the evolving needs of customers today.

- SCG Cement and Green Solution Business elevates the construction industry in ASEAN by advancing green construction innovations and technologies to meet the trend of eco-friendly construction.
- SCG Smart Living Business has developed innovations and utilizes smart technology to enhance convenience and well-being, aligning with modern lifestyles.
- SCG Decor (SCGD) has restructured COTTO into SCGD, its dominant position as the owner of the largest share in both the ceramic and sanitaryware markets in Thailand as well as its leading share in the ceramic market in Vietnam and the Philippines.
- SCG Distribution and Retail Business has elevated the building material distribution network into the strongest in the country and achieved retail and wholesale leadership across ASEAN through the use of digital technologies.
- SCGP (Packaging Business) has been listed on the SET since 2020 as part of its restructuring strategy to improve agility.

SCG was founded in 1913 by the royal command of His Majesty King Rama VI to manufacture cement and construction materials in order to reduce reliance on imports. For more than 110 years, the company has continuously grown and garnered recognition as a role model in business operation at the national, ASEAN, and global levels, thanks to its adaptability, commitment to sustainable development and corporate governance, and the application of technology to develop innovative products, services, and solutions to meet a diverse range of needs and cope with rapid changes. Currently, SCG comprises three core businesses: Cement-Building Materials Business, SCGC (Chemicals Business), and SCGP (Packaging Business).



The company has enjoyed continuous growth amid challenges through mergers and partnerships (M&P).

- SCGC (Chemicals Business) is a leader in the ASEAN chemicals market with a portfolio covering from upstream to downstream products. Despite the downcycle, which occurs every 7-10 years, the business has been able to foster strength through HVA product and service development in response to megatrends.
- SCG Cleanergy provides integrated clean energy services for government agencies, businesses, and industries and has enjoyed continuous growth.
- SCG also has other investment businesses, such as SCGJWD, an integrated digital logistics business resulting from a merger with JWD, which, through combined strength, has helped expand SCG's logistics and supply chain network into the largest in ASEAN.

**Enhancing cost competitiveness:** SCG has enhanced its energy and resource efficiency by increasing the use of clean energy in place of fossil fuels to reduce GHG emissions and reduce the risks from energy price volatility.

**Reducing costs and management expenses:** by adopting AI and automation and developing its facilities into smart factories to enhance competitiveness in the global market.



## Business Overview

### Cement-Building Materials Business

Elevating construction and residential standards and developing innovative products, services, and solutions to better reach customers and enhance efficiency, while also prioritizing social and environmental stewardship

Sanitaryware (Thailand)  
**2** plants

Water faucet (Thailand)  
**1** plants



**Number of employees**  
**23,778**

Domestic 14,532  
Overseas 9,246



**Revenue from sales**  
**189,348**  
million baht



**Total assets**  
**234,602**  
million baht

#### Manufacturing plants



**892**  
plants

Cement  
**10**  
plants

Ready-mix cement  
**849**  
plants

Roof tile and ceiling board (Thailand)  
**13** plants

Roof tile and ceiling board (Overseas)  
**5** plants

Ceramic tile (Thailand)  
**4** plants  
(Overseas)  
**8** plants



#### Services and others

Distribution & Retail  
**499** outlets

Home-related platforms, such as SCG Home, Q-Chang, <https://www.cottolife.com/>

## SCGC (Chemicals Business)

A regional leader in the integrated chemical industry that strives to develop innovations catering to diverse needs and ensure environmental sustainability to drive the economy and elevate the quality of life for all



**Number of employees**  
**7,820**

Domestic 4,984  
Overseas 2,836



**Revenue from sales**  
**191,482**  
million baht



**Total assets**  
**389,603**  
million baht

#### Manufacturing plants



**38**  
plants

Olefins  
**3** plants

Polyolefins  
**12** plants

PVC and related products  
**21** plants

PCR  
**2** plants



#### Services and others

R&D centers (Italy, UK, Norway, Thailand) **4** centers

i2P Center (Ideas to Product)

## SCGP (Packaging Business)

A regional integrated packaging solution leader that offers diverse innovative products and services with commitment to sustainable business practices



**Number of employees**  
**21,429**

Domestic 8,724  
Overseas 12,705



**Revenue from sales**  
**129,398**  
million baht



**Total assets**  
**198,561**  
million baht

#### Manufacturing plants



**194**  
plants

Packaging paper  
**8** plants

Fiber packaging  
**30** plants

Consumer and performance packaging  
**12** plants

Pulp and paper  
**3** plants

Food packaging  
**3** plants

Medical equipment  
**3** plants

Packaging material recycling  
**1** plants

Recycling facilities (Balers)  
**134** plants



#### Services and others

SCGP Inspired Solutions Studio

Online shopping platforms, such as <https://festforfood.com> <https://www.doozyonline.com> <https://holisbyscgp.com>

**Remark:** Other employees 2,551

# The Success of ESG-Driven towards Sustainable Business



## International level

Member of  
**Dow Jones  
Sustainability Indices**  
Powered by the S&P Global CSA



As of 7<sup>th</sup> February 2024, SCG achieved the highest score (Top 1%) in the Construction Materials Industry in the S&P Global Corporate Sustainability Assessment. SCG has achieved the world's No.1 ranking for a straight decade and has remained in the world's top three for 14 consecutive years. It is also the first organization in ASEAN to have been included as DJSI world member for 20 consecutive years since 2004.



SCG has been recognized as an ESG Industry Top Rated Company in the Industrial Conglomerates industry in the ESG Risk Ratings by Morningstar Sustainalytics, a leading ESG research that supports investors around the world with the development and implementation of responsible investment strategies.



SCG has been rated at Level A- in climate change, Level A- in forest management, and Level B in water security in the chemicals sector by the Carbon Disclosure Project (CDP).



SCG received the AA rating on the MSCI ESG Ratings in the Construction Materials Industry for the seventh consecutive year from Morgan Stanley Capital International (MSCI), the world's leading stock index provider.



SCG has been recognized as member of the FTSE4Good Index Series by FTSE Russell based on an assessment of its capabilities to operate in adherence to Environmental, Social and Governance (ESG) practices.



## National level



SCG was rated AAA in the SET ESG Ratings by the Stock Exchange of Thailand - the first year SET announced assessment results in the form of ratings by integrating key sustainability issues into business operations. Taking into account risk management, preparing for emerging risks, and dealing with social and environmental change factors to increase long-term competitiveness and prioritize the needs of all stakeholders.



SCG won a Sustainability Excellence Award for the eighth consecutive year in recognition of its exemplary sustainability practices and a Sustainability Award of Honor for the sixth consecutive year from the Stock Exchange of Thailand.



SCG received HRH Princess Maha Chakri Sirindhorn's Trophies in four categories, namely Leadership Excellence, Human Resource Management Excellence (for the 21<sup>st</sup> consecutive year), Innovation Excellence, and Sustainable Development Excellence, from the Thailand Management Association (TMA) in collaboration with Sasin Graduate Institute of Business Administration of Chulalongkorn University.



SCG was given an Excellence Award in the Large Enterprise Category at the Human Rights Awards for a fourth consecutive year by the Rights and Liberties Protection Department under the Ministry of Justice in recognition of its dedication to human rights risk management across the value chain and its role in promoting diversity and inclusivity and reducing disparities in society.





# OUR BUSINESS

**Cement-Building  
Materials Business**

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**SCGC  
(Chemicals Business)**

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**SCGP  
(Packaging Business)**

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**SCG GREEN CHOICE**

# Cement-Building Materials Business

Driving the future by advancing a low carbon society

**Greenhouse Gas Emissions**

**19.44**

million tCO<sub>2</sub>eq

**Specific CO<sub>2</sub> Gross/Net**

**592/568**

kgCO<sub>2</sub>/ton cementitious

**Alternative Fuel Consumption**

**32.12** %

**Revenue from Sales of SCG**

**Green Choice Products, Services and Solutions**

**47.43** %

**Lost Time Injury Frequency Rate for Employees and Contractors**

**0.223**

cases/1,000,000 hours worked



## Challenges and Goals

In 2023, Thailand's economy showed signs of recovery, with the service and tourism sectors showing continuous growth, leading to the overall growth of the construction industry in the country. However, given the ever-intensifying droughts brought on by global warming, the Cement and Building Materials Business needed to realign its business strategies with global megatrends and evolving customer demands, placing emphasis on developing green innovations and solutions, promoting eco-friendly construction and houses, and reducing costs through the use of alternative energy sources or fuels to step up sustainable business practices.

## ESG 4 Plus-Driven Sustainable Business Operations

### Net Zero

- **SCG Cement and Green Solution Business** sources biomass sustainably using a contract farming model, in which the company purchases energy crops grown on long-term leased land at reasonable prices. In the initial phase, over 1,000 rais have been cultivated, with an estimated annual crop yield of 30,000 tons of energy crops. Additionally, efforts are being made to accelerate the production and utilization of low carbon cement as a replacement for Portland cement.
- The cement plants process community waste into refuse derived fuels (RDF) to reduce the use of coal and methane (CH<sub>4</sub>) emissions from landfilling community waste, equivalent to 2.24 million tCO<sub>2</sub>eq in avoided emissions.
- **SCG Décor** has installed solar panels for electricity generation and has begun using biomass energy in production. It has also optimized the energy efficiency of its production.







## Go Green

- **SCG Smart Living Business** is dedicated to applying the principles of circular economy to develop green products and services, while also enhancing well-being. For instance, Q-CON lightweight concrete for building walls and SCG thermal insulation help conserve electricity and reduce greenhouse gas emissions.
- **SCG Décor** has aimed to increase the sales of SCG GREEN CHOICE products to 80% of its total revenue. These products are designed for sustainable living, such as dust-capturing tiles, circular products, water-saving sanitaryware, and products with low volatile organic compound (VOC) emissions.



## Enhance Collaboration

- Public Private Partnership Model - Saraburi Sandbox (4P-SB Sandbox) is a public-private collaboration to study and develop a low carbon city and reduce greenhouse gas emissions through five key projects: energy, IPPU, waste management, agriculture, and space management.
- The Company seeks to foster a circular economy in the construction industry throughout the value chain through the Circular Economy in Construction Industry (CECI) network, which comprises real estate development companies, architecture and construction consulting firms, manufacturers, construction contractors, and construction waste management service providers. Currently, the membership has expanded to include 36 organizations across the value chain.



## Reduce Inequality

- **SCG Cement and Green Solution Business** strives to enhance the livelihoods of farmers by promoting the cultivation of energy crops, such as napier grass, bamboo, or black wattle, to be used as alternative fuels in line with energy transition guidelines.
- **SCG Décor** has collaborated with local communities to develop products made from the company's leftover materials in order to create jobs and income for them. It has also partnered with government agencies, such as the Department of Skill Development, Kasetsart University, and the Department of Land Development, to develop social projects guided by transparent and fair operations.



# SCGC (Chemicals Business)

## Developing innovative chemicals to drive sustainability

### Greenhouse Gas Emissions

**3.62**  
million tCO<sub>2</sub>eq

### Energy Consumption

**61.49**  
petajoules

### Revenue from Sales of SCG Green Choice Products, Services and Solutions

**56.02** %

### Lost Time Injury Frequency Rate for Employees and Contractors

**0.000**  
cases/1,000,000 hours worked



## Challenges and Goals

The growth of demand for chemical products has shrunk with the economic condition, influenced by various factors such as geopolitical conflicts, global economic recession, and sluggish economic growth in China. SCGC (Chemicals Business) has therefore adjusted its strategies to address the multifaceted challenges by enhancing the flexibility in sourcing feedstocks, realigning production and sales plans with the market condition, advancing the development of SCGC GREEN POLYMER™ innovation, and accelerating expansion into the circular economy business in accordance with ESG guidelines. SCGC also seeks opportunities for growth in new businesses to strengthen its potential for the future.

## ESG 4 Plus-Driven Sustainable Business Operations



## Net Zero

- SCGC strives to achieve carbon neutrality by the year 2050, with a target of reducing greenhouse gas emissions by 20 percent compared to the base year of 2030 through the Low Waste, Low Carbon approach. This involves improving or changing processes and equipment to enhance energy efficiency, phasing out fossil fuels for clean energy, developing and investing in low carbon technologies, applying circular economy principles across the value chain, and engaging in carbon offset activities.
- SCGC partnered with IHI, a leading manufacturer of industrial machinery for power plants in Japan, to study and develop a pilot plant to test the carbon dioxide capture and utilization (CCU) technology for conversion into light olefins.
- SCGC undertook a research and development collaboration with world-class experts in renewable chemistry technology to experiment with the production of PLGA polymers using carbon dioxide as a feedstock, which would result in carbon-negative plastic.
- SCGC restored ecosystems and advanced its decarbonization efforts through the Plant-Cultivate-Protect Campaign, which involved the planting of terrestrial and mangrove forests in an area covering nearly 2,000 rais, capable of sequestering more than 10,000 tCO<sub>2</sub>eq.





## Go Green

- SCGC accelerated the development of SCGC GREEN POLYMER™ innovations, with the goal of achieving a target sales volume of 1,000,000 tons per year by 2030. Such innovations include high-quality odorless HDPE PCR resin and recyclable carbon-negative bio-polyethylene resin.
- SCGC partnered with Denka, a Japanese company, to manufacture and distribute acetylene black, an essential component in producing lithium-ion batteries for electric vehicles and high-voltage power transmission lines for offshore wind farms.
- SCGC has developed the innovative PE100RC plastic for high pressure-resistant pipes, making it the first in ASEAN to meet the European EN-1555-1 standards. The innovation makes it possible to lay pipe systems without surface or road drilling, thus reducing energy consumption and greenhouse gas emissions in installation processes.



## Reduce Inequality

- SCGC has generated a revenue of over 59 million baht for communities around its factories in Rayong by developing local community enterprises and providing various forms of support. Additionally, SCGC has generated a revenue of over 10 million baht for communities around its LSP factory in Vietnam and awarded undergraduate scholarships to 12 community members.
- SCGC has carried out a community water management project involving check dam construction and reforestation in Khao Yai Da area in collaboration with local communities. This project helps restore terrestrial ecosystems and generated nearly 200 million baht worth of payment for ecosystem services (PES). SCGC has also contributed to the restoration of marine ecosystems through The Sea Saver project in which fish homes are constructed to enhance marine biodiversity and population growth, thereby ensuring the sustainable livelihood of local fishermen.



## Enhance Collaboration

- To drive a circular economy in local communities and among youth, SCGC has launched the Nets Up model, where discarded fishing nets are converted into marine materials, offering an alternative recycled material. The model was first piloted in Rayong.
- As part of the ongoing Upcycling Milk Pouches Project, SCGC has further enhanced the capacity to collect and transport milk pouches from schools in collaboration with partners across its networks. Cumulatively, over 1.6 million milk pouches have been recovered for recycling from 1,850 schools across 50 provinces.



# SCGP (Packaging Business)

## Greenhouse Gas Emissions

**4.02**

million tCO<sub>2</sub>eq

## Energy Consumption

**59.10**

petajoules

## Alternative Fuel Consumption

**35.97** %

## Revenue from Sales of SCG Green Choice Products, Services and Solutions

**57.34** %

## Lost Time Injury Frequency Rate for Employees and Contractors

**0.435**

cases/1,000,000 hours worked



## Challenges and Goals

While packaging demand in the ASEAN region has been seeing a steady recovery, especially in the commodity goods sector such as food, beverages, and daily consumer products, exports to the European and American markets are still reeling from impacts of the global economic situation. As such, SCGP (Packaging Business) is conducting business cautiously and seeking to expand its growth through partnerships in order to develop innovative packaging solutions in response to new trends and demands in adherence to ESG practices, with the goal of improving the quality of life and creating better communities and a more sustainable environment.

## ESG 4 Plus-Driven Sustainable Business Operations



### Net Zero

- SCGP strives to reduce greenhouse gas emissions by 25% by the year 2030 both domestically and internationally compared to the base year of 2020 and to achieve net-zero greenhouse gas emissions by 2050 to help keep a global temperature increase under 1.5 degrees Celsius as agreed upon under the Paris Agreement.
- SCGP has been recognized as a Climate Action Leading Organization (CALO) with outstanding assessment results by the Thailand Carbon Neutral Network (TCNN), a network under the Thailand Greenhouse Gas Management Organization (Public Organization).
- SCGP, in collaboration with local communities and government agencies, has planted a total of 62,549 trees under the “SCGP Plant Beat Heat” Project in the provinces of Ratchaburi, Kanchanaburi, Prachinburi, and Khon Kaen to increase carbon sequestration and storage.







## Go Green

- SCGP has set a target to reduce water consumption by 35% by 2025 compared to the base year of 2014 through active and continuous actions in accordance with international guidelines.
- SCGP has implemented measures to reduce industrial waste, increase the recycling of post-consumer paper, and increase the proportion of recyclable plastic packaging, with the aim of increasing the proportion of recyclable, reusable, or biodegradable packaging to 100% of all packaging portfolio by 2030.
- SCGP has developed Fest by SCGP, a safe food packaging solution, to meet the needs of the food manufacturing industry. Made from the pulp of eucalyptus, a rapidly growing, renewable, and naturally biodegradable economic plant, Fest by SCGP products include Fest Fresh Pak, paper trays for chilled fresh food, and Fest Redi Pak, paper trays for chilled ready-to-eat food.



## Reduce Inequality

- SCGP has launched the circularity-driven **“Paper Tape Basketry for Professional Promotion Project”** in which local communities in Ratchaburi, Kanchanaburi, and Rachaburi are provided with leftover paper tape from SCGP’s manufacturing process as a material for weaving into handicraft products, with the Company assisting with market expansion. The communities generated an accumulated income of 5.5 million baht from 2019 to 2023.
- SCGP carried out **“SCGP Waste-free Community Project”** for the fourth consecutive year to promote a circular economy and scale up its community waste management model. Since its launch, the project has developed a total of 143 model communities of waste management, reduced 2,669 tons of waste, and generated a combined income of 2.45 million baht for the communities. The goal is to scale up the initiative to 183 communities by 2030.



## Enhance Collaboration

- SCGP has collaborated with various partners, including MCOT, Ichitan, Uniqlo Thailand, and Thailand Post, to promote awareness and collect used paper for recycling to maximize its utilization and drive sustainable waste management practices.
- SCGP fostered a collaboration for the development of **“packaging for sustainability”** at **SCGP Circularity in Action: Pursuit of Packaging Sustainability**, in which over 40 Thai and international partners were invited to share their ideas and experience to enhance packaging eco-friendliness throughout the entire process.

# SCG GREEN CHOICE



SCG GREEN CHOICE is a labeling system for certifying environmentally friendly products, services, and solutions that enhance well-being. SCG Green Choice is further divided into three sub-categories: Climate Resilience, Circularity, and Well-Being. SCG has fostered collaboration with various organizations and agencies to promote the use of SCG Green Choice-labeled products to contribute to the achievement of the global sustainable development goals.



**CPAC Eco Formula Concrete, Q-Con Light Weight Concrete, and SCG Fascia Boards** reduce 450 tCO<sub>2</sub>eq during the manufacturing process and can save more on electricity bills than any other wall materials.

## Collaboration between the Cement and Building Materials Business and SC Asset Corporation Co., Ltd., under the Circular Economy in Construction Industry (CECI).

The Company has elevated the residential construction industry towards sustainable development by introducing the concepts of circular economy and green construction, with the goal of reducing greenhouse gas emissions. In 2023, for the residence and condominium projects of SC Asset Corporation Co., Ltd., SCG GREEN CHOICE products accounted for 30% of the total sales.

- In 2023, the Company contributed at least 307 tCO<sub>2</sub>eq in avoided emissions, equivalent to planting 25,599 trees.
- The Company has set a target of increasing the use of SCG GREEN CHOICE to 40% by 2024.



“ The use of environmentally friendly materials not only helps reduce greenhouse gas emissions, but also enables customers to benefit from SCG GREEN CHOICE-labeled products, which enhance their well-being, reduce the temperature of the house, and thus lower utility expenses. ”

### Paphandech Pacharachanant

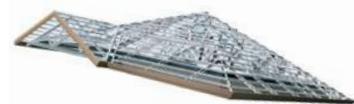
Chief Business Support Officer, SC Asset Corporation Co., Ltd.



**SCG Thermal Insulation** can save electrical power and at least 0.79 kgCO<sub>2</sub>eq per sq.m. each year. Additionally, it utilizes recycled materials in the manufacturing process, replacing the use of natural sand by up to 13 tons.



**SCG Concrete roof tile CPAC and Prestige** reduce the use of natural resources thanks to the incorporation of recycled materials, replacing the need for 125 tons of cement.



**SCG Roof Trusses** utilize less steel than normal trusses and can save 296 tons of steel.





### Collaboration between SCGC (Chemicals Business) and Metropolitan Waterworks Authority (MWA)

The Company has developed a pilot project for the High-Impact PVC pipe to study problems in its deployment and overseas standards. The objective is to enhance the formulas and production and conduct field tests in order to meet the TISI 17-2561 standards and ensure the pipe is a suitable substitute for PVC-U pipes and can reduce water loss due to pipe damage.

- In 2023, 10 pipelines measuring 7.9 km in total were installed as part of the pilot project.
- In 2024, MWA will promote the use of the High-Impact PVC pipe in place of the PVC-U pipe, with SCG expanding the adoption in collaboration with other organizations.



“ We worked with SCG to co-develop products that would meet our need in reducing water loss. The result is PVC pipes that are not only tough and strong but also have an extended service life. They have passed various tests and have suitable specifications for our sites. ”

**Marnus Changnoi**  
Assistant Governor  
(Services 1)  
Metropolitan Waterworks  
Authority



**The High-Impact PVC pipe** boasts toughness, strength, durability, and high impact resistance. As such, it has an extended service life and reduces the consumption of natural resources.



### Collaboration between SCGP (Packaging Business) and manufacturers

- The Company co-developed Fest Fresh Pak, a paper tray for chilled fresh meat, with **Betagro Group** as a substitute for polypropylene trays. The innovative tray is produced from eucalyptus pulp, certified to FSC™ standards across the value chain, and retains the same level of strength and the ability to maintain meat freshness as per the client’s standard.
- Retort-able barrier food packaging features at least 21% PCR of the total weight and can preserve food at room temperature for at least 1 years.



“ The paper packaging for fresh products is an innovation for sustainability. It is a preferred choice for customers because it is hygienic and free of contaminants and antibiotics and because of the meticulous care put into the product, from the manufacturing process to when it reaches the hands of consumers. The paper packaging co-developed by Betagro and FEST is a testament to that commitment and is also environmentally friendly. ”

**Wanlop Wongpinkeaw**  
Packaging Director  
Better Foods Co., Ltd.



**Fest Fresh Pak** features more renewable materials, which now make up 80% of the weight of the tray, and can maintain the quality of the food inside for at least 7 days.

**Barrier PP Food Packaging** allows food to be preserved for 1-2 years without refrigeration and ensures the food is free of contaminants. The packaging also increases material reutilization.









# GOVERNANCE

**Governance Structure for  
Sustainability**

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**Meetings of Sustainability-  
Related Committees in 2023**

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**Voices of Young Executives  
and Female Executives**

# Governance Structure for Sustainability

SCG has committed to its long-standing business philosophy and believes that organizational management with responsibility, fairness, and transparency according to the principles of corporate governance constitutes the foundation of the creation of long-term returns and value, promotes competitiveness and growth, and fosters confidence among all stakeholders, with the Board of Directors serving as governance champions.

## Governance Structure

Within a complex, volatile, and ever-changing business context, SCG's governance structure has been designed to promote operations according to the principles of corporate governance and decision making on the basis of effective and accurate information. This is to ensure that all directors and executives fulfill their duties with responsibility, prudence, and integrity in compliance with laws, regulations, and shareholders' resolutions as well as any other prescribed policies and guidelines to advance the best interests of the organization, shareholders, and relevant stakeholders. SCG Corporate Governance Handbook, which compiles ethical and socially responsible practices, serves as a framework for organizational management and business development towards becoming a corporate governance role model according to SCG vision.



Three Dimensions of Sustainable Development Committee



Strategy and Management Committee for the Strategic Issues



Responsible Functions

## SCG Sustainable Development Committee



**Thammasak Sethaudom**  
President & CEO and President, Cemethai Holding Company Limited

Chairman



**Chana Poomee**  
Chief Sustainability Officer, Chairman of the Climate Change & Energy Committee, Chairman of the Health & Safety Committee

Co-Chairman



**Chantanida Sarigaphuti**  
Vice President - Finance and Investment & CFO

Governance & Economic Dimension Leader



**Suracha Udomsak**  
Chief Innovation Officer and Executive Vice President - New Business, Chemicals Business

Environment Dimension Leader



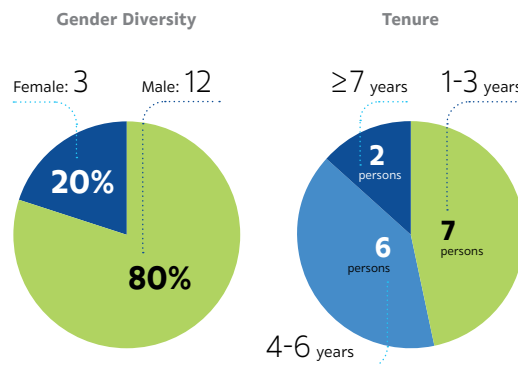
**Paramate Nisagornsen**  
Vice President - Corporate Administration

Social Dimension Leader



## Structure of the Board of Directors

SCG's Board of Directors consists of individuals with a diverse range of skills, experience, knowledge, and expertise consistent with SCG's business operations. They play a key role in establishing SCG's vision, missions, and business strategies to create sustainable value for both SCG and stakeholders, without any discrimination based on other characteristics, such as gender, age, ethnicity, nationality, and religion.



## Oversight of the Board of Directors

- Consider the formulation of strategies, business direction, and policies aligned with international frameworks for sustainable development across environmental, social, and governance (ESG) dimensions. Integrating material issues (Double Materiality) as well as risk and opportunity management across the value chain by considering both impacts of external on the business (Outside-in) and impacts of business activities on externality (Inside-out).
- Establish metrics and targets, with an annual review of the Company's important policies and plans.
- Support operations to achieve sustainable development goals and foster collaboration and engagement with stakeholders.
- Manage and allocate key resources for the achievement of the established goals. The Board of Directors is also responsible for overseeing, monitoring, and assessing SCG's operations and the performance of the top executives against the prescribed plans while maintaining independence.

## Management of the SCG Sustainable Development Committee

- Establish sustainability policies, goals, strategies, and guidelines for sustainability operations.
- Define material issues (Double Materiality) by considering both impacts of external on the business (Outside-in) and impacts of business activities on externality (Inside-out), including risks and opportunities. Establish the approach for integrating material issues into the development of the business strategies and the Medium-Term Plan (MTP).
- Monitor and follow up on business performances on a quarterly basis and improve to achieve maximum efficiency based on recommendations through sub-committees, namely the Committees for Sustainable Development in three major dimensions: Environmental, Social, and Governance and Economic, and the Strategy and Management Committee for the Strategic Issues, focusing on two major issues, consisting of the Climate Change & Energy Committee and the Health & Safety Committee.
- Appoint Sustainable Development Committees of each business unit to incorporate SCG's sustainability goals, strategies, and practices and formulate action plans that are particular to each business to ensure company-wide alignment.

## Governance Activities of the Board of Directors and the Sub-Committees in 2023

Key Topics	The Board of Directors	The Audit Committee	The Governance and Nomination Committee	The Remuneration Committee	CSR Committee for Sustainable Development
Corporate Strategy and Business Direction	●				
ESG and Long-Term Strategy	●	●			●
Double Materiality Assessment	●	●			●
Risk Management	●	●			
Tax	●	●			
Data Privacy and Security	●	●			
Business Ethics	●	●	●		
Human Capital	●			●	
Stakeholder Engagement	●				●
Board and Executive Succession	●		●	●	

# Meetings of Sustainability-Related Committees in 2023

Committee	Key Issues	Number of meetings per year
The Board of Directors	<ul style="list-style-type: none"> <li>Establish strategies, business directions, and policies for the short and long terms, integrating material issues (Double Materiality) as well as risk and opportunity management across the value chain by considering both impacts of external on the business (Outside-in) and impacts of business activities on external (Inside-out) in line with international ESG frameworks.</li> <li>Set metrics and targets aligned with ESG practices.</li> </ul>	8
Audit Committee	<ul style="list-style-type: none"> <li>Establish policies and oversee enterprise risk management.</li> <li>Monitor and review to ensure that enterprise risk management is efficient and effective and significant risks are identified in line with ESG practices. Conduct assessments and develop mitigation plans, utilizing sensitivity analysis and scenario analysis according to the TCFD framework.</li> </ul>	8
Remuneration Committee	<ul style="list-style-type: none"> <li>Evaluate the performance of the President &amp; CEO and top executives to determine appropriate remuneration and propose to the Board of Directors for approval, taking into account adherence to board policies, both financial and non-financial impacts, and the achievement of sustainability targets, which account for 30% of the consideration.</li> <li>Review, study, and monitor changes and trends in compensation regularly to propose remuneration policies that can motivate these executives to lead the company towards success as well as to retain competent and ethical employees.</li> </ul>	6
CSR Committee for Sustainable Development	<ul style="list-style-type: none"> <li>Promote ESG-driven CSR activities with a focus on collaboration, self-reliance, and positive business impacts.</li> <li>Emphasize the preservation of environmental balance and approach towards a low carbon society through “the Conserving Water from Mountain to Mighty River Project” to advance community water management, mitigate drought and floods, conserve community forests, and expand terrestrial forests as well as to support low carbon community models in order to alleviate global boiling.</li> <li>Strive to reduce inequalities by prioritizing professional development, access to public health services, and educational opportunities, especially for vulnerable groups.</li> <li>Promote SCG’s CSR activities and offer recommendations to further enhance project implementation.</li> <li>Review CSR performance for the year 2023 and approve action plans and budgets for projects in 2024.</li> </ul>	4 (quarterly)
SCG Risk Management Committee	<ul style="list-style-type: none"> <li>Overseeing enterprise risk management to be in accordance with the organizational structures and their roles and responsibilities.</li> <li>Consider, review, monitor, approve, and report risk profile and its impacts in economic, social, and environmental dimensions, as well as risk response and mitigation, by considering both impacts of external on the business (Outside-in) and impacts of business activities on external (Inside-out).</li> </ul>	5
SCG Sustainable Development Committee	<ul style="list-style-type: none"> <li>Review materiality in line with the principles of double materiality, revise the sustainability structure, oversee and manage ESG 4 Plus across the value chain, and integrate into business operations.</li> <li>Monitor and review ESG performances and apply international ESG assessment standards such as ISSB, S&amp;P Global, CDP, MSCI, and Sustainalytics to improve performance, and disclose the important information in the sustainability report.</li> <li>Enhance collaboration with national and international stakeholders, such as WBCSD, GCCA, UNGC, TBCSD, the Thai Cement Manufacturers Association, the Federation of Thai Industries, the Thai Chamber of Commerce and Board of Trade of Thailand and government agencies.</li> </ul>	4 (quarterly)



Committee	Key Issues	Number of meetings per year
Governance and Economic Excellence Committee	<ul style="list-style-type: none"> <li>• Develop business long-term plans by integrating risk management framework, and scenario analysis in accordance with the TCFD framework.</li> <li>• Monitor enterprise risk management, business ethics, transparent disclosure under the overseeing of the Board of Directors.</li> <li>• Oversee data integrity to ensure access to accurate and reliable data, enhance business decision-making capabilities, promote transparency, and measure progress towards sustainability goals.</li> <li>• Maintain business stability and adaptability and oversee strategies, investments, post-audits, and investment projects related to a low carbon economy and a transition to Net-Zero GHG emissions.</li> </ul>	4 (quarterly)
Environment Excellence Committee	<ul style="list-style-type: none"> <li>• Establish policies, strategies, and goals on a circular economy, sustainable products and services, waste management, water management, and air quality management.</li> <li>• Incorporate nature-related risks and opportunities into strategic planning following TNFD (Task Force on Nature-related Financial Disclosure) framework.</li> <li>• Monitor impacts related to environmental performance, eco-efficiency, biodiversity and ecosystems.</li> <li>• Elevate environmental actions in each country in which SCG operates in order to become a leader in environmental stewardship.</li> </ul>	4 (quarterly)
Social Excellence Committee	<ul style="list-style-type: none"> <li>• Foster implementation related to international standards such as UNGP, UDHR, ILO, OECD, and TIFD to manage risks and impacts in SCG's own operations, joint ventures, suppliers and contractors including stakeholders across the value chain.</li> <li>• Establish policy, strategy, target and monitor the performance of Human Rights, Reduce Inequality which include Stakeholders Engagement and provide consultation for concrete implementation.</li> <li>• Disclose social information in accordance with international standards and stakeholders' expectations.</li> </ul>	4 (quarterly)
Climate Change & Energy Committee	<ul style="list-style-type: none"> <li>• Establish policies, strategies, goals, and guidelines to achieve net zero emissions, in line with the Nationally Determined Contributions (NDCs) of each country, covering medium- and long-term targets consistent with Science-Based Target (SBT) and an energy transition to achieve SCG Net Zero Roadmap 2050.</li> <li>• Collaborate with internal and external parties to provide recommendations and advocate for legal changes in support of decarbonization and energy transition.</li> <li>• Foster awareness and a sense of responsibility towards the goal of achieving net zero emissions and energy transition within the organization and across the value chain through communications and campaigns. Establish policies, strategies, goals, and guidelines to achieve net zero emissions, in line with the Nationally Determined Contributions (NDCs) of each country, covering medium- and long-term targets consistent with Science-Based Target (SBT) and an energy transition to achieve SCG Net Zero Roadmap 2050.</li> <li>• Collaborate with internal and external parties to provide recommendations and advocate for legal changes in support of decarbonization and energy transition.</li> <li>• Foster awareness and a sense of responsibility towards the goal of achieving net zero emissions and energy transition within the organization and across the value chain through communications and campaigns.</li> </ul>	12 (monthly)
Workplace Safety Committee  Transportation Safety Committee	<ul style="list-style-type: none"> <li>• Establish policies, strategies, planning, targets, and indicators in line with relevant international standards and regulations.</li> <li>• Assess, monitor, and provide recommendations to ensure that the business operates in accordance with the action plan and targets, and analyze outcomes gained to provide consultation for further improvements.</li> <li>• Promote the effective implementation of SCG Safety Framework, the Transportation Safety Standards, the Safe Work Standards, and Life Saving Rules, as well as operational discipline, both in Thailand and abroad.</li> <li>• Conduct an analysis of root causes, trends, and corrective and preventive measures and provide recommendations to prevent recurrence.</li> <li>• Build a network to improve safety collaboration among associated stakeholders at all levels across all sectors.</li> </ul>	4 (quarterly)

# Voices of Young Executives and Female Executives

SCG promotes diversity and equitable treatment for all genders as well as seeks to recruit and develop every individual from diverse background to enable them to work together efficiently as a team in order to drive the organization forward in alignment with ESG practices and foster sustainable growth.



“ SCG recognizes diversity among individuals when it comes to their learning in order to adapt their lifestyles and keep pace with the rapid changes in today’s world. SCG is an organization that recognizes and creates opportunities and is ready to share them with people who believe in their own value and strengths in order to innovate and accelerate societal change towards a low carbon society to foster sustainable growth and create a better world for everyone.

”

**Aobboon Yamsirikul**  
Enterprise Brand Management Office Director  
SCG

“ Cooperation from all sectors of society is indispensable in realizing a low carbon society. As it is among the parties that play a vital role, SCG recognizes the need to instill knowledge, understanding, and awareness of the importance of conducting business towards a low carbon society among its employees. This involves the development of hard skills, such as by providing knowledge and concrete examples of how to create a low carbon society, as well as soft skills, such as by cultivating awareness and participation to drive together.

”

**Pattaraphon Charttongkum**  
Manager – HRBP – Indonesia  
SCG

“ Given the intensifying climate change and its increasing impact on global communities and the environment, the business sector needs to adapt to the situation and the ensuing measures, whether it’s national policies, carbon tax and pricing, or carbon border adjustment mechanisms. These changes, however, must not leave anyone behind, be it business partners or communities. New generation leaders must adopt ESG principles and formulate plans to decarbonize their businesses to keep up with these changes alongside sustainable growth.

”

**Butra Boonliang**  
Head of Climate Resilience Office  
SCGC (Chemicals Business)

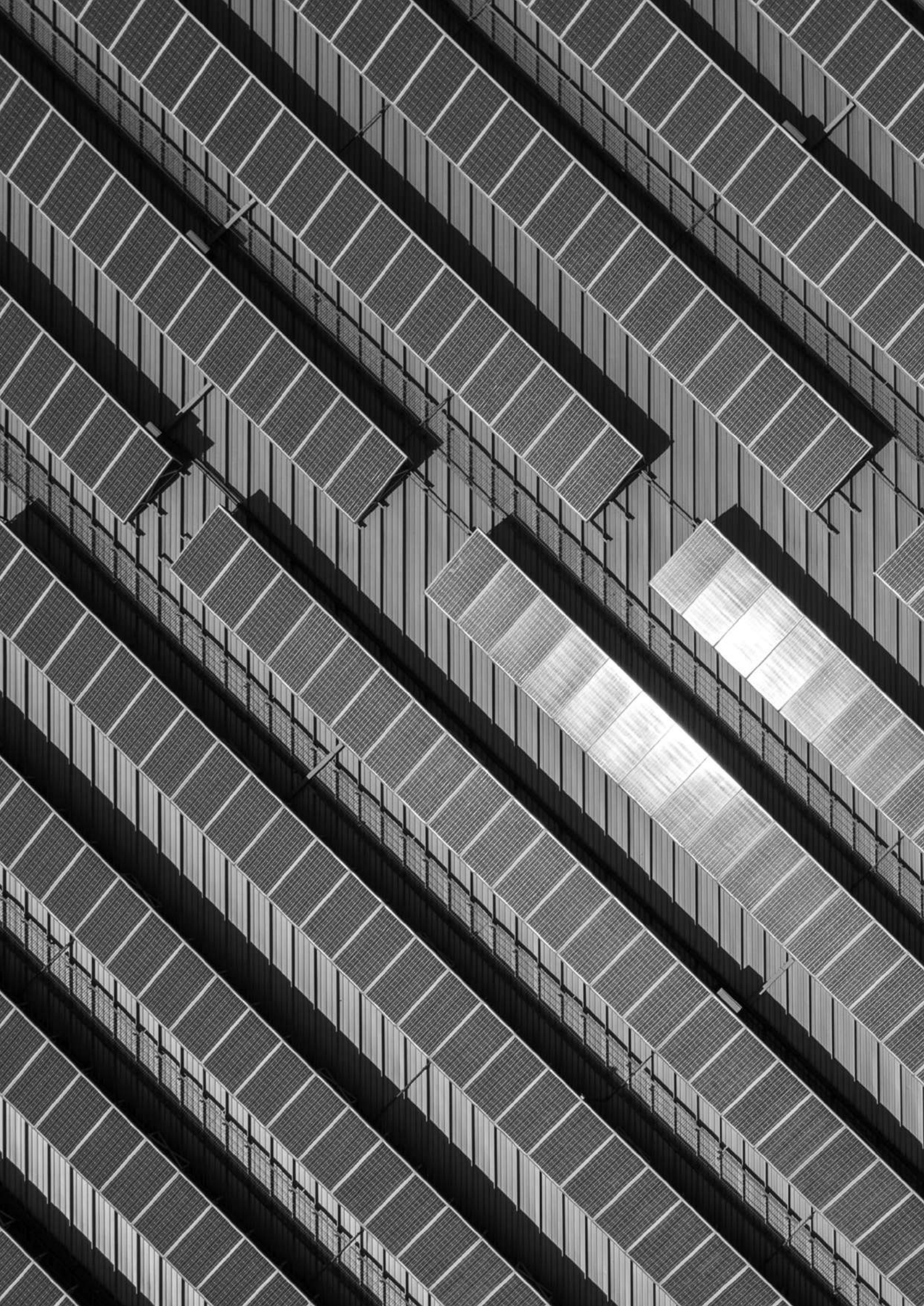
“ ESG-Driven Investment, which focuses on environmental, social, and governance development, has become a vital criterion for domestic and international investors. As such, financial performance alone may no longer suffice. An ESG-driven strategy for adaptation in pursuit of a low carbon society that takes all stakeholders across the value chain into consideration is an essential factor in building long-term competitiveness in order to deliver value and offer cooperation to shareholders, investors, customers, society, and countries, thus ensuring sustainable and mutual growth.

”

**Panadda Sukpanthavorn**  
Investor Relations Associate Director  
SCGP (Packaging Business)









# OUR STRATEGY

Strategy and Sustainable  
Value Creation

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Risk Management

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Stakeholder Engagement

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2023 Opinion Panel

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Materiality

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Investments for Sustainable  
Development

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Materiality Management

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SCG's Commitment  
to Sustainable Development  
Goals

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Sustainability Performance  
in 2023

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Partnership Synergy  
Towards Sustainability



# Strategy and Sustainable Value Creation



## Financial Capital

- Assets **893,601** Million Baht
- Shareholder's Equity **441,597** Million Baht
- Equity Attributable to Owners of the Parent **363,962** Million Baht



## Manufactured Capital

- Cost and Expenses **504,796** Million Baht



## Intellectual Capital

- R&D and Innovation Spending **6,701** Million Baht



## Human Capital

- Number of Employees **55,578** Persons
- Number of New Employees Hire **3,122** Persons
- Average Hiring Cost per Employee **87,975** Baht/Person
- Average Hours of Training and Development **129** Hours/Person
- Average Amount Spent on Training and Development **13,905** Baht/Person



## Social and Relationship Capital

- Contribution for Social and Community **397** Million Baht
- Employee Volunteering during Paid Working Hours **56** Million Baht
- In-kind Giving: Products or Services Donations, Projects/Partnerships or Similar **9** Million Baht
- Management Overheads Related to CSR Activity **141** Million Baht



## Natural Capital

- Raw Materials **82.04** Million Tons  
CBM **82%**  
SCGC **10%**  
SCGP **8%**
- Total Energy Consumption **225.11** Petajoules  
CBM **47%**  
SCGC **27%**  
SCGP **26%**
- Total Water Withdrawal **122.17** Million Cubic Meters  
CBM **20%**  
SCGC **21%**  
SCGP **59%**



## Enhance Collaboration

Drive ESG with Collaborations at the National, ASEAN, and International Level



Plus Trust through SCG Four

Cement-Building (C)

Concern for Social Responsibility

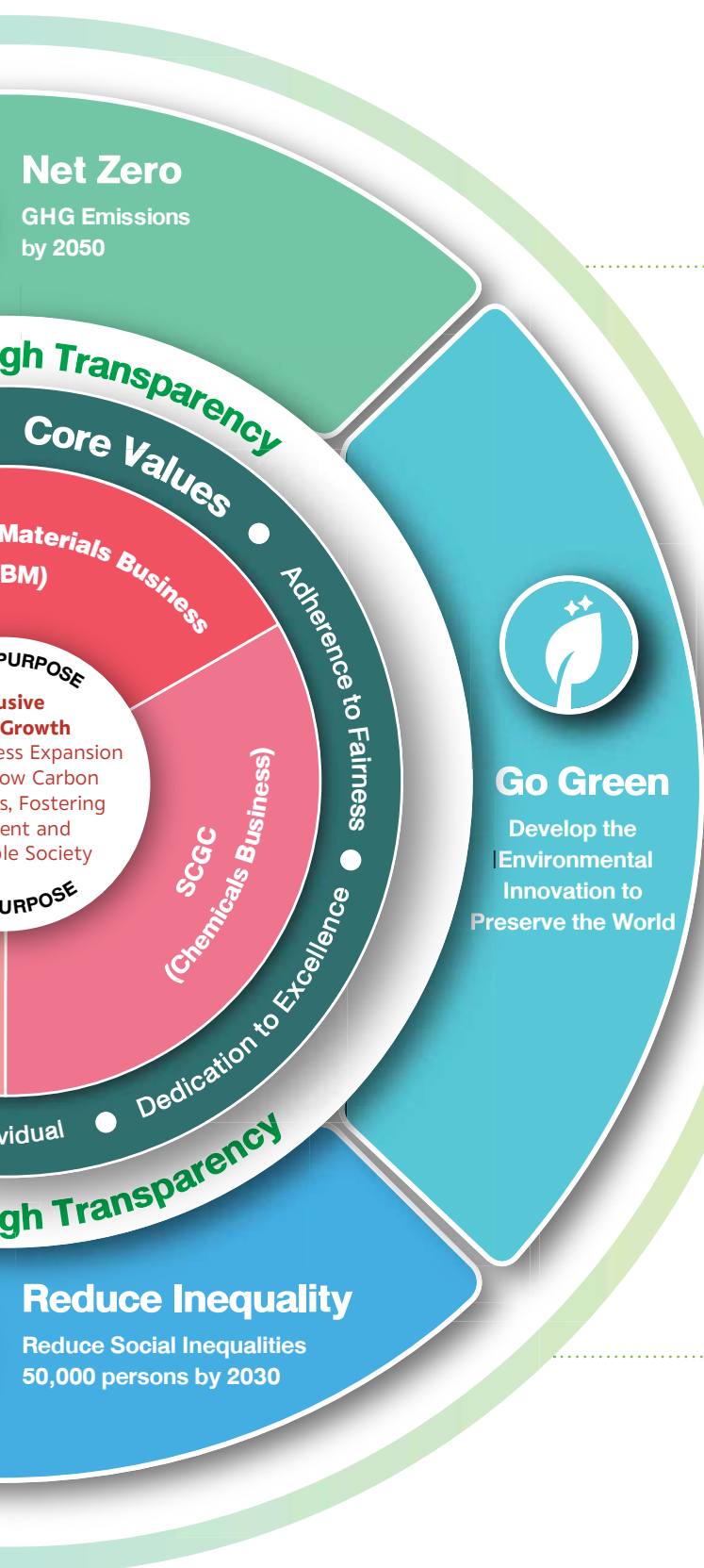
(Packaging Business) SCGP

Plus Trust through Belief in the Value of the Individual



OUR P  
Include  
Green  
Drives Business  
through L  
Innovation  
a Resili  
Sustainab  
OUR P





### Financial Capital

- Revenue from Sales **499,646** Million Baht
- Profit for the Year 2023
- CBM **36%**
- SCGC **38%**
- SCGP **26%**
- CBM **52%**
- SCGC **2%**
- SCGP **15%**
- Others **31%**



### Manufactured Capital

- Production **77.52** Million Tons
- CBM **83%**
- SCGC **10%**
- SCGP **7%**



### Intellectual Capital

- Revenue from Sales of HVA, New Product Development (NPD) and Service Solutions **59.4%**
- Revenue from Sales of SCG Green Choice Products and Services **54.10%**
- Number of Patents **889**



### Human Capital

- Total Employee Turnover Ratio **7.3%**
- Employee Engagement **69%**



### Social and Relationship Capital

- Number of Check Dam **120,000** Units
- Reduce Inequality **20,997** Persons
- Promoting Community Water Management **2,382** Households



### Natural Capital

- GHG Emissions Reduction Compared with the Base Year of 2020 **20.91%**
- Alternative Fuel **24.46%**
- Water Withdrawal Reduction Compared with BAU at the Base Year of 2014 **24.09%**
- Zero Waste to Landfill
- Renewable Materials and Recycled Materials **10.44%**

# Risk Management



Key trends

## Geopolitical Conflicts

The Russia-Ukraine and Israel-Hamas conflicts could escalate into a regional war in the Middle East, which would impact the global economy, energy crisis, and human security and cause disruptions in the value chain and commodity goods volatility.

## Transition to Low Carbon Society

The significant growth of renewable energy has prompted multiple sectors to urgently push for collaboration to establish targets and guidelines for reducing greenhouse gas emissions, keeping the rise in global temperatures under 1.5 degrees Celsius.

## Global Warming-induced Climate Change

Various forms of natural disasters, including severe storms, floods, droughts, and wildfires, including rising sea levels that can affect coastal areas, watersheds, mangrove forests, and water supplies.

Management

- Closely monitor the situation and network with experts in regional conflicts both domestically and internationally to prepare risk management and business continuity plans.
- Analyze trends and utilize tools such as scenario planning to assess the severity of potential impacts and prepare responsive plans in a timely manner.
- Strive to reduce energy costs, increase the proportion of clean energy, and search for alternative clean energy sources, such as napier grass and energy crops.
- Review investment plans, delay non-urgent projects, and focus investments on high-growth businesses.
- Drive green innovation and develop eco-friendly products, services, and solutions in high demand to cater to global megatrends.

- Advance the integrated solar energy business to serve residential, industrial, and industrial estate markets and develop a smart grid-based electricity trading system.
- Establish national and international networks to drive the development and adoption of Carbon Capture, Utilization, and Storage (CCUS) technologies as well as hydrogen energy development.
- Develop products, services, and solutions based on circular economy principles, with a target to increase revenue from Green Choice products to 67% by 2030 as well as push the sales volumes of SCGC GREEN POLYMER™ products to 200,000 tons per year in 2025 and to 1,000,000 tons per year in 2030.
- Contribute to the development of "Saraburi Sandbox," Thailand's first model of a low carbon city.

- Monitor and assess disaster risks to establish contingency and business continuity plans in accordance with the international TCFD standard.
- Establish a collaborative network with government agencies, private organizations, and industries while playing a crucial role in planning and managing water resources and natural disaster issues at both local and national levels.
- Strictly adhere to water management policies through water usage reduction, wastewater treatment, water reuse/recycling, and replenishment efforts.
- Develop IT systems to connect water data with relevant government agencies and create an early warning system to analyze situations and alert relevant agencies.





## Natural Resources and Environmental Management

The problems of pollution and resource scarcity are intensifying due to the continuous increase in the global population, which will impact food security, biodiversity, well-being, and the overall quality of life.

- Evaluate risks and impacts on a quarterly basis and report findings to the management and relevant committees.
- Develop environmental strategies, plans, and goals, such as increasing the use of recycled and renewable materials and zero-landfilling of hazardous and non-hazardous materials from production processes.
- Operate in adherence to ESG 4 Plus: Net Zero - Go Green - Reduce Inequality - Enhance Collaboration Plus Trust through Transparency alongside the application of circular principles through the manufacturing process.
- Actively develop green plastics innovations and innovative plant-based plastics derived from natural materials, such as bio-based ethylene from ethanol.



## Health and Safety

Urbanization, industrialization, the advent of an aging society, air pollution, and environmental conditions pose health and safety risks in both work and daily life.

- Enforce measures requiring all companies, both domestic and international, to adhere to the SCG Safety Framework.
- Elevate the implementation of occupational health and safety standards within the organization and develop standards to support new business models.
- Utilize digital technology to enhance operational efficiency and reduce the risk of accidents, injuries, and occupational illnesses and diseases.
- Foster engagement and promote self-risk identification and management to cultivate a safety culture throughout the organization.
- Establish target and assess safety performance through the Performance Management System (PMS).



## Data Security and Evolving Cyber Attacks

Ever-evolving cybersecurity attacks may result in data leaks, loss, or system downtime, impacting operations, leading to financial losses, and damaging trustworthiness and reputation.

- Establish SCG e-Policy in accordance with ISO 27001 standards.
- Assess cyber risks in computer systems and develop a comprehensive cybersecurity risk management plan covering critical operations both domestically and internationally.
- Continuously foster employee awareness in technology usage through training sessions and various activities, and conduct SCG e-Policy tests annually.
- Develop system recovery plans in anticipation of emergency situations and formulate cyber threat response and mitigation plans in alignment with the NIST Cybersecurity Framework.
- Received ISO/IEC 27001:2022 certification to enhance information security management system efficiency.

# Stakeholders are the Most Important Driving Force to Our Perpetual Sustainable Development.

**Passion for Better**





## Shareholders/ Investors

# Stakeholder Engagement

As stakeholders play a crucial role in every aspect of SCG operations, SCG has assigned responsibility to relevant functions for stakeholder engagement. The Stakeholder Engagement Policy and Guidance for Stakeholder Engagement are formulated for SCG and its subsidiaries to serve as a guidance on stakeholder identification, stakeholder analysis and prioritization using context-based criteria, stakeholder mapping, and the establishment of channels for feedback, recommendations, or complaints from stakeholders. The insights gathered from these engagements are then utilized to determine an approach and format for engagement with both internal and external stakeholders.

Stakeholder engagement process is also an integral component of double materiality assessments, where the evaluation considers the impacts on external society or the environment alongside the impacts on the organization's value. The impact materiality are reported to the SCG Sustainable Development Committee to enhance SCG's sustainability actions and ensure alignment with stakeholder needs.

### Accountability

- Corporate Secretary Office/Investor Relations

### What Matters to Shareholders/Investors

- Shareholder rights
- Returns from operating results and direction of business growth
- Business management and competitiveness
- Transparent and continuous public disclosure of business information
- Fostering good relations with shareholders and investors

### Engagement Approach

- Activities for the communication of SCG's performance
  - Annual General Meeting of Shareholders
  - Quarterly analyst conferences and press conferences
  - Communication of operating results through annual reports
  - Regular communication of company information through online channels
- Activities for the communication of SCG's business strategy and direction
  - Two annual activities for the communication of SCG's strategies and directions for domestic analysts and institutional investors
  - 54 virtual/in-person non-deal roadshows and conferences, consisting of 125 meetings
  - 24 virtual/in-person domestic roadshows and conferences, consisting of 85 meetings.
  - One-on-one meetings/group meetings and conference calls with investors
  - Updates and Q&As
- 7 visits to SCG's core businesses and new businesses

### Issues Raised during Engagement Activities

- Operating results and related financial figures
- Management strategies, progress, and short- and long-term business directions
- Industry overview and competitiveness
- Budget allocation for business activities
- ESG in business operations

### SCG's Response

- Increasing the number of investor relations activities
- Organizing activities to communicate key issues and publishing information on SCG's website regularly
- Preparing monthly reports summarizing key issues from investors for executives
- Considering adding key issues to ensure investors are fully informed
- Addressing questions of investors and analysts via various channels, such as email and telephone

## Value for Relevant Capitals



Financial capital



Human capital



Social and relationship  
capital



## Employees

### Accountability

- Human Resource

### What Matters to Employees

- Employee caring, retention, development, and career growth

### Engagement Approach

- Annual meeting with CEO
- Quarterly meetings with Executives
- Quarterly Leadership Forums
- Employee engagement survey
- Employee engagement activities and enhance good working experience
- CSR and sustainability activities, such as reforestation and blood donation
- Publication of news and updates through internal channels, such as email, LINE groups, and Employee Connect Application

### Issues Raised during Engagement Activities

- Employee caring, retention, development, and career growth
- Performance evaluation and remuneration

### Response

- Respecting and safeguarding human rights
- Fair remuneration management that motivates and attracts talents
- Welfare management, with emphasis on employee well-being throughout their working lives and post-retirement
- Employee development, with updated content, formats, and learning systems, as well as individual development plans
- Attracting talents to join SCG
- Workforce planning and preparation in support of future business
- Development of performance assessment systems that are linked to organizational goals
- Improving HR management services for employees

### Value for Relevant Capitals



Financial capital



Human capital



Social and relationship capital



## Suppliers and Contractors

### Accountability

- Procurement in Business Units/Corporate Procurement Office/Sustainable Supplier Committee

### What Matters to Suppliers and Contractors

- SCG's policies and expectations
- Continuity of business with SCG
- Opportunity for business development and expansion alongside SCG
- Support in the form of new knowledge from SCG

### Engagement Approach

- Conducting regular visits and listening to opinions of suppliers and contractors to co-create operational improvement and business development
- Sharing knowledge and trend updates and promoting ESG practices
  - At least one Supplier Day annually
  - Training sessions such as carbon footprint products (CFP) and corporate carbon footprint assessment
  - Activities to promote safety culture according to Life Saving Rules such as safety hour collection
- Annual supplier and contractor assessments, such as an annual audit of critical suppliers and high ESG risk suppliers, and at least one annual assessment for green procurement registration
- Improving the suppliers and contractors business practices to align with SCG's ESG policy and enhance competitiveness
- Supporting suppliers and contractors for business continuity and safe operations during crises through digital technologies and online systems
- Advancing supplier practices in accordance with SCG's Sustainable Procurement Framework and extending the practices overseas

### Issues Raised during Engagement Activities

- Challenges faced by small- and medium-sized suppliers and contractors in business and ESG capability development

### Response

- Offering knowledge, technology and business opportunities to enhance capabilities for mutually beneficial business operations
- Ongoing and collaborative business improvement and development plans

### Value for Relevant Capitals



Financial capital



Manufactured capital



Human capital



Social and relationship capital



Natural capital

## Customers



### Accountability

- Marketing Units/Sales Channels Units/Business Transformation/Merchandise and Sourcing

### What Matters to Customers

#### B2B

- Profits and sales from various activities
- Development of distributors and teams across different channels
- Network strengthening
- Testing the capabilities of supply chain partners as product distribution centers

#### B2C

- Quality products, services, and solutions that meet needs
- Information on new products, services, and innovations
- Consultation and troubleshooting for products, services, and solutions

### Engagement Approach

#### B2B/B2B2C

- Distributor development plans and weekly/monthly business consultation
- Programs for understanding product information and assessment tests
- Platforms for enhancing management efficiency for construction material stores
- Performance dashboard and data opportunity for strategy formulation, marketing planning, and business operations
- Encouraging collaboration for the co-development of sustainable products, services, and solutions
- Receiving customers' feedback, recommendations through face-to-face communication, LINE, and Call Center
- Offline and online marketing and sales promotion activities

- Sales support tools and sales tracking tools
- Developing technician management models for stores
- Relationship-building activities, such as annual distributor appreciation events

#### B2C

- Showcases of products, services, and innovations
- Online platforms for customers' convenient access to products and services
- Receiving customers' voice through SCG's online channel and website around the clock

### Issues Raised during Engagement Activities

#### B2B/B2B2C

- Marketing and competitor data for the appropriate structuring of prices and activities
- Product and service quality and other issues for further improvement

#### B2C

- Product and service quality and other issues for further improvement

### Response

#### B2B/B2B2C

- Restructuring prices based on strategies, market conditions, and marketing activities to increase sales
- Performing stakeholder data analysis to assess competitor data, sales information, and market shares to inform the development of marketing activities
- Dashboard & Platform & Tools
- Selling Tools & Marketing Program

#### B2C

- Utilizing data from customers to improve products, services, as well as product and service delivery processes

## Value for Relevant Capitals



Financial capital



Human capital



Intellectual capital



Social and relationship capital



## Communities



### Accountability

- Community Engagement Team/CSR Team/Brand Management & CSR Office

### What Matters to Communities

- Operational and environmental management to prevent impacts on communities
- Community engagement for the creation of sustainable shared value
- Communication and the fostering of relationships between SCG and community leaders
- Cooperation of communities

### Engagement Approach

- Monthly community visits to study issues and conduct CSR activities that align with local needs
- Annual open house
- Consultation and assistance across various dimensions of community development
- Fostering collaboration between communities, experts, government agencies, and relevant parties to create positive social impacts
- Campaigns and education for fostering positive behaviors through collaborative circular economy projects
- Monthly health activities in collaboration with local public health volunteers to raise awareness of diseases
- Channels for comments and suggestions from communities, such as LINE groups and Facebook
- Annual community satisfaction survey

### Issues Raised during Engagement Activities

- Collaboration between government agencies, the public, and private organizations in support of CSR projects of communities around SCG's plants and continuous knowledge promotion
- Collaboration between government agencies, private organizations, and communities to create tangible positive impacts
- Boosting income and enhancing the quality of life
- Continuous knowledge enrichment

### Response

- Monthly meetings with the Department of Local Administration and other government agencies
- Bi-weekly site visits to community operations
- Meeting with community leaders and residents to foster participation in community development and ensure harmonious co-existence between communities and factories

## Value for Relevant Capitals



Human capital



Intellectual capital



Social and relationship capital

## Civil Societies, Academia, Opinion Leaders, and NGOs



### Accountability

- Sustainable Development

### What Matters to Civil Societies, Academia, Opinion Leaders, and NGOs

- Leadership for change
- Listening to comments and suggestions from civil society
- Fostering collaboration to drive sustainability issues
- Sharing ideas and perspectives for driving SCG's strategies
- Exchanging experiences in ESG implementation

### Engagement Approach

- Annual opinion panels for operational improvement
- Fostering collaboration in projects that promote social sustainability
- Sharing experience in seminars and training sessions for businesses and educational institutions
- Building awareness of sustainable development and promoting participation through various activities, such as ESG Symposium

### Issues Raised during Engagement Activities

- Leveraging SCG's knowledge and expertise to creating positive impact on social sustainability
- Joining hands with large organizations and networks to effect key changes with respect to sustainability
- Raising awareness and educating society on issues in which SCG holds expertise

### Response

- Serving as role models and mentors for other small- and medium-sized organizations
- Working with various network members to establish mechanisms to significantly contribute to sustainable development

## Value for Relevant Capitals



Human capital



Intellectual capital



Social and relationship capital

# 2023 Opinion Panel

SCG Sustainable Development Committee organized the 13<sup>th</sup> Opinion Panel to welcome suggestions and feedback from experts to enhance its value creation for stakeholders across the value chain and society at large. For the year 2023, SCG strived to apply the principles of Public-Private-People Partnership (4P) to foster inclusive collaboration across all sectors to accelerate Thailand's transition to a low carbon society.

The Opinion Panel, which has been held for more than 13 years, serves as a crucial platform for SCG to understand the impacts of SCG's business operations on the economy, society, and environment. Every year, SCG invites experts from diverse areas of expertise from both the public and private sectors, academia, civil society, and the media to gather feedback and suggestions on material issues. The panel forms as part of SCG's double materiality assessment, particularly in terms of its impacts.

## Panelists



**Pakorn Nilrapunt**  
Secretary-General of the Office of the Council of State



**Areephan Charoensuk**  
Deputy Secretary-General of the Office of the Public Sector Development Commission



**Pornchai Thiraveja**  
Director General of the Fiscal Policy Office



**Asst. Prof. Dr. Jessada Salathong**  
Lecturer at the Department of Mass Communication, Faculty of Communication Arts, Chulalongkorn University



## Suggestions for a Successful Transition to a Low Carbon Society through Public-Private-People Partnership (4P)



### Law and Fiscal Policy

- The panel supported the integration and amendment of laws hindering the transition to a low carbon society and promoted incentives to encourage participation, such as tax deductions to encourage businesses and individuals to make contributions and donations to a community forest or trade carbon credits.
- Existing environmental funds, tax measures, and fiscal policies should be leveraged to maximize efficiency, such as by providing loans or raising funds in a specific area.
- Thailand's competitiveness should be leveraged through short-term mechanisms, such as taxes and green investment measures; medium-term mechanisms for the promotion of low GHG-emission activities, such as tax incentives to promote MRV (Measurement, Reporting, and Verification); and long-term mechanisms, such as carbon pricing mechanism development, for which collaboration between the public and private sectors is indispensable.



### Management and Structure

- "People" are the key transition driver within the 4P framework because it can motivate the public through income generating projects, fostering collaboration with local authorities responsible for environmental management. These authorities, also vulnerable to the benefits and impacts, play a crucial role in ensuring smooth project implementation and potential future expansion.
- Provincial committees should be appointed, with their operation aligned with the original roles and responsibilities of the relevant parties, in orders to achieve goals at both provincial and central administration levels. The private sector should be engaged to help streamline and optimize operations.
- The Saraburi Sandbox Project should be conducted in a continuous and sustainable manner to serve as a use case for other areas and provide recommendations for long-term provincial and national policy development.



### Communication and Awareness Building

- SCG should raise public awareness of climate change so that the public can understand clear goals, while climate change should be established as a national agenda.
- SCG should communicate the principles of 4P and utilize various social media tools to reach stakeholders across all sectors, particularly youth, as well as prioritize target groups for such communications.

# Materiality



## Materiality Analysis

SCG has prescribed an annual analysis and review of materiality, subject to approval by the SCG Sustainable Development Committee. The material topics identified are then used to inform the formulation of business strategies and both short-term and long-term plans as well as the management of impacts on the business, on stakeholders throughout the value chain, including the economy, society, and environment. This is in line with the principles of double and dynamic materiality, which consider both external factors affecting the organization and the impacts of the organization's operation on the external environment.



### 1 Understand the organization's context

- Analyze significant trends that may impact the entire value chain.
- Review ESG issues relevant to the industry by participating in ESG assessments conducted by leading assessors, such as S&P Global, Sustainalytics, CDP, MSCI, and FTSE4Good.
- Invite feedback and suggestions from stakeholders through various stakeholder engagement channels and other avenues, such as the 2023 Opinion Panel and the ESG Symposium 2023.



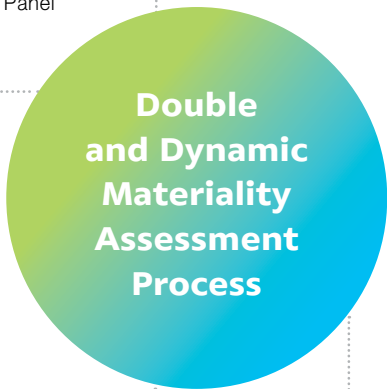
### 2 Identify and assess impacts of financial materiality and impact materiality across the value chain

- Assess potential impacts of climate change, both in terms of transition risks and physical risks, in accordance with the guidelines of the Task Force on Climate-related Financial Disclosures (TCFD).
- Assess potential environmental impacts of SCG's business operations and changing natural risks, leading to both positive and negative outcomes, in accordance with the guidelines of the Task Force on Nature-related Financial Disclosures (TNFD).
- Assess human rights impacts in accordance with a human rights due diligence process.



### 3 Assess the significance of the impacts

- Utilize an organization-wide risk management framework to establish the risk appetite.
- Apply analytics tools, such as sensitivity analysis and scenario analysis, to assess impact severity.



### 4 Prioritize the impacts

- Create a risk map, organized in a 5x5 table format, using the likelihood and impact as criteria for ranking the significance of impacts into three levels: high, moderate, and low.
- Present the materiality to the SCG Sustainable Development Committee for approval and use in planning short- and long-term business strategies, and disclose the information to stakeholders.

### International reference guidelines:

- The Double-Materiality Concept Application and Issues - GRI
- EU Guidelines on Non-Financial Reporting Directive - 2.2 (2019)
- Corporate Sustainability Reporting Directive (CSRD)
- Double Materiality Guidelines - EFRAG
- GRI Standards : GRI 3 - Material Topics 2021
- Stakeholder Engagement Standard : AA1000
- Dow Jones Sustainability Indices (DJSI)
- Integrated Reporting Framework (IR)
- Sustainability Accounting Standards Board (SASB)
- International Financial Reporting Standards by International Sustainability Standards Board (IFRS by ISSB)
- Task Force on Climate-related Financial Disclosures (TCFD)
- UN Sustainable Development Goals (UN SDGs)
- WBCSD ; "Applying Enterprise Risk Management to Environmental, Social and Governance-Related Risks" ; "The Reality of Materiality" ; "Reporting Matters"



## Materiality Matrix 2023

Key  
Material  
Issues

Level  
of impact:  
High



### Key Material Issue

## Climate Resilience



### Sub-issues:

- Growth in renewable energy
- Reduction in fossil fuel consumption
- Increased market demand for low-carbon products
- Development of technologies to accelerate GHG mitigation, Carbon Capture, Utilization and Storage
- Restoration of terrestrial and marine ecosystems as carbon sinks
- Changes in policies, rules, regulations, and requirements to expedite decarbonization

### Risk

As the global temperature may rise by 1.5 degrees Celsius by 2030, concerted efforts to achieve net-zero emissions are essential. This may also involve tightening policy and regulatory, which will require the business sector to adapt.

### Opportunity

The COP28 Conference called for the tripling up the global renewable energy capacity and the doubling down of energy efficiency by 2030, which would serve as a crucial catalyst for a energy transition.

### Financial Materiality

- The impact of rising fossil fuel prices and energy volatility was reduced by increasing the proportion of alternative energy by 24.46% and boosting renewable energy usage by 229 megawatts in 2023.
- Energy efficiency in production processes was improved, leading to a 7.28% reduction in energy consumption in 2023 (compared to the base year of 2007.)
- The proportion of hydraulic cement or low carbon cement increased to 63% in 2023.
- 575 green labeled products were developed in 2023.
- Business opportunities for SCG Cleanergy to expand access to clean energy in Thailand and ASEAN
- Smart technology e.g. SCG Bi-ion, SCG Air Scrubber was utilized to reduce energy consumption within head office buildings by 20-30%.

### Impact Materiality

- Scope 1 and 2 GHG emissions were reduced by 20.91% compared to the base year of 2020.
- Collective efforts for adaptation under the Conserving Water from Mountain to Mighty River for sustainable management of water resource including upstream, midstream and downstream through more than 120,000 check dams
- Community forests in 38 communities were expanded under the Conserving Water from Mountain to Mighty River Project to restore forest health, promote carbon sequestration, and provide sustainable resources for communities.
- Collaborating with local communities and networks for seagrass planting 20 rais, mangrove 1,459 rais as well as reforestation 10,353 rais

### Targets

- Net zero greenhouse gas emissions by the 2050
- Achieving near-term targets certified by SBTi to reduce Scope 1 and 2 greenhouse gas emissions by 25% by 2030 compared to the base year of 2020 and reduce Scope 3 emissions from fossil fuel sold to external customers by 25% by 2021 compared to the base year of 2021
- Decreasing energy consumption by 13% by 2025 compared to the base year of 2007
- Reforestation of 3 million rais equivalent to carbon dioxide reduction of 5 million ton by 2050



**Key Material Issue**

### Circular Economy

**Sub-issues:**

- Resource conservation and efficiency maximization
- Development of circularity-driven products, services, and solutions
- Sustainable and eco-friendly construction that reduces resource consumption
- Plastic waste management and improving recyclability to keep materials in use for the longest time possible

**Risk**

Environmental crises, natural resource depletion, ecosystem degradation, biodiversity loss, pollution, and climate change, as well as policies, regulations, and guidelines will shift and will be rooted more in nature.

**Opportunity**

The integration of the circular economy with the development of advanced technology and innovation will enable SCG to meet the evolving demands of consumers who prioritize green products and better align with the Bio-Circular-Green Economy (BCG).

**Financial Materiality**

- Revenue from sales of SCG Green Choice products, services, and solutions accounted for 54.10% of total sales revenue.
- Revenue from SCG Green Choice sales of products, services, and solutions which directly delivered value to customers accounted for 14.3% of total sales revenue.
- Revenue from sales of SCGC GREEN POLYMER™ amounted to 218,000 tons.

**Impact Materiality**


- Resource consumption was reduced by recycling materials and increasing the use of recycled and renewable materials by 8.55 million tons in 2023.
- Water withdrawal amount was reduced by 24.09% in 2023 compared to the base year of 2014.
- In collaboration with networks placed 397 artificial coral reefs to restore marine ecosystem

**Targets**

- Revenue from sales of SCG Green Choice products, services, and solutions accounts for 66.7% of total sales revenue in 2030.
- Revenue from SCG Green Choice sales of products, services, and solutions which directly deliver value to customers accounts for 33.3% of total sales revenue in 2030.
- Revenue from sales of SCGC GREEN POLYMER™ amounts to 1,000,000 tons in 2030.
- Recyclable, reusable, or compostable packaging materials of SCGP account for 100% of all packaging in 2025.
- Use of recycled and reusable materials is increased to 8 million tons in 2025.
- Water withdrawal amount is reduced by 23% in 2025 compared to the base year of 2014.

**Key Material Issue**

## Health and Safety



**Sub-issues:**

- Occupation health and workplace safety
- Transportation safety
- Development of products, services, and solutions for health and well-being

**Risk**

Work-related accidents and risky behaviors that may lead to accidents, as well as near miss incidents and unsafe actions and conditions, can result in injuries and fatalities. Risks of diseases and illnesses are also increased by environmental degradation.

**Opportunity**

SCG can expand the Smart Living Solutions business by developing safe materials for residential use, offering solutions that enhance living standards and improve quality of life, as well as promoting good health, well-being, and safety in daily life.

**Financial Materiality**

- Working without injuries and fatalities, workdays lost, and work-related illnesses and diseases
- Safe travel and transportation without road accidents
- Developing products, services, and solutions that promote well-being and quality of life, such as Bi-ion, which improves indoor air quality and eliminates pathogens and PM 2.5; providing building and living care consulting services to give suggestions on integrated healthcare and residential projects for the elderly, children, and people of all ages based on Evidence-Based Design principles; and offering solutions for the monitoring and care of the elderly and patients

**Impact Materiality**

- Establishing safety management systems, creating safe work environments, and providing knowledge to employees and suppliers
- Increasing access to healthcare systems for remote patients through tele-monitoring and telemedicine technologies to promote well-being

**Targets**

- Zero fatalities among employees and suppliers
- Zero lost time injury rates for employees and suppliers, both domestically and internationally, by 2024
- Zero work-related illnesses and diseases among employees
- All companies under SCG pass the Safety Performance Assessment Program (SPAP) at the Standard level and higher.

**Other Reported Material Issues**

Level of Impact:  
**Medium**

Materiality	Climate Resilience	Circular Economy	Health and Safety
Sustainable Products and Services	•	•	•
Customer Experience Creation	•	•	•
Sustainable Value Towards Suppliers	•	•	
Water Management	•	•	
Air Quality Management	•		•
Biodiversity and Ecosystem	•		
Human Rights	•		•
Employee Care and Development	•		•
Community and Social Development	•	•	•



# Investments for Sustainable Development



Reduce GHG Scope 1 & 2 Emissions **25%** by 2030



"Plant Beats Heat Project" Plants Trees to Absorb **5 MT CO<sub>2</sub>** by 2050



Investment **4,743 Million Baht**  
Expense **1,070 Million Baht**

Invest in energy efficiency, renewable energy projects, invest in renewable energy businesses, and R&D in deep technology.



Increase Revenue from Sales to **67%** by 2030



**100%** SCGP Recyclable Packaging by 2025



Investment **268 Million Baht**

Expense **1,851 Million Baht**

Actively develop the environmental innovation, and expand circular economy businesses.



Reduce Social Inequalities **50,000 Persons** by 2030



Build **150,000 Check Dams** by 2030



Investment **283 Million Baht**  
Expense **137 Million Baht**

Create jobs for communities and SMEs by developing in-demand skills.



Expense **28 Million Baht**  
Contribute to the other organizations in national, ASEAN, and global to drive ESG Practices towards Low Carbon Societies.

Plus Trust through Transparency

Investment **0.55 Million Baht**

Expense **6.26 Million Baht**

Develop an ESG disclosure platform to enhance data integrity.

# Materiality Management



Material issues	Management
 <p><b>Climate Resilience</b></p>	<ul style="list-style-type: none"> <li>• Set GHG emissions reduction targets in line with the Paris Agreement to keep the global temperature rise below 1.5 degrees Celsius, and aim for net zero emissions by 2050.</li> <li>• Develop measures to continuously drive energy efficiency across all business units.</li> <li>• Prepare and disclose climate-related data according to international guidelines (TCFD).</li> <li>• Facilitate oversight of climate actions by the Board of Directors and top management during their quarterly meetings.</li> <li>• Drive and implement initiatives through SCG Climate Change &amp; Energy Committee, during their quarterly meetings.</li> </ul>
 <p><b>Circular Economy</b></p>	<ul style="list-style-type: none"> <li>• Reduce waste at source through product design, material selection, and production efficiency optimization.</li> <li>• Oversee SCG's external waste management and chemical management to ensure compliance with regulations. Manage waste efficiently through eco-friendly processes in adherence to international cooperation frameworks.</li> <li>• Foster five success factors for a circular economy: awareness building, cooperation building, requirement formulation, innovation, and the development of management and assessment systems.</li> </ul>
 <p><b>Health and Safety</b></p>	<ul style="list-style-type: none"> <li>• The Workplace Safety Committee and the Transportation Safety Committee establish policies, strategies, short-, medium-, and long-term action plans, targets, and indicators. They actively monitor the achievement of targets, oversee plan implementation, and analyze outcomes to continuously enhance effectiveness.</li> <li>• Report occupational health and safety performance to the top management and the Board of Directors on a quarterly basis.</li> <li>• Establish mechanisms for regular self-auditing to encourage ownership and self-discipline.</li> <li>• Foster a collaborative management network, develop experts in each business unit, and enrich the knowledge and capabilities of employees and contractors in order to bring about the exchange of knowledge and technology for collaborative risk management.</li> </ul>

Material issues	Management
 <p><b>Sustainable Products and Services</b></p>	<ul style="list-style-type: none"> <li>• Use innovation and digital technology to optimize operational efficiency, product development and cost reduction.</li> <li>• Adopt circular economy principles to optimize resource utilization and reduce waste and the consumption of energy and water.</li> <li>• Review capital expenditures to accelerate transformation.</li> <li>• Apply eco-design thinking from the design process to production, packaging, safe usage, and waste minimization, and reuse.</li> </ul>
 <p><b>Customer Experience Creation</b></p>	<ul style="list-style-type: none"> <li>• Analyze and monitor customer experiences, ranging from customer’s problems, needs, purchasing behaviors, and use of products, services, and solutions, and conduct satisfaction surveys on products, services, and solutions.</li> <li>• Adopt digital technology to support services provided to business partners, suppliers and all customer groups.</li> <li>• Connect customer experience with online channels and service centers to ensure maximum convenience and customer satisfaction.</li> <li>• Offer innovative products, services and solutions that meet customer needs sustainably.</li> </ul>
 <p><b>Supplier Management for Sustainable Value</b></p>	<ul style="list-style-type: none"> <li>• Conduct risk assessment and certification of every supplier annually on the basis of enterprise risk management frameworks and operate in accordance with the “SCG Sustainable Procurement Framework,” which addresses ESG aspects, alongside spending analysis.</li> <li>• Segmentation of suppliers into four groups: tier 1 suppliers, critical suppliers, high potential sustainability (ESG) risk suppliers and critical non-tier 1 suppliers.</li> <li>• Formulate plans to continually and effectively enhance suppliers' capacity in sustainable business addressing ESG issues, such as through Contractor Safety Management and SCG Transportation Safety : Sustainability Program.</li> <li>• Foster business collaboration in accordance with ESG practices by regularly communicating with supplier through activities, such as seminars and workshops.</li> <li>• Establish a committee to advance knowledge and competency of staff in the procurement, supply and logistics, as well as organize sharing of knowledge and practices with public and private sectors procurement bodies.</li> </ul>
 <p><b>Water Management</b></p>	<ul style="list-style-type: none"> <li>• The Water Management Committee defines guidelines and strategies for integrated water management.</li> <li>• Assess water-related risks and impacts on a quarterly basis and report to the Environment Excellence Committee, SCG Sustainable Development Committee and SCG Risk Management Committee.</li> <li>• Conduct water scenarios analysis to forecast water volumes in external sources, in conjunction with management assessment, business continuity management (BCM), and business contingency plans (BCP) for water.</li> <li>• Monitor the water situation and trends and undertake water resources management efforts in collaboration with the public sector, industries and relevant stakeholders.</li> </ul>
 <p><b>Air Quality Management</b></p>	<ul style="list-style-type: none"> <li>• The Taskforce on Air Quality Management, comprising representatives from Business Units, jointly establishes strategies, targets, and action plans.</li> <li>• All business units adopt continuous emission monitoring systems (CEMs) instead of spot checks and arrange for verification by external parties.</li> <li>• Train air quality supervisors for air quality management according to the regulations of the Department of Industrial Works.</li> <li>• Organize plant visits for community members to foster good ties and reassure the community of the factory management.</li> </ul>



## Material issues

## Management



### Biodiversity and Ecosystem

- The Quarry Rehabilitation and Biodiversity Working Group provides oversight to ensure compliance with international standards on biodiversity management.
- Foster “Net Positive Impact” in all relevant processes.
- Establish a quarry rehabilitation fund for research into rehabilitation, handover of mining zones after closure, and other social activities.
- Communicate with the community and external entities to effectively communicate SCG’s initiatives in ecosystem conservation and biodiversity preservation.



### Human Rights

- Announce and review SCG Human Rights Policy and SCG Diversity and Inclusion Policy in line with United Nations Global Compact (UNGC), the International Labor Organization (ILO) Declaration on Fundamental Principles and Rights at Work, Organization for Economic Co-operation and Development (OECD), and other international standards, as well as drive the implementation of such policies through SCG Sustainable Development Committee.
- Establish a unified organization-wide risk management framework and carry out human rights due diligence process in all facets in a proactive manner to prevent human rights violation.
- Establish targets and indicators to monitor human rights performance.
- Put in place mechanisms for handling complaints and establish remediation measures through stakeholder engagement in case of human right violation.
- Communicate and organize training to develop awareness, knowledge, and understanding for employees at all levels.



### Employee Care and Development

- Appoint BU Committees, tasked with providing support and ensuring each employee undergoes suitable knowledge and competency development according to their roles and responsibilities.
- Develop flagship programs and policy-based programs, such as the ESG Leadership Program and professional development programs, and formulate individual development plans for key talents.



### Community and Social Development

- The CSR Committee for Sustainable Development, consisting of members of the Board of Directors and SCG top executives, is responsible for formulating policies and guidance on sustainability-oriented social development activities.
- SCG Foundation carries out a key mission focusing on maximizing human capability and equipping them with knowledge and integrity.
- The Community Relations Unit carries out activities that enhance the potential of neighboring communities of SCG’s operational sites to attain better life quality and sustainable self-reliance.

# SCG's Commitment to Sustainable Development Goals

UN's Sustainable Development Goals serve as a blueprint that all sectors must strive for in order to achieve peace and ensure the prosperity of humanity and the world, both at present and in the future.

SCG strives to generate economic growth alongside the conservation of natural resources and the environment

as it believes that the business sector plays a critical role in driving society as a whole towards achieving the United Nation's Sustainable Development Goals (SDGs).

To prioritize SDG, SCG analyzes its activities across the value chain, taking into consideration positive and negative impacts of its operations on people

and the environment, as well as business drivers, materiality issues, and its business strategies. The SDGs are also assessed in relation to SCG's operational targets and business capabilities so to accelerate the achievement of such goals and maximize positive economic, social, and environmental impact.

## Key Sustainable Development Goals for Business



### Good Health and Well-Being

Promote good health and safety in the workplace by continuously implementing risk control measures and cultivating safety habits and a total safety culture. The goal is to ensure healthy lives and well-being for all.



### Affordable and Clean Energy

Promote and increase the use of alternative fuel and enhancing energy efficiency through the best available technology, reducing reliance on fossil fuels, and increasing the use of alternative energy.



### Decent Work and Economic Growth

Promote inclusive and sustainable economic growth, with emphasis placed on decent, equitable, fair, and productive employment.



### Industry, Innovation, and Infrastructure

Put a premium on applying innovation and technology to elevate operations, enhance long-term competitiveness, and promote inclusive and sustainable industrialization.



### Responsible Consumption and Production

Apply the principles of circular economy to business operations to enhance resource efficiency, decrease risks of resource shortages in the future, and minimize environmental impacts.



### Climate Action

Pledge to adapt, take action across various dimensions to reduce greenhouse gas emissions, and join forces with all sectors to enhance society and communities' adaptability and capabilities to combat climate change and its potential impacts.



## Key Sustainable Development Goals for Better World



### Reduced Inequalities

Place emphasis on leveraging capabilities to solve inequalities and increase opportunities for education, employment, and access to healthcare for people.



### Sustainable Cities and Communities

Strive to make cities and communities inclusive, safe, resilient, and sustainable.



### Life Below Water

Conserve and sustainably use the oceans, seas, and marine resources to prevent and reduce marine pollution as well as the impact of climate change.



### Life on Land

Promote sustainable use of terrestrial ecosystems to protect and restore ecological balance and halt biodiversity loss.



### Peace, Justice, and Strong Institutions

Focus on creating a peaceful and inclusive society, which is a cornerstone for sustainable development.



### Partnerships for the Goals

Seek to strengthen collaboration for the implementation of sustainable development.

## Targets

\*For Thailand operations

### Environment



**GHG Scope 1 & 2 Emissions Reduction by 25%**

by 2030 compared with the base year of 2020

**Net Zero emission** by 2050



**Water Withdrawal Reduction by 23%**

by 2025 compared with BAU at the base year of 2014



**Hazardous and Non-Hazardous Waste to Landfill to Zero every year\***



**Dust Emissions Reduction by 8%**

by 2025 compared with BAU at base year of 2020\*



**Use of recycled and reusable materials**

**8 million tons** by 2025



**SCGP packaging are recyclable, reusable, or compostable**

**100%** by 2025



**Tree Plantation**

**3 million** raise by 2050 to capture GHG and restore ecological balance

### Social



**Zero Fatality work-related injury of employees and contractors from Workplace**



**27% Female in all management positions** by 2025



**Zero Human rights violation case**



**Reduce social inequalities for 50,000 persons** by 2030



**Zero Lost time injury frequency rate of employees and contractors**



**Zero Fatality work-related injury of employees and contractors from Travelling and Transportation**

### Governance and Economic



**Revenue from sales of SCG Green Choice products, services, and solutions**

**66.7%**

by 2030 compared to the total revenue from sales



**Sales volume**

**1,000,000**

tons/year by 2030



**Suppliers being conducted ESG risk assessments**

**100%**

of suppliers with procurement spending over million baht



**Ethics e-Testing learned and passed by employees**

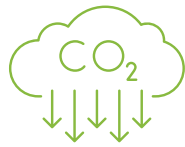
**100%**



# Sustainability Performance in 2023



## Environment



### GHG Scope 1 & 2 Emissions Reduction

(compared with the base year of 2020)

**7.16** million tons carbon dioxide

**20.91%**

2023 Target



### Alternative Fuels

**24.46%**



### Dust Emission Reduction\*

(compared with BAU at the base year of 2020)

**7.70%**



### Use of Recycled and Renewable Materials\*

**8.55**

million tons



### SCGP Products are Recyclable, Reusable, or Compostable

**99.70%**



## Social



### Number of Fatality Work-Related Injury from Workplace, Travelling and Direct Transportation

employee/contractor

**1/6** case

2023 Target



2023 Target

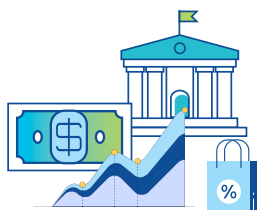


### Lost Time Injury Frequency Rate

employee/contractor

**0.276/0.231**

cases/1,000,000 hours worked



## Governance & Economic



### "SCG Green Choice" Products and Services

**54.10%**

of revenue from sales

2023 Target



### Circular Economy Products

**32.86%**

of revenue from sales



### High Value Added Products and Services HVA

**33.6%**

of revenue from sales



### Sales volume

**218,000** tons





### Water Withdrawal Reduction

(compared with BAU at the base year of 2014)

**38.75**

million cubic meter

**24.09%**



### Recycled Water

**13.14%**



Achieve 2023 Target



Not Achieve 2023 Target

\* For Thailand Operations



### Hazardous Waste to Landfill\*

**0** ton

2023 Target



**0** ton



### Non-Hazardous Waste to Landfill\*

**0** ton

2023 Target



**0** ton



### Environmental Expense and Investment\*

**3,928**

million baht

**0.78%**

of revenue from sales



### Tree Plantation

**11,832** rai



### Occupational Illness Frequency Rate

employee

**0.000**

cases/1,000,000 hours worked

2023 Target



**0** case



### Logistics Drivers Trained from "SCG Skills Development School"

**15,355**

persons



### Social Contribution

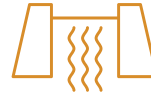
**397**

million baht



### Female in all Management Positions

**30.6%**



### Number of Check Dam

**120,000**

units



### Human Rights Violation

**1** case



**0** case



### Promoting Water Management for Community

**2,382**

households



### Reduce Social Inequalities

**20,997**

persons

2023 Target



**5,000** persons



### Carbon Label Certified

**575**

items



2023 Target



**100** %

### Suppliers Processed through ESG Risk Assessments

**100%**

of suppliers with procurement spend over million baht



### ESG Investment

**5,295**

million baht



### Employees Learned and Passed Ethics e-Testing

**100%**



### Research and Innovation Spending

**6,701** million baht

**1.3%**

of revenue from sales



### Green Procurement Purchased

**9,726**

million baht



### Contributions to Organizations

**27.81**

million baht

# Partnership Synergy Towards Sustainability

SCG fosters collaboration with various networks and partners at national, regional, and global levels to sustainably create value for society at large.

## World Business Council for Sustainable Development (WBCSD)



A WBCSD member since 2000, SCG has adopted the WBCSD standards as a model for sustainable business operations and shared knowledge with other companies in Thailand. In 2023, SCG joined several collaborative initiatives, including Climate Action, Circular Products & Materials Pathway, and Forest Solutions Group.

## Thai Cement Manufacturers Association (TCMA)



SCG has taken part in elevating Thailand's cement industry and developing the Thai Cement and Concrete Industry Roadmap Toward Net-Zero Emissions by 2050. The Company has also declared its commitment to the Public-Private-People Partnership (4P) to develop the Saraburi Sandbox, Thailand's first model city for low carbon emissions.

## Public Private Partnership for Sustainable Plastic and Waste Management (PPP Plastic)



SCGC (Chemical Business) has collaborated with the Plastic Industry Club of the Federation of Thai Industries, the Thailand Business Council for Sustainable Development, the Plastics Institute of Thailand, as well as 43 public and private organizations to develop knowledge and introduce new innovations to maximize efficient plastic recovery and utilization in line with circular economy principles.

## United Nations Global Compact (UNGC) / UN Global Compact Network Thailand (GCNT)



SCG was among the first Thai companies to join the GCNT and has been a member since 2012. SCG supports sustainable practices and takes part in driving the GCNT and expanding the UNGC principles in Thailand, with the aim of collectively advancing the SDGs by supporting operations and reports annually according to the UNGC Communication on Progress at an advanced level.

## Thailand Institute of Packaging and Recycling Management for Sustainable Environment (TIPMSE), Federation of Thai Industries



SCGP (Packaging Business) has become a TIPMSE member to drive the adoption of Extended Producer Responsibility (EPR). SCGP also serves on a committee drafting the Sustainable Packaging Management Act and implements projects, such as the Voluntary EPR "PackBack Project" in Chonburi.

## Reoriented Holistic Health Service Delivery Institution (RHSDI) and Yuenyen Social Enterprise



SCG promotes access to healthcare for vulnerable groups to reduce disparities through tele-monitoring and telemedicine. In 2023, a total of 1,220 patients received care through the program in five pilot areas, namely Lopburi, Phetchabun, Udon Thani, Bangkok, and Ratchaburi.

## Global Cement and Concrete Association (GCCA)



SCG has taken part in exchanging knowledge and experiences with GCCA members worldwide to advance and decarbonize the cement and concrete industry by integrating the GCCA's guidelines into operational plans, such as by utilizing alternative energy and renewables-based electricity in production and by developing and promoting the use of low carbon cement in both public and private construction projects.

## Ellen MacArthur Foundation (EMF)



SCGC (Chemical Business) has joined the foundation as a member to build knowledge, expand the circular economy network internationally, apply the knowledge to business practices, and disseminate it to all sectors across Thailand to ensure a sustainable transformation.

## Earth Agenda Foundation



SCG has supported the Earth Agenda Foundation's Love the Sea Project in collaboration with the Department of Marine and Coastal Resources, the Ministry of Natural Resources and Environment, and the Faculty of Veterinary Science, Chulalongkorn University. Utilizing CPAC 3D Printing Solution technology to create artificial structures for growing young corals, thus providing habitats for marine species and restoring balance to the marine ecosystem. From 2019 to 2023, a total of 397 artificial reef structures were installed in six provinces.



## Partnerships in Practice: Driving a Low Carbon Society through Collaboration

### ESG Symposium 2023

SCG organized ESG Symposium 2023 in collaboration with all sectors, including government agencies, private organizations, and civil society, to raise awareness of the importance of sustainable development and foster cooperation to transition the country towards a low carbon society under the theme "Accelerating Change Towards a Low Carbon Society." Four collaborative actions were proposed to the Prime Minister:



1. NDC Accelerator-a road map for reducing greenhouse gases emission in the country
2. Energy Transition-unlock the limitations of the transition to clean and sustainable energy
3. Circular Economy Acceleration-promote a circular economy as a national agenda
4. Just Transition-transitioning to a low carbon society without leaving anyone behind



### Rayong Less-Waste Project

As part of the PPP Plastic Project, SCG, in collaboration with the Plastic Industry Club of the Federation of Thai Industries, has chosen Rayong as a blueprint for integrated plastic and waste management. This initiative promotes at-source plastic and waste separation and seeks to generate value and income according to circular economy principles in collaboration with 68 communities and local administration agencies and more than 200 educational institutions. Since 2018, 2,900 tons of plastic waste has been recycled, generating over 15 million baht in revenue and contributing over 3,000 tCO<sub>2</sub>eq in avoided emissions.

### Digital Telemedicine Project

Through DoCare, SCG has collaborated with the Reoriented Holistic Health Service Delivery Institution (RHHSDI) and Yuenyen Social Enterprise to develop an innovative tele-monitoring and telemedicine system designed for three target groups: preventive care, chronic care, and palliative care patients. This initiative is aimed at proactively monitoring health and enhancing prevention and treatment effectiveness. In 2023, 1,220 patients received care in five provinces: Bangkok, Ratchaburi, Phetchabun, Lopburi, and Narathiwat.







**LOW**  
Carbon  
Cement

**LOW**  
Carbon  
Cement

**LOW**  
Carbon  
Cement



# ESG FOCUS

**Energy Transition  
Innovation and Collaboration  
towards Net Zero**

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**Low Carbon Products**

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**Saraburi Sandbox: Building  
a Blueprint for a Low Carbon  
City through the Public-  
Private-People Partnership  
(4P) Model**

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**From Mountains  
to Mighty Rivers Project:  
From Collaboration  
to Sustainability**







# Energy Transition

## Innovation and Collaboration towards Net Zero

SCG has demonstrated its commitment to take climate action. In the latest development, SCG joins the Science Based Target initiative (SBTi), established by Carbon Disclosure Project (CDP), the United Nations Global Compact, World Resources Institute (WRI) and World Wide Fund for Nature (WWF) to promote and conduct validation of emissions cut by entities with professed near and long term target using science base approach to keep global temperature rise within 1.5 degrees Celsius in line with the Paris Agreement.

Previously, SCG announced GHG reduction target in Scope 1 and 2 by at least 20% by 2030. In 2023, SBTi validated SCG's revision of near-term target of scope 1 and 2 to 25% by 2030 from base year 2020, as well as GHG scope 3 reduction target from the use of sold fossil fuels 25% by 2031 from base year 2021.

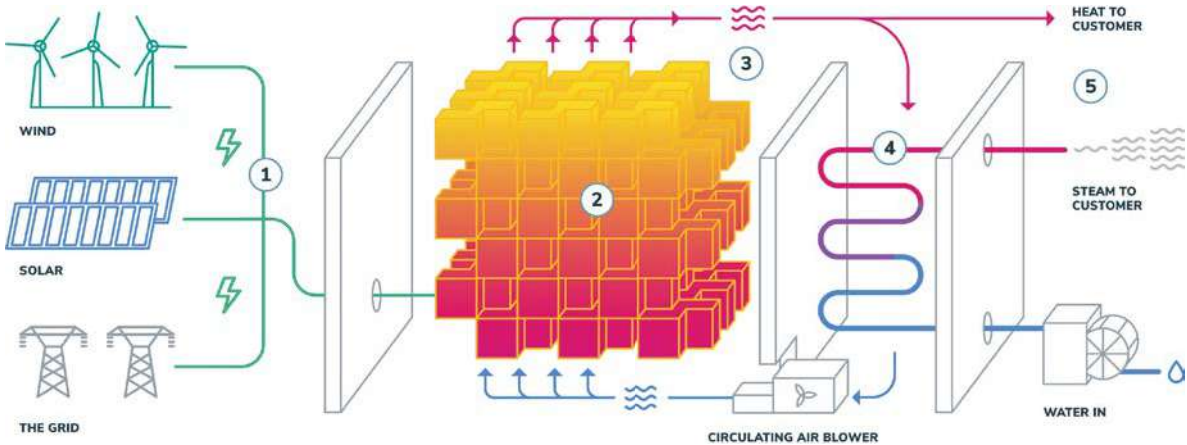


SCIENCE  
BASED  
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

These new and more ambitious targets challenge SCG to step up innovation and adoption of energy transition technology, in tandem with collaboration with supplier to reduce GHG scope 3.





Source : [www.rondo.com](http://www.rondo.com)

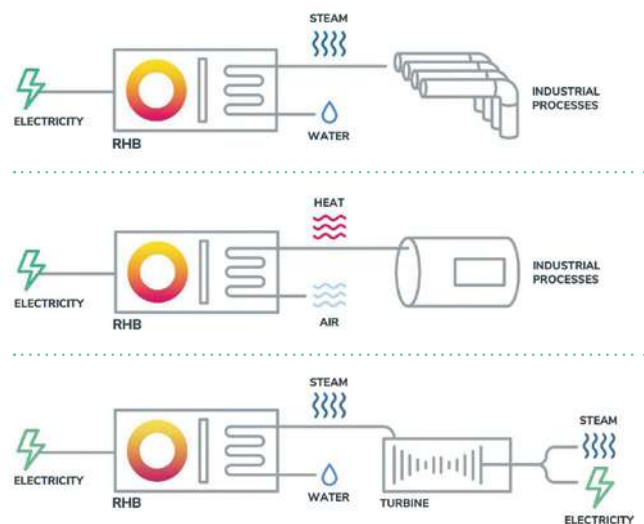
## Rondo Heat Battery, zero-emission industrial heat and power

Rondo Heat battery captures intermittent power to store as heat in thermal media and delivers at the exact temperature and pressure to meet industrial facility demands. Rondo Heat Battery is invented by a group of US-based startups. SCG has invested alongside global leaders and leading climate investors. Apart from that Rondo, in partnership with SCG, announced current Heat Battery storage production capacity of 2.4 GWh/year in 2023.

Rondo Heat Battery uses electric heating elements, like those in a toaster or oven, to turn power when it is available into high-temperature heat up to 1,500°C. When heat is needed, air flow is blown through the brick stack. Heat at the outlet is delivered at exactly the desired temperature via automated AI patented controls.

For example, food and beverage industry requires steam for their process. The conventional boilers that use fossil fuel such as coal, fuel oil or natural gas incurs GHG emissions. Rondo Heat Battery enables a simple, practical switch to zero-emission electricity as the source of continuous high-temperature heat for processes and offers a 50+ year lifetime, compared to the conventional boilers that normally have a 5 year lifetime.

SCG is in the process of evaluation and planning to demonstrate Rondo use case in Thailand in 2024, in support of BUs within SCG which consist of numerous factories that need hot air or steam in production processes. SCG commits to help industrial sectors to decarbonization that leads the transition to a sustainable future.



Source : [www.rondo.com](http://www.rondo.com)

## Smart Grid

SCG Cleanergy has developed Smart Grid energy management system. SCG Cleanergy Platform connects clean energy and carbon credit trading, standing ready to support Thailand's private sector to use clean energy to achieve Net Zero target along the ESG pathway.

Smart Grid technology was invented to address and manage glitches and mismatch within the energy ecosystem. For example, some factories have a big appetite for clean energy but have limited spaces or with spaces unsuitable for clean energy generation. At the same time, other factories may have the eligible space but with little need or no economic incentives for clean energy.

In 2023, SCG Cleanergy installed Smart Grid system for 11 Saha-Union Group factories, in response to diverse levels of clean energy demand of individual plants. In addition, SCG Cleanergy helps address the challenge of space for installation of solar panels in some factories that do not have large open ground, nor adequate rooftop space.

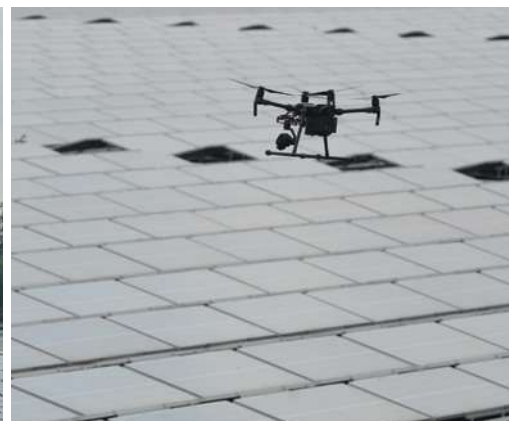
In the initial phase, SCG Cleanergy installed Solar Rooftop panels for factories with enough rooftop space; and solar farms on empty spaces within factory vicinity. Solar outputs are fed into a transmission lines network connecting these 11 factories, as well as connected to the Provincial Electricity Authority's grid. All electrical outputs are managed by SCG Cleanergy Platform to achieve optimal flexibility and responsiveness.



For factories that produce for export to the European Union countries that need renewable energy to reduce carbon footprint, the Platform shall manage distribution of solar energy to them at a higher proportion than others. The Platform can also generate monthly data of clean energy consumption and carbon credit to industrial user clients.

Smart Grid innovation therefore optimizes clean energy output. All client factories get to use the total of solar energy produced. It offers flexibility of transmission to factories with peak demands during certain hours or period.

The project to install solar energy generation for Saha-Union Group and Smart Grid energy management system through SCG Cleanergy Platform has the capacity to generate 7,854,600 kWhs per year, at RE Ratio of 17% and able to reduce GHG emissions 3,776 tCO<sub>2eq</sub> per year.







## Supplier Collaboration on Scope 3 Reduction

SCG is fully aware that climate action is not confined to internal organization management, but must be expanded into collaboration with suppliers, business partners, client, and external stakeholders.

From 2020 following demand for disclosure of GHG scope 3 emissions data, SCG started data collection for both its domestic and international business operations. Evidence shows the most important emission sources have to do with procurement of raw materials from suppliers and business partner to make SCG products.

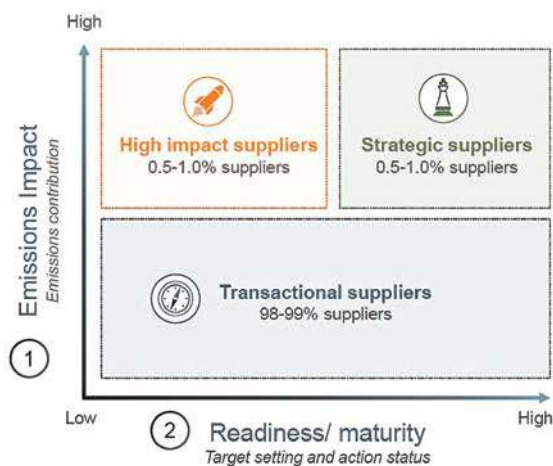
In 2022 SCG organized Supplier Day inviting suppliers and business partners to dialogue on the key issue of GHG emissions data disclosure of raw materials and fuel from suppliers. At the Supplier Day, SCG proposed a workplan leading to implementation consisting of:

1. Announce environmental and climate change management policy.
2. Collect and report GHG emissions data, starting from Scope 1, 2 and 3 (if available) or carbon footprint product from suppliers.

3. Disclose GHG emissions data and environment management to stakeholders.
4. Organize any activities, workplans, or projects to reduce GHG emissions.
5. Set GHG reduction targets and disclose to stakeholders.
6. Invite other organizations in supply chain to join in GHG reduction.

On 14<sup>th</sup> July 2023 SCG followed up by inviting the pilot 12 suppliers to a Supply Chain Decarbonization Program to drive GHG management across the value chain. The forum sought to provide knowledge and understanding about climate change, GHG data collection, workshop on calculation of GHG emissions and drafting appropriate workplan to suit the contexts of individual partners and suppliers with varying levels of capacity and preparedness.

In addition, SCG conducts Supplier Segmentation according to WBCSD principles for more flexibility and efficiency in GHG management. That led to formulation of 2024 joint workplan with suppliers which includes regularly follow up on progress of implementation. Alongside, SCG uses of in-depth data and information collected for supplier assessment and segmentation according to their readiness/maturity and emission impact. From segmentation, SCG will design or guide the implementation suit individual suppliers most efficiently.



Push suppliers towards more readiness & maturity

Up- / downgrade suppliers based on performance

- Strategic suppliers > Partner to pioneer
  - High impact suppliers > Upskill to steer
  - Transactional suppliers > Make aware to activate
- Near-term focus

# Low Carbon Products



At the 27<sup>th</sup> Session of the Conference of the Parties of the UNFCCC (COP27) in Sharm El-Sheikh, Egypt during 6<sup>th</sup>-18<sup>th</sup> November 2023, the Global Cement and Concrete Association (GCCA) endorsed Thailand's Net Zero Cement and Concrete Roadmap, the first country to have been thus endorsed.

The roadmap has its origin in the collaboration pledge of Thai Cement Manufacturers Association, (TCMA), Thailand Concrete Association, (TCA) and public agencies on Green House Gas emissions cut innovations.

Cement and concrete industries are ranked among top emission sources. If operators find ways or innovations, the impact can be pivotal.



## SCG Hybrid Cement and its Green Certification

SCG Hybrid Cement has been approved as environmentally friendly products with the following climate and environment related certifications:



Green Choice



Carbon Reduction Label



Green Label



Carbon Footprint Label



Carbon Footprint Reduction Label



so called low carbon cement to substitute conventional, high-emission cement, to achieve the same strength, with equal or higher resilience than Portland cement.”

SCG Hybrid Cement is the trade name. Within the industry, it is known as hydraulic cement, which means other materials are used in its mixture to partially substitute clinker.



The reason cement production is one of the most challenging in relation to GHG emissions cut is because making clinker requires high temperatures to burn raw materials, the most emission-intensive step in the production process. SCG started researching into this matter since 2015 for solution to use less ratio of clinker, as this will address emissions directly at source.

The result is SCG Hybrid Cement for structural work. Application of materials science has helped to reduce the clinker ratio needed from previously 92% to just 87%. The concrete is stronger than most other structural cement, reducing GHG emission from less clinker, and from use of alternative fuels including RDF, solar energy.

With this successful development outcome complete, to have a critical mass of construction projects using climate-friendly cement remains a continuing challenge for stakeholders to make hydraulic cement widely known and used, as well as advocating for this as building material standard for public and private sector projects, to move the entire industry along the path towards sustainability.

“We will stimulate use of hydraulic cement instead of conventional cement quickly,” Chana Poomee explained SCG’s determination to generate the momentum. In 2023, TCMA together with SCG and 25 partner organizations set a production target of hydraulic cement for emissions cut of 1 million tCO<sub>2</sub>eq.

Most importantly, SCG does not just stop its R&D work at this first hybrid formula. Work is in progress to develop hybrid formula 2, 3 and more to reduce the ratio of clinker in cement, to go further in GHG emissions cut in the future.



## Decarbonization Cement

SCG is the first TCMA member to successfully come up with innovation and commercialization of hybrid cement. The production technology reduces resource and energy use by 30 percent, and cutting GHG emissions by 50 kgCO<sub>2</sub>eq per ton.

TCMA Chairman, and SCG Chief Sustainability Officer, **Chana Poomee** explained: “we worked together to drive a low carbon society through the cement and concrete industry to develop innovations such as special-formula hydraulic cement





**SCGC GREEN POLYMER™**  
The Green Solutions for the Environment

- REDUCE**  
Enhancing Material for Eco-efficiency
- RECYCLABLE**  
Design for Recyclability
- RECYCLE**  
Mechanical & Advanced Recycling
- RENEWABLE**  
Bioplastics

**SMX TECHNOLOGY**

**High Performance HDPE Resins**  
by SMX™ Technology

## High Quality Resin: The Sustainability Challenge

Similar to cement which the world still needs for decent living, plastic is a material that is daily requisite. Achieving emissions cut in plastic product process is therefore yet another major challenge.

Currently 40% of plastics worldwide take the form of packaging. However packaging designs do not provide incentives for reuse, and much is left to be done to tackle efficient disposal. As a result, most plastics are used short term and then bound for landfills or incinerators. Now, only 9% of plastic waste is correctly recycled. Plastic incineration is one of the main sources of GHG emission.

SCGC (Chemicals Business), leading player, adopts circular economy in its R&D work resulting in high-quality resins under the product name of SCGC GREEN POLYMER™.

SCGC GREEN POLYMER™ is the innovation that answers four aspects of utilization and environment: Reduce resource use, Recyclability by design, Recyclable, and Renewable.

**Reduce:** With SCGC’s proprietary technology called SMX™, resins that are strong, durable with moldability of less resin, resulting in lighter weight products. Both the production processes and transport logistics are deliberately less energy intensive.

**Recyclability by design:** SCGC has developed resins to make mono material packaging, replacing packaging with

multiple materials that is hard to recycle, therefore reducing the amount of waste to be disposed of, while maximizing feedstock for recycle.

**Reuse:** High Quality PCR Resin innovation of grinding household plastics and re-entered them into processing to make new resins, substitute use of virgin plastic resin. Throughout the product lifecycle, PCR-based products emit 70% less GHG than HDPE-type virgin plastic resin.

**Renewability:** An innovation in global spotlight, this means using plant-based and biodegradable material to substitute petroleum-derived material. This will contribute significantly to emissions cut by the plastic industry going forward.

**Thanawong Arirajakul**, CEO and President of SCGC explained: “SCGC GREEN POLYMER™ is the result of SCG’s commitment to sustainability policy and product owners who wish to reduce waste volume and optimize resource according to circular economy, while reducing emissions.”





SCGC sets the sales target for all SCGC GREEN POLYMER™ categories of 1 million ton per year by 2050. In 2023, the total sales stood at 218,000 tons, achieving GHG emissions cut off more than 125,000 tCO<sub>2</sub>eq.

## Resource Circularity and Less Fossil Fuel Use

The basic strategy for industrial sector in reducing GHG emissions revolves around reduction of fossil fuel in energy generation, by undertaking equipment adjustment, and process improvement to achieve energy efficiency, and turn to renewables such as solar. This is the priority for all business units across SCG, so that SCG products have less carbon footprint, and deliver low carbon products to the consumers.

Notable success cases in this sense include the corrugated packaging factory of SCGP (Packaging Business) that uses at least 15% of solar energy in its production processes, resulting in emissions reduction of 5,983 tCO<sub>2</sub>eq per year.

In addition, another key aspect of SCG strategy seeks to use less natural resources and turn waste to value according to circular economy. For instance, Eco-Terra ceramics line improves upon its predecessor by substituting virgin soil



**GREEN CHOICE**  
Design Excellence Award

**COTTO<sup>®</sup> ECO COLLECTION**

กลุ่มสินค้าที่ช่วยลดการใช้ทรัพยากรธรรมชาติใหม่ โดยการนำ WASTE ในกระบวนการการผลิต นำหมุนกลับมาใช้ใหม่

ลดการใช้ทรัพยากรธรรมชาติใหม่ **80%** RECYCLE MATERIALS

with “soil scraps” from production process or factory stock. These efforts result in up to 80% reduction of virgin soil use, which means from emission of 10.8 kgCO<sub>2</sub>eq per square meter of tile, to 9.46 kgCO<sub>2</sub>eq, or 1 kg less.

SCG reaffirms its commitment to R&D of low carbon products and promoting its products for green certification to reassure business and consumer clients, and to popularize low carbon products in the society for energy efficiency and less emissions, to care for the environment towards sustainable low carbon society.



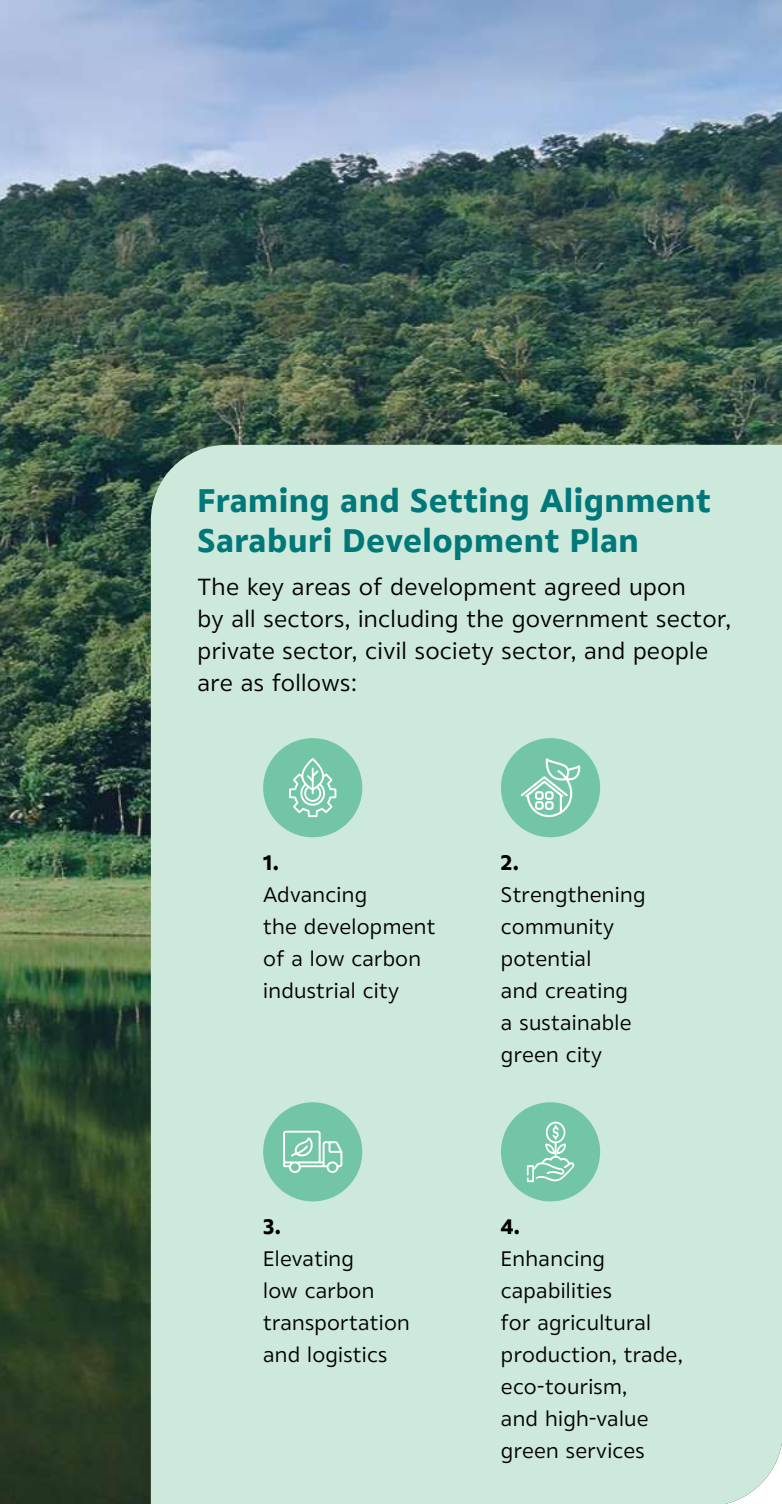
# Saraburi Sandbox: Building a Blueprint for a Low Carbon City through the Public-Private-People Partnership (4P) Model

As global warming is intensifying into global boiling, a partnership among all sectors has become increasingly imperative, especially cities that serve as hubs for people and economic activities. This starts with the public sector, which plays a crucial role in formulating policies, laws, and regulations to incentivize a transition towards a low carbon economy and society, while the private sector drives sustainability efforts in line with ESG (environmental, social, governance) guidelines, particularly by investing in low carbon technology and innovating green products that reduce greenhouse gas (GHG) emissions. Thailand is striving to achieve carbon neutrality by 2050 and net-zero GHG emissions by 2065 and to reduce GHG emissions by 30% by the year 2030, which could go down further to 40% with foreign financial and technological support, aligning with the practices



of engaging all stakeholders across the value chain without leaving anyone behind. At the same time, initiatives must be undertaken to raise awareness in civil society and among the general public of their roles in the transition towards the decarbonization journey.





## Framing and Setting Alignment Saraburi Development Plan

The key areas of development agreed upon by all sectors, including the government sector, private sector, civil society sector, and people are as follows:



**1.** Advancing the development of a low carbon industrial city



**2.** Strengthening community potential and creating a sustainable green city



**3.** Elevating low carbon transportation and logistics



**4.** Enhancing capabilities for agricultural production, trade, eco-tourism, and high-value green services

In support of Thailand's participation in the Paris Agreement and its Nationally Determined Contribution (NDC) to achieve net-zero emissions by 2065, SCG is playing an active role in driving Thailand towards a low carbon economy and society. To this end, it is actively advancing **Saraburi Sandbox**, a Public-Private-People Partnership (4P) that seeks to bring to life Thailand's first model low carbon city to catalyze the development of low carbon cities and reduce GHG emissions in a tangible manner at the local level. This initiative represents another promising pathway for Thailand's future as all the initiatives under the five dimensions of NDC have given us valuable lessons not only success factors, but also failures and limitations, which will lead to improvements in regulations and laws and further expand the support from all sectors in advancing a transition towards a low carbon economy and society.

Through a Public-Private-People Partnership (4P), Saraburi Sandbox has been launched as Thailand's first model low carbon city, aimed at enhancing the quality of life and the better environment and passing on more sustainable world to our future generations.

SCG has thus promoted Saraburi Sandbox to help drive the creation of an area-based model for low carbon city and reduce GHG emissions in a tangible manner at the local level. Hence, this sandbox is also another hopeful path for Thailand towards a successful transition to a low carbon economy and society.

## Why Saraburi is the Ideal Sandbox?

From past to present, Saraburi's economy has been driven by heavy industries, which are a primary form of industries in Thailand and generate as much as 67.3% of the province's total income. However, Saraburi is grappling with challenges from the expansion of these industries, as it is now home to a total of 1,605 factories (as of April 30, 2023), which emit up to 19.08 million tCO<sub>2</sub>e, with the cement industry alone releasing about 14.4 million tCO<sub>2</sub>e, accounting for 51.5% of the province's total greenhouse gas emissions. With its geography and climate conducive to agriculture and animal husbandry, Saraburi is also known for its Sao Hai rice, hailed as one of the best rice varieties in Thailand, and its agricultural sector contributed up to 4.5% of the province's income in 2021. Additionally, thanks to its excellent transportation network and industries, Saraburi is the central hub for four mega projects involving both rail and road networks and is a source of raw materials for industries, serving as the economic engine at both provincial and national levels.

Therefore, Saraburi is an ideal candidate as the site for carrying out initiatives to study success factors, failures, and limitations involved in the transition Thailand towards a low carbon future. Spearheaded by a network of cement producers, the initiatives will help transform Saraburi into a model city for low carbon industries, which aligns with its 20-year Provincial Development Plan (2018-2037), the National Economic and Social Development Plan, the Central Region Development Plan, and the Provincial Cluster Development Plan.



## Consolidating Collaboration Across All Sectors of Saraburi

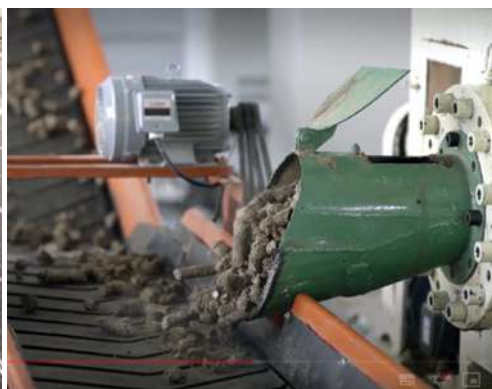
Saraburi Sandbox is a Public-Private-People Partnership (4P), bringing together the strengths of each sector to enhance flexibility and efficiency in operations and investment utilization. In August 2023, the Thai Cement Manufacturers Association (TCMA), the Saraburi Chamber of Commerce, and more than 20 partner agencies under the support of 7 ministries signed a memorandum of understanding on **“Integrated Climate Change Management in Support of Thailand’s Greenhouse Gas Emissions Reduction Goals through a Public-Private-People Partnership (4P)”** to demonstrate their determination to drive the development of Saraburi Sandbox, to learn, and bring collective actions to life, which are the key factors to success.

## Multifaceted Decarbonization Initiatives

Saraburi Sandbox is, in a way, a microcosm of Thailand, and in order to develop this model low carbon city, innovation and technology are introduced to encompass all five dimensions of Thailand’s Nationally Determined Contribution (NDC) Action Plan, consisting of five sectors: energy, industrial processes and product use, waste, agriculture, and land use, land-use change, and forestry.

- 1. Green Logistics and Energy Transition:** Efforts will help to demonstrate Saraburi as a model of transportation hub by exploiting 3 solutions; energy-, mobility-, and data-solutions to help decarbonize the logistics system, which will subsequently assist in reducing GHG emissions from the transportation. In addition, smart grids and energy storage systems with third party access (TPA) will also be deployed to enhance the stability of renewable energy usage and enable everyone to access clean energy, thus these actions will not only help reduce burdens of expense, but also improve air quality in Saraburi and people’s health in the long-run.
- 2. Waste to Value:** SCG believes that realizing circular economy is a national agenda that requires government support in blazing the trail for green procurement, especially developing
 

a conducive ecosystem while, parallelly enforcing uniform waste separation and collection laws, policies, and systems nationwide. Meanwhile, the private sector must accelerate innovation development and support communities and local involvement. To push this forward, SCG has developed Waste to Value technology and innovation to convert community wastes into refuse derived fuels to reduce methane emissions from landfilling. Additionally, SCG purchases agricultural waste materials exploiting as alternative fuels for cement and industrial plants in Saraburi, thus decreasing agricultural burning, not only helping reduce PM2.5 pollution, but also generating new incomes for local farmers and communities in accordance with circular economy principles.
- 3. Green Industry and Products:** In industrial sector, Thai Cement Manufacturers Association (TCMA) and SCG have launched a plan to promote low carbon cement products that help bring down carbon emissions from upstream processes, including raw materials production to cement production, uses of cement, and disposal of their products. As Saraburi presently has over 80% of the country’s cement production capacity, in 2024, TCMA will aim to support its members to transition their cement products to low carbon cement (hydraulic cement) and seek the international support to invest in Carbon Capture, Utilization and Storage (CCUS) technology by exploiting the carbon dioxide to add its value through the advancement of industrial processes, such as using in food and beverage production, curing concrete in precast production, and producing sustainable aviation fuels for the aviation industry.
- 4. Low Carbon Agriculture:** To achieve a sustainable and eco-friendly society, it is crucial to enhance farmers’ livelihood stability. This is one of success factors for the transition to a low carbon economy and society. As such, SCG encourages communities to adopt agricultural practices based on the BCG (Bio-Circular-Green Economy) model by implementing the alternate wetting and drying technique in rice cultivation to reduce methane emissions from rice paddies, which not only reduces water usage but also increases crop yields and can build towards carbon credits in the future.







Another example is the cultivation of energy crops, such as Napier grass and bamboo, for which there is a demand among cement producers who use them as alternative energy sources to replace coal in their production process.

**5. Green Spaces:** With forests being an important source of reservoir watersheds and carbon sinks, SCG has been working to amplify the success cases of its Conserving Water from the Mountains to the Mighty Rivers Project to collaborate with community forest committees to establish a network involving 38 community forests throughout Saraburi, with the goal of boosting carbon sequestration and carrying out forest conservation and restoration projects in protected and degraded forests as well as in private and public spaces, such as temples and schools. By doing these, green spaces created through this Public-Private-People Partnership will play a vital role in sustainable eco-tourism and are estimated to generate up to 8,000 million baht in annual income for communities, with additional income opportunities through the sale of carbon credits.

As a result, the key success factors of Saraburi Sandbox, is the integration of responsibility and governance through strong cooperation among the public sector, private sector, civil society sector, and people to transform this traditional industrial and agricultural city into Thailand's first model low carbon city. Furthermore, it will ensure that the lessons learned from these initiatives can be applied to other provinces nationwide, enabling Thailand to successfully transition towards **a low carbon economy and society.**



## Future Challenges Requiring Domestic and International Cooperation from All Sectors

- As a transition from fossil fuels to clean energy still incurs high costs, supportive relevant measures should be implemented while parallely tripling the use of renewable energy and doubling the efficiency of energy consumption by 2030, as outlined in the summary of COP28.
- Providing financial incentives to encourage business owners prioritize environmental issues and decarbonize their operations and implementing measures supporting those who succeed in their projects and businesses, such as tax deductions, and supportive programs.
- Providing green funding and seeking for collaboration from abroad to help all sectors access to green funds and innovations, both domestically and internationally, such as Carbon Capture, Utilization and Storage (CCUS) technology, to support the transition at all levels.
- Revising and reforming laws and regulations, as well as removing certain barriers to support a long-range transition to a low carbon industry, economy, and society, in order to improve sustainable environmental standards, have the better quality of life, and leverage the competitiveness of the whole country.



**Bancha Chaowarin**  
Governor of Saraburi

“

As long as everyone actively works together to develop Saraburi, either directly or indirectly, we will be able to achieve the goal of transforming Saraburi into a major city and a better place to live.

”



# From Mountains to Mighty Rivers Project: From Collaboration to Sustainability



In driving environmental and social sustainability, it takes concerted efforts from all sectors to effect change and foster a culture of responsibility towards the environment and society.

The Thai Cement Manufacturers Association (TCMA) and the Saraburi Administration Office have jointly announced their commitment to reduce greenhouse gas (GHG) emissions through a Public-Private-People Partnership (4P) known as Saraburi Sandbox: A Low Carbon City. Under this initiative, Saraburi is designated as a pilot model for testing various GHG reduction projects within the framework of cooperation, with the goal of transforming the province into a low carbon city.

SCG has taken its stakeholder engagement approach from the “From Mountains to Mighty Rivers” project, which involves collaborations with communities and various networks that has been successful in fostering a sense of ownership and collective responsibility for the sustainable growth

of the project, and applied this approach to Saraburi Sandbox to develop it into a blueprint for partnerships for a low carbon society.

## Napier Grass and Clean Energy: Generating Income for Communities

In addition to being an industrial hub, particularly for cement industry, Saraburi is also an importance agricultural area for various crops such as sugarcane and cassava.

As these crops have short lifespans, the land needs to be plowed according to the growing cycle, requiring farmers not only clearing the soil surface regularly but also making a new investment in every short cycle. Therefore, SCG has introduced new crops that can be used as alternative fuel instead of using fossil fuels and generate additional income for farmers.



**Saman Kaenphuttha,**  
**former village head of Ban Moo 6**  
**in Tap Kwang Subdistrict and chairman of**  
**Ban Hua Khao Ket Community Enterprise**



SCG assured the high demand of Napier grass in the alternative fuels market. The Pakchong 1 Super Napier, variety recommended by SCG, can be used as an alternative fuel in cement plant, it helps mitigate climate change. In addition, The Pakchong 1 Super Napier is very productive and provides high yield which helps maintain the plantation area green at all times.

Previously, farmers only cultivated corn and cassava, which had to be replanted after each harvest. Also, they would need to buy seeds and use pesticides and fertilizers. After each harvest, the fields would lie unused. But Napier grass poses lower risks as it requires no additional investment. All that is needed is just some fertilizers and water through solar-powered groundwater pumping systems. Weed can also be controlled using organic chemical-free methods and will naturally be suppressed when the grass grows.

A single planting can last 6-7 years, with 2-3 harvests per year.



Napier grass, also known as bana grass, is native to Africa but widely grown across the tropical regions. It grows towards the top and forms large clumps usually 2-4 meters high with a thick stem of 2-2.5 centimeters. The main mode of propagation is by stem cuttings similar to sugarcane. Napier grass is a versatile plant used primarily as a cattle feed. After growing the crop for 4-5 months, fibers are accumulated in the stems, making this grass a good source of biomass served as alternative fuel.

“As an industrial city, Saraburi is often seen as a contributor to climate change. As residents of this city, we are seeking ways to mitigate climate change by creating models and introducing alternative crops to farmers to eliminate post-harvest burning, which leads to carbon dioxide emission,” said **Prison Suksumklin**, an ESG officer



at The Siam Cement (Kaeng Khoi) Company Limited and a coordinator for Napier cultivation field trial, recounting the origin of the pilot plantation in Ban Hua Khao Ket, Moo 6, Tap Kwang Sub-district, Kaeng Khoi District, Saraburi.

“As reducing agricultural burning can reduce GHG emissions, we educate farmers by saying that everything in the field is money and they are essentially burning money when they burn their fields. We encourage them to keep their fields green. Also, we’ve created demonstration plots, suggested sources of funding, and assisted them to establish a community enterprise. Once they are registered, we help them find the market and assure that their crops can be harvested within five months and then our cement plant will buy their Napier grass to use as our alternative fuel. They can also sell it to any other factories as there is no exclusivity.”

The green leaves of Napier grass produce oxygen while growing in the fields and become a source of clean energy when used in factories as a substitute for fossil fuels, the major contributors to the greenhouse effect.

Apart from generating reliable income for farmers in Saraburi, the pilot Napier grass cultivation project will help cutting down agricultural burning and provide a source of clean energy, contributing to the mitigation of climate change.



## **Alternate Wetting and Drying (AWD): Less Water Consumption and Methane Emission**

Rice fields that are left flooded throughout the growing season naturally produce methane, one of the causes of global warming.

One of the solutions is a method called alternate wetting and drying (AWD), which can be implemented in areas with controlled irrigation.

In Saraburi, where a total of 266,000 rais is under the Pasak Dam irrigation project, SCG joined hands with Kubota to initiate a pilot project for AWD rice cultivation across a total area of 50 rais in Nong Don and Sao Hai Districts.

Of that number, 27 rais is on **Panthong Singkaew’s** land in Ban Suan Dok Mai, Sao Hai District.

“I am the chairman of the water user management team, overseeing an area of over 10,000 rais, spanning from Na Chong Sub-district in Mueang District to Suan Dok Mai, Sao Hai, Mueang Kao, Muang Ngam, and Rerng Rang Sub-districts in Sao Hai district, Saraburi, as well as Tha Luang Sub-district in Tha Luang District, Phra Nakhon Si Ayutthaya. We work in collaboration with the irrigation authority to plan water





**Sarit Jitnok,**  
Chairman  
of the Saraburi  
Community  
Forest Network

“

It is a great thing to create green spaces to help absorb carbon dioxide. However, educating the public is also crucial, especially to the youth. It creates a better long-lasting impact.

”



“We carry out various activities all year round such as constructing firebreaks at the beginning of the year, building check dams and planting trees in the middle of the year, and organizing community training programs at the end of the year. Our conservation efforts have made the forest attractive for tourists. We have launched community tourism, planted sunflower fields, and organized the “Liang Pa” concert. We’ve been doing this annually for years,” Sarit said as he described the community’s recurring activities.

SCG has also supported the Community Forest Network in order to promote their forest conservation efforts and activities.

“They produce cement to develop the country. Apart from their direct responsibility, we’ve also invited them to join our conservation efforts to protect serows, natural resources, and local communities. We’ve been working together as a community-private partnership. SCG has the capabilities to persuade other companies in Saraburi to help promoting community forests.”

The Saraburi Community Forest Network consists of Ban Khao Phra Phutthabat Noi Community Forest and Bo Sok Community Forest in Songkhon Sub-district, Ban Thung Saeng Community Forest and the Ban Pong Ka Pa Mai Daeng Community Forest in Tha Tum Sub-district, Kaeng Khoi District. Through collaboration, they won a Green Globe Award and later received a 5-Year Sustainability Award in 2009. However, it all started in 1983 when the locals collectively opposed Khao Phra Phutthabat Noi concessions.

“Khao Phra Phutthabat Noi is a limestone mountain with steep cliffs and about 30 peaks. It is a habitat for serows and provides water for communities. There are also temples and schools nearby. If the mountain was blasted, how would the community survive? There are many limestone mountains in Saraburi, so investors eventually went elsewhere. That’s how Khao Phra Phutthabat Noi remains standing to this day.”

Currently, 38 community forests have been registered under the Saraburi Community Forest Network, covering an area of 9,600 rai. Surveys of Khao Phra Phutthabat Noi have found that it’s a natural habitat of several endemic birds, such as a subspecies of limestone wren-babblers, as well as *Stenasellus mongatei*, a new insect species first discovered in a cave in this mountain, indicating the area’s high level of biodiversity.

“As industries in Saraburi emit high carbon dioxide, there must be trees in the area to absorb it, and therefore community forests need to be promoted and expanded to other areas where management is still lacking.”

management.” Panthong, speaking as a water manager and farmer, said, “We have already practiced AWD but we lack indicators. We have to rely on others for those. If the returns are worth it and it can be scaled up, then it should be promoted.”

AWD management innovation is relatively simple and offer tremendous benefits. Beyond water conservation, they also promote robust growth for rice plants, enabling them to grow stronger stems, more tillers, and more extensive root systems as well as develop resistance to mealybugs.

The method is simple and involves adding PVC pipe in the rice field after rice seedlings have been transplanted to measure the water level beneath the soil surface, leveling the soil surface level across the entire field, as well as using knowledge of water management in rice fields. Rice requires the highest volume of water at approximately 20 days before and after flowering. It is unnecessary to keep the field flooded at all times, as this can lead to a buildup of methane, a major contributor to global warming.

Preliminary studies indicate that AWD can increase yields by 10-15%, reduce fertilizer and chemical costs by 8-13%, save water by 50%, and most importantly, decrease methane emissions by up to 80%.

If it is scaled up to all the low-lying irrigation areas, AWD will be able to massively mitigate the impacts of climate change.

## Community Forests: Activities for Biodiversity Enhancement

According to information from **Sarit Jitnok**, Chairman of the Saraburi Community Forest Network, the permanent green area of Saraburi under local communities management in the form of community forests covers about 10,000 rai. Recently efforts are being made to expand it to 20,000 rai.





**Paitoon Panchaiyaphum,**  
**Director of Conservation and Resource Management Division, Department of Marine and Coastal Resources**



**Prof. Dr. Nantarika Chansue, D.V.M.,**  
**President of the Earth Agenda Foundation**



**Thiraphong Chansiri,**  
**CEO and President of Thai Union Group PCL**

“

The coral homes created by CPAC 3D Printing Solution blend in nicely with the natural environment, provide a sturdy reef structure for coral larvae, and serve as a habitat for marine life.

”

“

After we installed the coral homes, we did a biodiversity survey and found that the rate of coral recovery is 1.5-3 times faster when compared to natural recovery.

”

“

Thai Union Group Public Company Limited have a commitment to “Healthy Living, Healthy Oceans”. Therefore, we are interested in being a part of the “Love the Sea” Project. I’d like to encourage everyone to support this amazing project, so that we can keep our oceans alive into the future.

”



The forest areas worldwide are shrinking fast. Everyone is well aware that the preservation of permanent forests as sources of carbon sink is one of the most effective ways to fight against climate change.

## Coral Homes: Restoration of Coral Reefs and Marine Ecological Balance

Apart from its role in fostering cooperation to launch Saraburi Sandbox, SCG has also collaborated with various stakeholders in restoring coral reefs through the “Love the Sea” Project. This project is operated by the Earth Agenda Foundation in collaboration with SCG, the Department of Marine and Coastal Resources under the Ministry of Natural Resources and Environment, the Faculty of Veterinary Science at Chulalongkorn University, and various network partners. Under this project, CPAC 3D printing technology is used to create artificial reefs, or “coral homes,” for juvenile corals to serve as breeding grounds for corals and habitat for marine life. As they are natural-shaped and made from eco-friendly and durable cement, these structures can blend in with the underwater ecosystem.

SCG, in collaboration with its partners, including government agencies, private organizations, and the general public, has installed a total of 397 coral homes to restore coral reefs in various areas, such as Mai Ton Island and Racha Yai Island in Phuket, the Phi Phi Islands in Krabi, Koh Tao in Surat Thani, Samae San Island in Chonburi.

A biodiversity survey revealed a steady increase in the presence of juvenile corals and marine life on and in the vicinity of the coral homes.

**Chana Poomee**, Chief Sustainability Officer, SCG, spoke of the Company’s commitment:

“We are committed to use CPAC 3D Printing Solution to help restoring Thailand’s coral reefs, focusing on fostering collaboration and a partnership networks. SCG is ready to act as a facilitator to make a positive contribution to nature.”







# OUR ACTION

Climate Resilience

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Circular Economy

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Health and Safety

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Sustainable Products  
and Services

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Customer Experience  
Creation

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Supplier Management  
towards Sustainable Value

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Water Management

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Air Quality Management

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Biodiversity and Ecosystem

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Human Rights

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Employee Care  
and Development

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Community and Social  
Development





**Climate Resilience**



Climate change has brought about environmental crises and impacted to business and industry. SCG remains firmly committed to its 2050 Net Zero emission goal by prioritizing clean energy sourcing to substitute fossil fuels, develop energy efficiency technology, reduce GHG emissions while implementing climate resilience strategy by joining the Science Based Target initiative (SBTi) to ensure meeting the target on the principle of public-private sector collaboration for monitoring and evaluation of possible risks.

# Transitioning to clean energy sustainably, boosting energy efficiency, and forestation for carbon sink

Performance Indicator	2023	Progress	Target
Net Zero GHG Emission by 2050	<b>27.08</b> million ton CO <sub>2</sub> eq		<b>0</b>
By 2030, reduce GHG scope 1 and 2 emissions from 2020 base year.	<b>20.91%</b>		<b>25%</b>
By 2031, reduce GHG scope 3 emissions from the use of sold fossil fuels from 2021 base year.	<b>23.24%</b>		<b>25%</b>
By 2025, reduce energy consumption from BAU 2007.	<b>7.28%</b>		<b>13%</b>

**Strategy**

1. Increase the share of biomass and clean energy replacing fossil fuels.
2. Improve or modify process and equipment for higher energy efficiency.
3. Technology R&D to achieve Net Zero in 2050.
4. Develop low carbon products, services and solutions across the value chain.
5. Apply economics tools to promote GHG reduction projects.
6. Reforest and rehabilitate forest lands, onshore and mangrove forests and seagrass for biodiversity and carbon sequestration.
7. Raise awareness through activities on energy conservation and climate adaptation for employees and business partners.



**SCIENCE  
BASED  
TARGETS**

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

## SCG near-term target has been validated by SBTi

SCG sets sight on being a Net Zero organization by 2050 by joining Science Based Target initiative (SBTi) which promotes and validates entity's near-term and long term emissions target using science. In 2023, SBTi validated SCG's near-term target. SCG commits to reduce absolute scope 1 and 2 GHG emissions 25% by 2030 from a 2020 base year\*. SCG also commits to reduce absolute scope 3 GHG emissions from the use of sold fossil fuels 25% by 2031 from 2021 base year.

\*The target boundary includes biogenic emissions and removals from bioenergy feedstocks.

## From internal combustion engine (ICE) to electric vehicles



- **Cement-Building Materials Business**, Siam Cement (Lampang) changed its entire fleet of 12 diesel-powered trucks with 60 ton capacity to electric trucks. Plans are afoot to replace excavation, drill, and forklift trucks with electric versions.
- **SCGP (Packaging Business)** replaced diesel forklift with EV Clamp forklift. It studied the EV option in 2021 and went full force in 2023 at its paper press factory in Khon Kaen province with plans to scale up to other provinces nationwide.

## Success Case

### Climate Action Leading Organization (CALO)

#### SCGP (Packaging Business)

was certified by Climate Action Leading Organization (CALO) at outstanding level with Gold performance in three assessed aspects: Measure, Reduce and Contribute, judged by the Thailand Carbon Neutral Network, (TCNN), Thailand Greenhouse Gas Management Organization (Public Organization) (TGO).



## Increase the share of Biomass usage



- **Biomass crop promotion**
  - SCG and Office of the National Land Policy Board promoted energy crops such as Napier grass, bamboo, Acacia mangium.
  - Cement-Building Materials Business installed the conveyor and feeding facilities to increase the usage of agricultural waste and industrial waste to replace fossil fuels in cement plants. In 2023 these efforts increased alternative fuels share by 36% reducing emissions by 2.2 million ton CO<sub>2</sub>eq.

- **Biomass kiln installation**
  - SCG Ceramics (Plc.) installed a hot-air generator for biomass production from agricultural waste e.g. rice husk to replace natural gas. The effort reduced GHG emissions by 5,598 tCO<sub>2</sub>eq per year. It joins CPAC Green Solution to ensure adequate and consistent procurement of biomass, along with installation of suitable hot air and ventilation systems.
  - Siam Fibre Cement Group Co., Ltd. (Ta Luang) built biomass boiler to produce steam replacing natural gas, reducing GHG emissions 15,000 tCO<sub>2</sub>eq.



- **Sourcing new type of biomass**

SCGP (Packaging Business) aims to use more biomass energy by sourcing and experimenting with new alternatives such as cashew nut skins, while improving systems to use more biomass. It has successfully upped the share of biomass from 8.4% to 12.6%, reducing emissions by 619,689 tCO<sub>2</sub>eq per year.



- **Methane Gas Use**

SCGP (Packaging Business) scaled up installation of anaerobic digestion wastewater treatment plants in Thailand and Philippines, with methane gas as byproduct to fuel steam generator, replacing coal. This results in less coal use by 2,150 ton per year, and reducing emissions by 13,759 tCO<sub>2</sub>eq per year.



## Increase Clean Energy Use



### Cement-Building Materials Business

- Install 1.2 MW rooftop solar system at Siam Cement (Lampang) plant, and a 18.7 MW solar farm at Siam Cement (Kaeng Khoi) plant with total power generation of 2,220,894 kWh and reducing GHG emissions by 1,100 tCO<sub>2</sub>eq per year.
- Cement factories produced the power from Waste Heat Recovery system totalling 795,600 MWh, reducing emissions by 596,700 tCO<sub>2</sub>eq per year.

### SCGP (Packaging Business)

- Scale up solar energy installation in Thailand and Vietnam totalling 9.7 MW, reducing emisissions by 9,228 tCO<sub>2</sub>eq per year.



## Improvement for higher energy efficiency in production processes

### AI and Automation

#### Cement-Building Materials Business

boosted the power efficient of its cement factories in Thailand and abroad using automated raw material feed program.

- reducing GHG emissions by 4,250 tCO<sub>2</sub>eq per year

#### SCGC (Chemicals Business)

Rayong Olefins Co., Ltd. improved its production process by Machine Learning and Prediction Model to real time optimization.

- modifying the reactor by Furnace Digitalization Integrated with Always Optimization, reducing GHG emissions by 3,845 tCO<sub>2</sub>eq per year
- modifying of Cooling Systems with AI analytic system, reducing GHG emissions by 4,008 tCO<sub>2</sub>eq per year



#### SCGP (Packaging Business)

Installed the automatation control system for steam generation.

- reducing GHG emissions by 3,297 tCO<sub>2</sub>eq per year
- Improving Soot Blower system in 5 factories by calculating appropriate timing for high-pressure steam use
- reducing GHG emissions by 2,682 tCO<sub>2</sub>eq per year

### Equipment change

#### Cement-Building Materials Business

The Siam Cement (Kaeng Khoi) Co., Ltd. changed Nozzle Ring of raw material grinder to be more efficient.

- reducing GHG emissions by 175 tCO<sub>2</sub>eq per year

#### SCGP (Packaging Business)

Siam Kraft Industry Co., Ltd. (Ban Pong) installed Conical pulp crusher machines with for higher efficiency and improved controlling system of Central Air Compressor Systems (CACs)

- reducing GHG emissions by 2,167 tCO<sub>2</sub>eq per year



### Equipment fitting

#### SCGC (Chemicals Business)

Thai Polyethylene Co., Ltd. installed

Thermo-compressor equipment to

boost steam generation efficiency, alongside waste heat recovery.

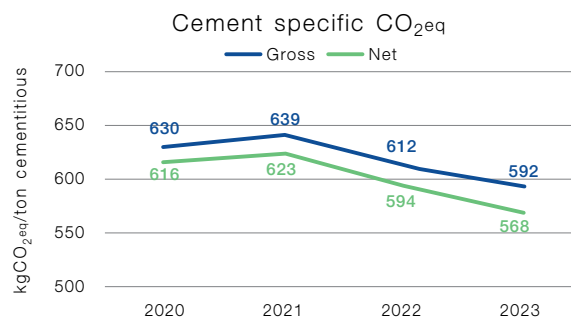
- reducing GHG emissions by 1,442 tCO<sub>2</sub>eq per year



Nawaplastic Industries Co., Ltd. installed Variable Speed Drive (VSD) to regulate the vacuum pump system.

- reducing GHG emissions by 79.69 tCO<sub>2</sub>eq per year

Cement plants has decreased the specific CO<sub>2</sub> emission both in gross and net performances. The key factor are from the usage of alternative fuels e.g. RDF which reduce the CH<sub>4</sub> from municipal waste landfill and increased the low carbon cement.



## Forestation as Carbon Sequestration

### Cement-Building Materials Business

- Community Forest Conservation Project**  
 working with community in five areas in Lampang totalling 3,000 rais. It is planned to apply for Premium T-VER certification from TGO (Public Organization).



- Participatory Forestation**  
 with Ban Thungpanan Community in Palian District, Trang Province, to rehabilitate the ravaged mangrove the size of 96.7 rais back to its former health.
- Supporting the community to set up “Ban Thungpanan Coastal and Marine Conservation Group,” which is officially recognized by Department of Coastal and Marine Resources.



### SCGC (Chemicals Business)

- SCGC Tree Planting Project**  
 cumulatively to date 870,129 trees were planted both inland and mangrove forests in multistakeholder collaboration including 9,300 volunteer. The project is applying for Premium T-VER and T-VER certification from TGO. Department of Coastal and Marine Resources allocated 1,100 rais in Rayong, Chonburi and Phetchaburi for mangrove reforestation which can sequester up to 6,500 tCO<sub>2</sub>eq.



### SCGP (Packaging Business)

- SCGP Tree Planting Project**  
 in 2023 planted 56,721 trees as planned.
- Between 2020-2023, this project planted 2,270,000 trees in the provinces of Kampaengphetch, Kanchanaburi, Ratchaburi, Prachinburi and Khonkaen.

## Raising Climate Awareness Among Employees



SCG develops the capacity, knowledge and understanding of its workforce on climate change through its Learning Management System (LMS) platform with contents in three levels namely:

1. Basic knowledge for all SCG staff
2. Advanced knowledge for SCG employees whose work is relevant
3. Detailed knowledge on Decarbonization for SCG staff related to climate strategy, planning and working



Circular Economy



# Waste Management and Creative Recycling Leveling Up the Circular Network



SCG gives top priority to efficient waste management through consistent production process improvement alongside generating solutions for circularity and also promotes value-adding of excess raw material and waste by either finding use or designing new product to optimize the value chain. We do this by fostering collaboration with partners and suppliers, community, and stakeholders to develop a circular economy that fulfills every ESG dimension—environmental, social and governance.

Performance Indicator	2023	Progress	Target
Recycled and Renewable Materials in 2025	8.55 million tons		8 million tons
SCG Packaging (SCGP) Share of recyclable, reusable or compostable packaging	99.7%		100%
SCG Chemicals (SCGC) Sales volume of SCG GREEN POLYMER™ in 2030	218,000 tons		1,000,000 tons
Hazardous waste from production to landfill annually*	0 ton		0 ton
Non-hazardous waste from production to landfill annually*	0 ton		0 ton

\*Thailand

## Strategy

1. Reduce waste at source, and zero industrial waste to land fill.
2. Manage waste according to 3Rs and circular economy principles, both hazardous and nonhazardous waste inside SCG to the best effort.
3. Develop circular-economy products and services to foster and optimize materials value.
4. R&D focus on reuse of waste and waste to value
5. Change the business models in line with circular economy.

# Synergy of the Circular Economy Network

## Network

### Cement-Building Materials

Partnership with Circular Economy in Construction Industry (CECI)



## Project and Activity

### The King Bridge Tower Project

Mainstreaming circularity into King Bridge Tower Rama III development project, from design process to procurement and construction. Building Information Management is used in design resulting in less resource use, reduction of onsite waste, and shortening the construction period. This is a groundbreaking pilot to showcase the path towards sustainability of the construction industry.



### From pile waste to recycled concrete

This onsite waste management aspect of construction projects is geared towards resource optimization and waste reduction. Pile wastes are ground to yield Recycled Concrete Aggregate, which is then used as constituent in recycled concrete for flooring-substitute materials in the project vicinity.



- The network currently is joined by Magnolia Quality Development Corporation (MQDC) in its Forestias, TCC Assets (Thailand) Ltd.'s ONE Bangkok, Thai Obayashi's O-Nes Tower and Central Pattana Plc.'s Central Sriracha project.

### SCGC (Chemicals Business)

and Ministry of Natural Resource and Environment, Fisher Folks Group of Rayong province, business partners and marine resource protection network



### Nets Up Project

Seeks value adding by recycling fishing net scraps into marine materials, employing technology and innovations to manage the whole chain from upstream to downstream. It starts with aggregating fishing net scraps through community garbage bank system facilitated by KoomKah mobile application. Inputs are fed into top-line recycling innovation to yield High Quality Post-Consumer Recycled Resin. The output is subsequently shaped as fabric that can be used as textile, packaging, sports shoes, car parts, electric appliances. This is deemed upcycling, a new option for brands and consumers who care about the environment and marine trash pollution.



- The project has been piloted in coastal areas of Rayong. Plans are underway to scale up the project to 23 coastal provinces in the rest of Thailand.

### SCGP (Packaging Business)

SCGP (Packaging Business) In collaboration with Thailand Institute of Packaging and Recycling Management for Sustainable Environment (TIPMSE) and the Municipality of Sansuk, Banbueng and Koh Sichang in Cholburi and the network of producers, distributors, aggregators, and recycling plants.

### PackBack Project for Sustainability

In this Extended Producer Responsibility (EPR) undertaking, PackBack manages used packaging for reuse in a concrete manner. First, producers are urged to build in circularity from design, collection, and separation, to allow for convenient and efficient reuse and recycling after use.



- Packback has been piloted in the municipal areas of Sansuk, Banbueng and Koh Si Chaing of Cholburi in collaboration with TIPMSE, and 90 public-private partners.





## From Waste to Product R&D

SCG keeps on coming up with solutions to turn waste to value. The effort involves creative thinking combined with technology to generate new products that add value, are environment-friendly and consumer responsive.

### Product

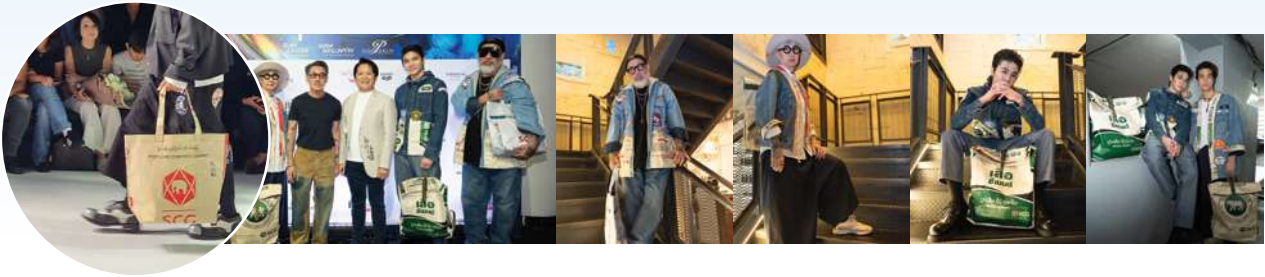
### Waste to Value

### Product R&D and Design

#### Cement-bag fashionwear

Used cement bags that can no longer serve the purpose of cement packaging

**Cement-Building Materials** collaborates with designer Chanachai Jariyathana of FRI27NOV brand, to design the technique of stitching cement bag and old jeans for a collection titled “The Day Yester Tomorrow” Under Sustainable Fashion concept. The collection made its debut at Bangkok International Fashion Week 2023 at Siam Paragon and is marketed online.



#### Water filter materials in fancy fish tank

Brick scraps from production process

**Cement-Building Materials** and Rajamangala University of Technology Srivijaya jointly developed water filter from light-weight brick. Key features are extra pores with water contact surface of as high as 3,300 square meters per liter, 7 times higher than volcanic rocks, and suitable for microorganism to thrive. The effect is deacidification, reduction of ammonia and nitrate therefore making the water fit for marine creatures. The material is piloted at Siam Carp fish farm in Ratchaburi and is in pipeline for commercialization.



#### Miracle Block and “Khoo Din” soil nutrient

Fly ash and bottom ash that constitute waste from burning coal for energy

**SCGP (Packaging Business)** invests in R&D to upgrade ProBlock to Miracle Block with refractory quality, strength and bondability like Lego pieces that can be used in both permanent and temporary wall because it is amenable. Further, bottom ash and fly ash have been turned into soil nutrients marketed under the brand “Khoo Din” for agriculture.



## Communication and Promotion of Circular Economy

### Circular Economy

#### Digital Platform Project

SCG has joined as advisor of the “Project to Develop Collaborative Model and Digital Platform for High-Impact Circular Economy” focusing on construction materials and packaging business. It is organized by Energy Technology Research for Environment of Engineering Faculty, Chiang Mai University. The purpose is to develop a waste management data base leading to value chain management of waste instead of transport for disposal. Participating factories shall receive Carbon Foot Print (CFP) data from their circular economy activities.



#### CHOICE IS YOURS Project

SCG and six leading organizations initiated the CHOICE IS YOURS project in 2023 and continuing in 2024 to open opportunities for youth at higher education level in a contest to come up with creative green ideas that benefit the environment the circular way. The theme for 2024 contest is Circularity for Community. Contestants will benefit from mentorship, knowledge and skills offered by six participating organizations. The winning team will have a chance to choose an internship at these participating organizations. In 2023, over 220 students entered the contest from 22 universities nationwide.



“ We learnt about different approaches to waste management. We benefited immensely from the experience of working together as a team, application of technology, as well as creative and innovative thinking. With these we chose to intern with SCG because it is Thailand’s top enterprise. ”



**Miss Sunita Sathienjarukarn,**  
Burapha University  
**Miss Jirawan Prathumjaion**  
King Mongkut's University  
of Technology Thonburi  
Members of the Second Runner Up  
Team in 2023

## Success Cases

### Waste Management and Reuse

# 84

tons

“SCGP Recycle: Old for New Paper Project” SCGP (Packaging Business) and Sino-Thai



Engineering and Construction (STECON) organized “SCGP Recycle: Old for New Paper Project” to promote management, aggregation and separation of used papers from source and entered into recycling process to produce new paper. In 2023 the project recycled a total of 84 tons, equivalent to GHG emission reduction of 244.5 tonsCO<sub>2</sub>eq per year.

# 12,500

boxes

“reBOX for the Blind” SCGP (Packaging Business) and ThailandPost



continued the reBOX project collaboration, into its 4<sup>th</sup> consecutive year. Under this project, used post boxes are collected and sent to SCGP to produce packaging for agencies working with people with disabilities including the Thai Red Cross, Universal Foundation for Persons with Disabilities, Thailand Association of the Blind, Low Vision Association of Thailand, Thailand Association of the Blind Community. In 2023, the project recycled a total of 12,500 boxes.



Health and Safety



# Enhancing Health and Safety Standards, Extending it Contractors

SCG is committed to implementation of SCG Safety Framework in Thailand and Abroad where it operates. The Framework focuses on workers' identification of unsafe behaviors by themselves and promotes Operational Discipline which addresses the root causes of fatality, injury, and lost time accidents. At the same time, safety standards are updated and expanded to suit changing business activities, while supporting companies' and contractors' capability building to conduct self-assessment and self-development to achieve the OHS target alongside SCG.

Performance Indicator	2023	Progress	Target
Fatality of employees and contractors	Employees <b>1</b> case Workplace Contractors <b>6</b> cases Direct transport contractors <b>0</b> case Other transport contractor <b>1</b> case		<b>0</b>
Lost time injury frequency rate of employees and contractors, in Thailand and Abroad by 2024	Employee <b>0.276</b> cases/1,000,000 hours worked Contractor <b>0.231</b> cases/1,000,000 hours worked		<b>0</b>
Occupational illness frequency rate of employees	Employee <b>0</b> case/1,000,000 hours worked Contractor <b>0</b> case/1,000,000 hours worked		<b>0</b>
All companies under SCG pass the Safety Performance Assessment Program (SPAP) at the Standard level and higher.	<b>83%</b>		<b>100%</b>

## Strategy

1. Elevate the implementation of the Occupational health and safety management system, standards, Life Saving Rules, and transportation safety to ensure effectiveness both in Thailand and Abroad.
2. Foster participation and quality promotion in risk identification and management by oneself to foster an organization-wide safety culture.
3. Apply the Safety Performance Management System (PMS) to ensure the actual implementation of safety policies and establish shared goals for use in safety performance assessment.
4. Utilize digital technology to improve operational efficiency and support business growth to reduce risks of accidents, injuries, and occupational illnesses and diseases.
5. Communicate lessons learned from incidents, promptly and inclusively, to expand on rectification, and prevention to avoid recurrence, as well as review safety measures to make sure they are proportionate to the risk and up to speed with changes in respective business.

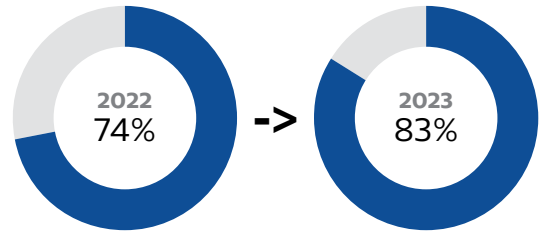
## Unsafe behaviors and Near Miss Identification

SCG encourages employees and contractors to identify unsafe behaviors that may cause injury, fatality both unsafe actions, unsafe conditions, as well as near miss, alongside identifying how to prevent and rectify at the root cause. In 2023, over 7,965 Near Miss reports were filed, and 209,546 unsafe reports.



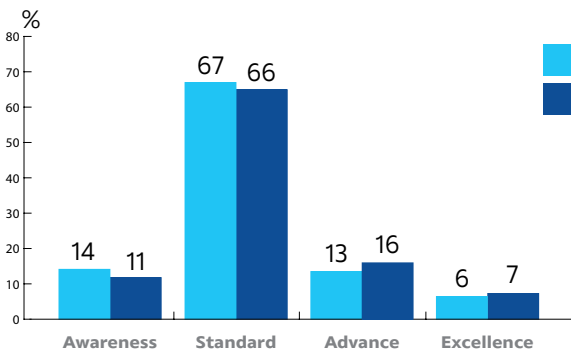
## SPAP Self-Assessment to Level Up Safety

SCG supports its business units in Thailand and Abroad to conduct a Safety Performance Assessment Program (SPAP) on their own in line with SCG Safety Framework 2021. The goal is to have all units assessed and pass at the Standard level and higher. In 2023, All companies completed self-assessment. Results of SCG companies in Thailand and Abroad passed the Standard level and higher increased from 74% in 2022 to 83% in 2023.

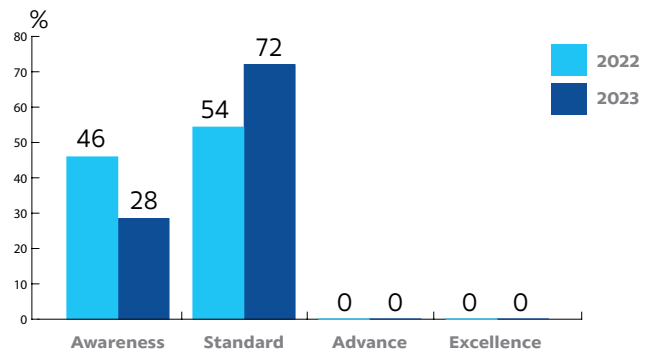


All companies in Thailand and Abroad passed SPAP at the Standard level and higher.

## Results of SPAP Self-Assessed in 2023



In Thailand



Abroad

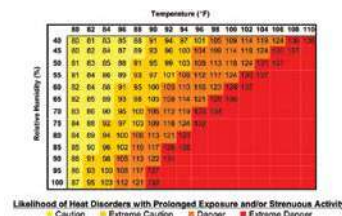
## Safety Award 2022

Safety Award 2022 recognizes companies that achieve zero fatality and lost time accidents with SPAP Level of Advance or Excellence. There are two categories of Safety Award 2022: 9 companies won Platinum and 5 won the top Diamond award.



## Expanding Safety Standards to Include Business Activity

- Solar Energy Business Service** Due to the rapid expansion of the solar business, SCG engaged representatives from operational to co-develop and set safety standards for the solar energy business, ranging from job planning, vendor selection, preparation, and oversight during operation including hand-over and evaluation. Through pilots and improvements, these standards were announced and enforced in 2023.
- Working in high heat conditions** SCGC (Chemicals Business) set safety and health standards for operation in high heat conditions, for both outdoor and indoor work. It has a Heat Index to conduct impact evaluation on workers, alongside enforcing preventive and harm mitigation measures from heat such as reducing temperature in the work environment, limiting working hours in high heat environments, conducting health checks and physical readiness of workers, and training workers on first aid.



## Accident Prevention and Reduction

- Fire Extinguisher Inspection** All SCG business units conduct inspections of fire extinguishers to ensure equipment compliance with TISI and international standards. They are installed at appropriate locations inside the company's premises and factories. Fire extinguishers that contractors use at work site, and those fitted in transport trucks are subject to similar inspection and maintenance requirements. Old ones that fail the inspection must be replaced.
- Learning and Prevention from Real Cases** SCG reviewed and extracted lessons learned from incidents that may lead to fatality and lost time injury from all business units. These salient safety points are disseminated across the organization to stimulate learning and raise awareness among employees and contractors to prevent the recurrence. Contents are delivered in the form of documents and video clips to facilitate inclusive communication.





## Strengthening the Safety Culture

SCG builds the attitude of safety leadership and self-love with safety among employees at all levels, leading to what we call the “Execution Know Why” mindset of both its employees and contractors. SCG also focuses on observations and compliance with Life Saving Rules, particularly in high-risk jobs such as working at height, pre-job readiness such as alcohol and substance checks, and sharing of safety measure practices across business units.

### Cement-Building Materials Business

- **Safety Culture Challenge**

Factories of Living and Solution group organized safety awareness activities in the form of contests and cross-factory participation such as safety testing, photography and report of unsafe points, Life Saving Rules, and safety culture communication video clips Over 4,800 workers joined these activities. The safety test results show an increase in awareness level among the workforce from 72% before to 83.5% after activities.

### SCGC (Chemicals Business)

- **Regular engagement with permanent contractors** from top executives, supervisors, and worker level for them to champion safety leadership and be part of the Safety Network, to keep an eye on and report unsafe incidents and risks.
- **S-A-F-E-T-Y Behavior** supports contractors to express and drive S-A-F-E-T-Y Behavior with caring regularly according to the 9 Safety principles consistently inside and outside the workplace.

### SCGP (Packaging Business)

- **Safety Climate Questionnaire Survey** This is an opinion survey on safety conducted in 2023 in Thailand and Abroad. The results are used to develop the plan for “Interdependent Stage” to express caring behavior for other people in the team to be able to work safely.
- **Establish Safety Networking or Safety CoP among factories in Vietnam**, for sharing of safety-related problems and good practices in compliance with domestic laws and SCG standards.

“ The Company and SCG have jointly taken our work quality up another level effectively using technology for data analysis, prompt inspection of Pain Point or Hotspot in a timely manner. Furthermore, SCG work system is solid, and KPIs efficient, able to stem losses and build safety standards that are important to work such as the Life Saving Rules. ”



**Thanakorn Patarachaijinda**  
Managing Director,  
A.E.C. Technology Group,  
SCG’s partner in Solar Business



## AI and Digital Platforms for Health and Safety

**Cement-Building Materials Business** uses AI technology and high-precision processing to

- Monitor fire in risky areas such as fuel stockpiles to act before escalation.
- Inspect entry into risky areas to prevent theft and property damage.
- Monitor PPE use to prevent falls when workers work at height and notification through Line application, etc.

**SCGC (Chemicals Business)** develops digital platform and applications for health and safety:

- **My Health Application** is developed for ease of use on mobile phones. It adds screening and proactive search of heart and vascular diseases considering global and national trends.
- **ePTW** is a digital platform for at-risk work permits, facilitating linkage with databases of contractors that have undergone training and are qualified according to Contractor Safety Management application for various types of jobs. This makes screening more accurate and enhances work safety.

**SCGP (Packaging Business)**

- **SAFEsave** is a digital platform supporting and fast-tracking OHS work, reducing complications and errors. In 2023 more modules are added to the platform including Near Miss, and Transportation Safety.



## Goods Transportation Safety

Due to the execution compliance with the Goods Transportation Safety Standard. As a result, accidents from travel and transportation are decreasing every year. The highest goal is “zero Injury and fatality.” SCG has taken key actions as follows:

- **Promoting Operational Discipline (OD)** at corporate and individual levels, by expanding the good practices of SCGC (Chemicals Business) to all business units and carriers. Provided OD workshops for carriers at managerial, supervisor levels, and drivers. Set up an assessment and develop a plan for safety rectification, with regular monitoring and follow-up.
- **A system for tracking and monitoring the driving behavior of drivers.** Both transportation vehicles and vehicles used for travel in the company’s business, including GPS Alarm, Alert, and traffic tickets. To be used to analyze behavior that may lead to accidents and change driving behavior to be safer.
- **Control the working and rest hours of drivers** regarding a delivery plan or work schedule and limit overtime hours. To reduce the risk of accidents from fatigue.
- **Set up an accident investigation committee** which consists of representatives from each business unit. To analyze root causes and prevent the recurrence of incidents. Sharing of ideas, techniques, practices as well as lessons learned from accidents between business units.
- **Off-the-job accident-reduction plan from driving vehicles.** To show the caring and adopt safety guidelines to apply even outside of working hours.

“OD will be successful when the executives are involved and be a role model to show employees that this is for their benefit, and keeping them safe while convincing them that their safety is genuinely our caring.”



**Bunjerd Wakesoongnoen**  
Outbound Logistics Manager  
Thai Polyethylene (TPE)



**Ravikorn Sayamipak**  
Director of Goods  
Transport Business  
Inter Transport and  
Logistics Company  
Limited.



## Transport Safety Manager Development

SCG has prepared personnel for the Transport Safety Manager (TSM) of the organization and carriers as mandated by the Department of Land Transport, which will play a role in reducing travel and transport accidents. The TSM is charged with oversight and management of the truck, driver, routing, load and transport, accident response plan, etc.

- Thaksa Piphat School is now legally registered as a TSM training entity, to promote and drive carriers to appoint the TSM as required by law, and work with public agencies such as the Department of Land Transport, Road Safety Thailand Center, and Accidents Prevention Network for support safe driving to reduce road accidents sustainably.



“The Company’s drivers want to work with SCG because SCG takes good care of their safety and well-being. This has automatically reinforced the safety culture. Also, SCG listens and immediately responds to their thoughts and recommendations.”



## Expanding Safe Travel and Transport Measures

- **Safe Unloading Guideline** SCGC (Chemicals Business) and carriers jointly formulated this guideline to reduce transport-related accidents in the client’s area. These consist of steps in moving goods, and educating workers on safe work operation of moving goods.
- **Expanding the standards abroad** through the launch of Goods Transportation Safety in Vietnam, Indonesia, Laos, and Cambodia, and conducting visits of transport carriers in Laos and Cambodia to give advice and enhance safety performance.

Sustainable Products and Services



# Develop New Innovations Uplifting SCG Green Choice Products, Services and Solutions

SCG is committed to R&D using technology to innovate, add value and level up the quality of its products, services, and solutions continually, to reduce carbon footprint, considering climate resilience and circularity, product safety and value for money. We do this through promotion of SCG Green Choice and other relevant certifications for greater business competitiveness and sustainability for all.

## Other Certified Green Products, Services and Solutions



**70**  
Carbon Footprint Reduction (CFR) Label products



**505**  
Carbon Footprint Label products



**26**  
Green Label products



**57**  
Energy Efficiency Label products

Performance Indicator	2023	Progress	Target
Revenue from sales of SCG Green Choice products, services and solutions in 2030	<b>54.1%</b>		<b>66.7%</b>
Revenue from sales of SCG Green Choice with directly benefits to customer in 2030	<b>14.3%</b>		<b>33.3%</b>
Products, services and solutions certified for SCG Green Choice	<b>294</b> products		<b>255</b> products

## Strategy

- Develop products, services and solutions that address the consumer's need, enhancing their well-being, climate resilience and circularity.
- Advance business processes across the value chain to bring them in line with international standards.
- Apply innovation in the development products, services and solutions to create new business opportunity.
- Accounting for environmental impacts and safety of products, services and solutions throughout their life cycles.
- Promote and increase green products with direct benefits to customers.
- Communicate and advocate for consumers to shift to green products, services and solutions.

## Home Living Products, Direct Delivery of Sustainability to the Customer

Cement-Building Materials Business presses ahead with developing materials for construction of energy-efficient buildings and thus reducing Greenhouse Gas Emissions. The following products have been SCG Green Choice-certified:

- Q-CON Light Weight Concrete** for building walls. Its heat resistance rate is 7-14 times higher than other brick varieties, and its large size helps save transport cost and shorten construction period. Lightweight concrete thicker than 10 cm. is proven to insulate a structure from external heat by more than 30%, saving at least 9% of electricity use while reducing GHG emissions by at least 0.75 kgCO<sub>2</sub>eq per square meter per year.

- SCG Fiberglass Insulation** helps save electricity and reduces GHG emissions by at least 0.79 kgCO<sub>2</sub>eq per square meter per year. Furthermore, it is made from 100%-recycled glass, and the fiberglass is certified non-carcinogenic by the World Health Organization's International Agency for Research on Cancer.



## Responding to Industry User's Needs for Green Products

Awareness of climate urgency among consumers prompts industries to develop more green products. SCG has exerted efforts to level up its production to achieve higher GHG emissions cut and circularity, for industry users to manufacture yet more climate-resilient products.

### GHG Emissions Reduction

### Reduce Resource Use

#### Cement-Building Materials Business

##### Tiger Décor, Marble Render, Easy-Mix Formula



reduces CO<sub>2</sub> in its production process by at least 300 kgCO<sub>2</sub>eq per ton compared with Type 1 White Portland Cement.

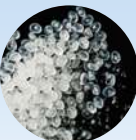
##### SCG Fly Ash Pipe Concrete



is concrete pipe made from 3.46% by weight mix of recycled fly ash, while maintaining its strength and life cycle. This is manufactured by SCG factor in Indonesia.

#### SCGC (Chemicals Business)

##### Polypropylene Compound Plastic Resins, GSV90BL and GSV65BL



aluminum substitute material used in making ladder inside vehicle. It is lightweight, strong and high-impact resistant. Its use reduces GHG emissions by up to 60% compared with conventional production using aluminum-based material.

##### EcoClear-PP, clarifying agent for polypropylene products,



promotes use of recycled plastic as substitute material in production by at least 20% weight-wise, with no effect on the product's clarity and food-packaging safety certified.

#### SCGP (Packaging Business)

##### Glassine Paper



produces through an environmentally friendly process that can reduce energy consumption during production by at least 2% per ton. It can also reduce GHG emissions by at least 8 kgCO<sub>2</sub>eq per ton.

##### Fest Fresh Pak



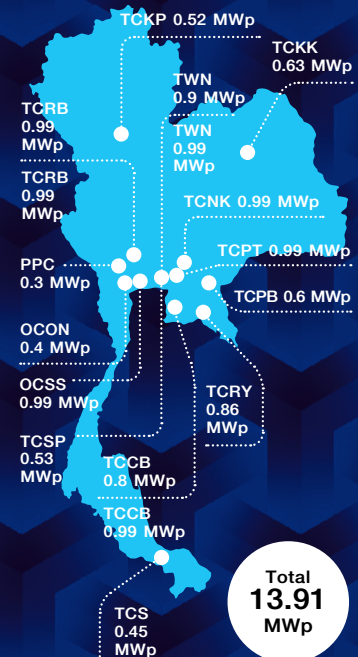
increases renewable material use by up to 80% of its weight compared with polypropylene tray, while maintaining its strength and able to keep food fresh according to customer's requirements.

## Success Case

# 5,983

tCO<sub>2</sub>eq per year

SCG Packaging (SCGP) factories manufacturing corrugated paper have installed solar generation capacity and are using solar energy to power production processes at an overall rate of 15%, reducing GHG emissions by 5,983 tCO<sub>2</sub>eq per year.



- TCNK : Thai Containers Group Co., Ltd. (Navanakorn)
- TCPT : Thai Containers Group Co., Ltd. (Pathumthani)
- TCSP : Thai Containers Group Co., Ltd. (Samut Prakarn)
- TCRB : Thai Containers Group Co., Ltd. (Ratchaburi)
- TCS : Thai Containers Group Co., Ltd. (Songkhla)
- TCCB : Thai Containers Group Co., Ltd. (Chonburi)
- TCPB : Thai Containers Group Co., Ltd. (Prachinburi)
- TCRB : Thai Containers Group Co., Ltd. (Saraburi)
- TCKP : Thai Containers Group Co., Ltd. (Kamphaeng Phet)
- TCKK : Thai Containers Khonkaen Co., Ltd.
- TCRY : Thai Containers Rayong Co., Ltd.
- OCSS : Orient Containers Co., Ltd. (Samut Prakarn)
- OCON : Orient Containers Co., Ltd. (Omnoi)
- OCNP : Orient Containers Co., Ltd. (Nakorn Pathom)

Customer Experience Creation



# Fostering Product Innovation and Knowledge Sharing on Decarbonization

Global crisis coupled with social, economic, and environmental challenges have prompted a shift in demands of both business customers and consumers. SCG is, therefore, dedicated to designing and developing products, services, and solutions, with a primary focus on sharing knowledge with customers in line with the corporate sustainability framework.



Performance Indicator	2023	Progress	Target
Overall customer satisfaction based on survey at SCG Contact Center	100%		100%
Average Customer Satisfaction - All business units	94%		94%

## KIT CARBON Facilitates Customers in Managing Low Carbon Construction

**Cement-Building Materials Business** is actively advancing its efforts to reduce carbon emissions in construction through the implementation of KIT CARBON. This innovative platform utilizes digital technology and Building Information Modelling (BIM) for carbon footprint calculations by assessing emissions in construction projects, providing a streamlined process for monitoring GHG emissions throughout the project duration, with ease, accuracy, and transparency at every stage. The platform facilitates efficient planning and preparation for necessary decarbonization measures, including the selection of appropriate materials with low emissions. Furthermore, KIT CARBON serves as a tool for collecting GHG emissions data related to construction materials and establishing building emission standards that are contextualized to Thailand and ASEAN.

- Assist PTG Energy Public Company Limited (PTG), the operator of gas stations in reaching its Net Zero goal in 2065 through strategic design and planning to enhance construction efficiency and minimize carbon emissions during gas station development. Utilizing KIT CARBON and BIM Site Dashboard leads to an estimated 8% reduction in emissions compared to conventional methods, equivalent to 60-70 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).

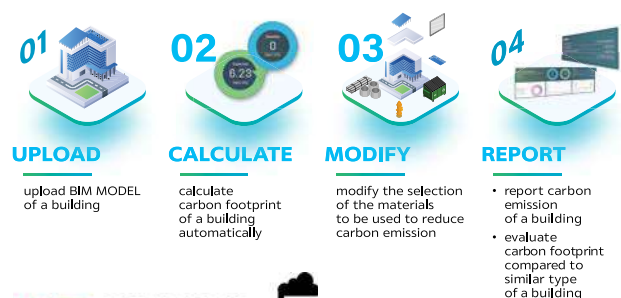
“We are determined to collaborate with CPAC Green Solution to develop new solutions to maximize decarbonization and be part of Thailand’s commitment towards low carbon society.”



**Itthipol Deemea**  
 Director of Engineering Division, PTG Energy Public Company Limited.

### Strategy

- Deliver good experience through innovative solutions to Business to Business to Customer segment (B2B2C).
- Provide Best-Better-Good choices tailored to consumer lifestyles in the Business to Consumer segment (B2C).





## Promoting Awareness and Understanding of Carbon Footprint Calculation

SCGC (Chemicals Business) is actively disseminating knowledge on carbon management to its business customers, in line with the commitment to achieving Net Zero goal according to European Green Deal and in anticipation of the EU's CBAM enforcement (Carbon Border Adjustment Mechanism). SCGC conducted workshops on carbon footprint calculation of products with targeted business customers. In 2023, 7 workshops were organized for 7 business customers individually achieving a high participant satisfaction rate of 89%.



## Co-create Sustainability through Circularity

SCG collaborates with customers to advocate for the optimal utilization of resources in accordance with the principles of circular economy.

### Collaboration

**SCGC (Chemicals Business) and Global House**



**SCGP (Packaging Business) and PatPat outlets of Chaipattana Foundation**



### Project

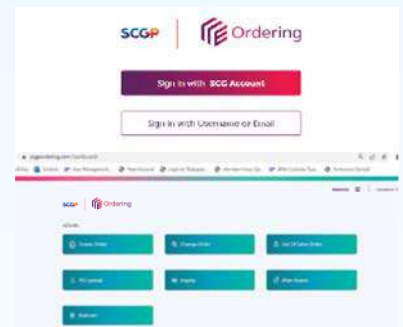
**The Closed Loop Collaboration for Circularity Initiative** gathers used plastics from Global House retail stores and distribution centers. These plastics are then converted into High Quality Post-Consumer Recycled Resin (High Quality PCR) from SCGC GREEN POLYMER™ technology to manufacture environmentally friendly plastic bags. The project's pilot phase is implemented at Global House headquarters in Roi-Et province, successfully recycling over 3,000 kilograms of plastic within 6 months. Plans are underway to extend the project to other Global House branches.

**Recycled Paper Bags Project** adds a touch of design for branding and a variety of packaging products to sustainably promote community products nationwide under the King Rama 9's initiative.

## Develop Customer Relations and Services System

SCGP (Packaging Business) developed its Customer Relations Management to facilitate efficient service delivery from its sales and marketing team to customers through:

- Install SCGP Customer Services Center, reachable at 02-586-5555, consolidates all services under one number. Additionally, customers can receive assistance via Line OA @SCGPContact, and a Smart Agent Chatbot is available for convenient access to product information.
- Install initial phase of SCGP Customer Order Management for the Kraft paper and ready-made products. This enables customers to easily track the status of their orders, including delivery dates, even outside of regular business hours.



- Expand online payment options through Payment Gateway Program which allows customers to conveniently review delivery documents and purchase orders on various devices such as computers, mobile phones, and tablets, ultimately reducing the likelihood of payment errors.

## Success Case

### RecyClass (Class A) Certification

PREPACK THAILAND Ltd., a part of SCGP (Packaging Business), has earned certification from RecyClass (Class A) for its recycling capability and traceability of recycled material. This certification specifically applies for single plastic packaging type R1-PE Mono-Layer Pouch and PE Flexible-Pouch, assuring that these products are easily recyclable and environmentally friendly.





Supplier Management towards Sustainable Value



# Empowering Suppliers towards Net-Zero Emissions and Low Carbon Society

SCG seeks to elevate its collaboration with suppliers to enhance its capacity to deliver products and services, taking into account social and environmental impacts in alignment with ESG 4 Plus: Net Zero – Go Green – Reduce Inequality – Enhance Collaboration, plus Trust through Transparency. In addition, SCG selects potential suppliers to accomplish its goals of achieving net-zero target by 2050 and enable economic growth in accordance with the circular economy principles towards low carbon society.

Performance Indicator	2023	Progress	Target
100% of suppliers in procurement spend over million baht processed through the annual Environmental, Social, and Governance (ESG) Assessment.	100%		100%

## Strategy

Promote ESG integration in business management among suppliers to ensure fairness, transparency and create value for stakeholders across the value chain sustainably, as well as implement risk management to increase business opportunities through the following:

1. Supplier selection and assessment for those with potentials to do business sustainably.
2. Risk assessment and supplier segmentation to formulate strategy and supplier development plan aligned with risks.
3. Develop and enhance supplier’s capacity towards ESG-focused sustainability.
4. Raising awareness, knowledge and competency among procurement staff.



- Supplier Event 2023:** SCGC (Chemicals Business) organized supplier networking events for sustainable development to foster an understanding of SCGC’s procurement systems, standards, safety, and green business practices. In 2023, three such events were held and attended by over 160 suppliers combined, with a satisfaction rate of 98%.
- Carbon Footprint Product (CFP) Training:** SCGP (Packaging Business) organized online training for 10 high-potential suppliers to build awareness of climate resilience and selected those interested in emission reduction to attend further training on CFO and CFP registration with Thailand Greenhouse Gas Management Organization (Public Organization) in order to establish joint emission reduction targets in the future. Two suppliers were selected, namely Thai Wah Public Company Limited and Golden Lime Public Company Limited.



# Empowering Suppliers towards Sustainability

## Green Purchasing

## Contractor Quality Improvement

### Cement-Building Materials

**Business:** SCG Ceramics Plc., in collaboration with suppliers, studied and sourced agricultural waste from around its plant to ensure an adequate and continuous supply for use as feedstock for Biomass Hot Air Generators (HAG) instead of natural gases, thus creating added value for agricultural waste and reducing greenhouse gas emissions. There are 4 suppliers participating and 3 plants using biomass supplied through this project.

### SCGC (Chemicals Business)

joined hands with suppliers to develop green products and services and registered them as green vendors. In 2023, SCGC registered two additional green vendors and increased green procurement from 17% to 21%. The two vendors were:

- Srithai Superware Public Company Limited developed high-quality returnable plastic pallets from SCGC's broken plastic pallets.
- SS & R Precision Company Limited improved pelletizer blade sharpening technology, enhancing its efficiency by 50% and reducing environmental impacts from the use of lubricating oil as 10% of the oil was recovered for reuse.

### SCGP (Packaging Business)

worked with suppliers to improve safety and environmental performance to meet SCGP's standards. In 2023, 23 suppliers joined the initiative, including:

- Nilengineering 2005 Limited Partnership launched a project to recover leftover coolants in tanks for reuse.
- Mitmaitri 1994 Company Limited initiative a Do's and Don'ts project to communicate behaviors that incurred safety risks.

### Supplier capacity building plan for Supply Chain Decarbonization

In 2023, SCG has conducted a supplier segmentation assessment in accordance with the principles of WBCSD, in which the progress from the agreed plan is periodically monitored. 115 suppliers were evaluated and grouped based on their readiness or level of emissions. The information collected will be further developed into a supplier development plan in 2024, which aims to increase the efficiency of greenhouse gas emissions management in the supply chain.

“Srithai Superware and SCG jointly developed plastic pallets with the intention to reduce greenhouse gas emissions and comply with environmental laws, such as the development of ISO1400, G14, and carbon footprint reduction projects. In addition to reducing production costs and continuously developing new products to the market, the ideas developed collaboratively can be expanded upon.”



**Tanan Sodsangasuk**  
Sales & Marketing Director  
Srithai Superware Public  
Company Limited

## Success Cases

### Our digital platform serves

# 5,300

suppliers

#### Supplier Portal:

The Supplier Portal is a platform developed by SCG to collect supplier data from every business unit

to reduce data collection time and

redundant communications and enhance the efficiency of procurement, management, auditing, and supplier risk assessment.

The goal is to plan supplier development and facilitate various supplier-related processes through an online system, such as the signing of the Supplier Code of Conduct, vendor registration, and submission of vital documents.

As a result, 92 new vendors registered with SCG, bringing the total number of suppliers to over 5,300, with a target set to increase the number to 9,000 in the future.



# 98%

#### SCGC (Chemicals Business)

collaborated with its suppliers to develop a Vendor Portfolio Management System called

**VeNus** to facilitate

work and two-way communication with suppliers. This allows suppliers to swiftly access performance evaluation data, facilitating enhancements across various operational dimensions. Additionally, it facilitates prompt communication of feedback with SCGC buyer.

In 2023, more than 3500 suppliers registered in VeNus, achieving a remarkable satisfaction rate of over 98% within its system.





Water Management



# Hands-On with All Stakeholders in Combating Drought, Reducing Water Consumption and Enhancing Community Well-Being.

Floodings and drought disasters continue unabated due to climate impact, notably El Nino in 2023 which affected communities, society and SCG's production. SCG therefore implements disaster preparedness through monitoring and forecasting jointly in partnership with state agencies and other organization for water piping system and network to mitigate risk to industrial production. SCG actively disseminates technical knowledge and expertise as leader of water resource management in the private sector.



Performance Indicator	2023	Progress	Target
Reduce water withdrawal by 2025 compared to 2014 base year	24.09%		23%

## Strategy

1. Reduce water-related risk through integrated water management.
2. Reduce water withdrawal by increasing consumption efficiency in production processes and product.
3. Ensure compliance of waste water treatment, monitor closely both volume and quality; incident reporting, root cause analysis; and reduce wastewater discharge.
4. Reuse treated water.
5. Restore water-related ecosystems and support water supply for community and agriculture.
6. Build capability employees to ensure integrated water management and optimization.

### Replenishing water back to Nature and Community



- Wet Forest Project at Lampang Cement Plant**  
 Cement-Building Materials Business rehabilitates and conserves ecosystem inside its Lampang cement plant by implementing the "wet forest system" according to the Royal Initiative since 2003. This system features a network of 7,000 check dams, forest fire break along 14,000 metres, solar-powered pumps to replenish water into the forest, the Stop Log in Huay Pu creek which boosts water reserve for the "wet forest system" in the amount of 12,000 cubic metres per year, on top of a separate water reserve system for plant consumption.
- Conserving Environments from the Mountain through the Sea** SCGP (Packaging Business)'s Wangsala complex and Ban Nonghin-Khaosoong Community in Kanchanaburi jointly implemented a check dam project to address drought. The project has a network of 10,550 check dams to date, with 500 added in 2023. The plan is to have 14,050 check dams by 2050.



## Eastern Region Water Management

Intense weather event of El Nino 2023 heightened water shortage risk in Thailand's eastern region. SCG Chemicals (SCGC) joined with key stakeholders in collective water management to ensure adequate supply for all.

### Participated Organization

Eastern Economic Corridor Water Management Subcommittee under the National Water Resource Committee (NWRC)

Water Trends Monitoring and Analysis Subcommittee of 17 Irrigation Offices nationwide, and 16 public agencies.

East Coast Basin Committee, Office of National Water Resource.

Water and Environment Institute for Sustainability, Federation of Thai Industries (WEIS FTI)

### Roles of SCGC (Chemicals Business)

Represents the industry in water risk management planning

Joins weekly preparedness and response meeting of water impact on industry.

Chosen as industry representative in the Eastern Basin Committee to give inputs in management and prioritization of water supply, drought and flooding management in Rayong, Chonburi, Chantaburi and Trad.

As Institute Chair and Lead of Water Working Group, with the goal of promoting efficient water management and fostering collaboration among water users and managers at basin and national levels.

## COTTO water saving products

- COTTO sanitaryware VIZIO** won the Product Innovation Awards 2023, water conservation category with 6 liters per minute through ION Mist : Sterilized Water, an innovative cleaning system that works to reduce up to 99% of bacteria buildup.



- Showerhead model CT6216** uses water at the rate of 6.4 liter per minute for the soft version, and 7.2 liter per minute for the hard version, saving up to 20% water compared to the standard of 9 liter per minute.



## Success Cases

### Less Water Use in Factory

# 90,000

cubic meters per year.

#### SCGC (Chemicals Business)

studied, improved and optimized efficiency!

In 2023, efforts continued with key projects



- Map Ta Phut Olefins** boosted efficiency of its Low Pressure Steam, reducing water use by 11,650 cubic meters per year.
- Thai Polyethylene** switched conditioning chemicals in its cooling tower, to save 8,000 cubic meters per year.
- Thai Plastic and Chemicals (TPC)** uses technology to monitor and check water data usage to boost efficiency, resulting in saving 15,000 cubic meters per year.



# 2.2

cubic meters per year

SCGP (Packaging Business) uses less water due to reuse of treated water within the sealed systems inside equipments. It is installing more of these alongside filtering system for treated water for reuse in production processes.

**Air Quality Management**



Industrial production process may generate air pollution potentially affecting health of workers, community and environment while the authority imposes more stringent laws and regulations. Therefore, SCG seeks to improve and deploy technology to minimize its pollution emissions, in all aspects particularly dust, gas, volatile organic compounds (VOCs) and odor. SCG is working towards the target of complete coverage of air quality management in its factories in Thailand and abroad, alongside collaborating with key stakeholders namely communities, local government, and private agencies.

# Scaling Up Air Quality Management

Performance Indicator	2023	Progress	Target
Reduce dust emissions by 2025 compared to 2020 base year	7.7%		8%

## Strategy

1. Set air pollution emission targets in line with international standards amongs peers, and not exceeding legal limit.
2. Use best-in-class technology to reduce air pollution, both at source and emissions, while constantly monitoring air quality.
3. Engage with community and stakeholders regularly to hear their thoughts on air pollution.



## Extending Continuous Emission Monitoring System (CEMs) Coverage

**Cement-Building Materials Business** achieved 100% coverage of installation of CEMs for dust, sulfur dioxide (SO<sub>2</sub>) and nitrogen oxide (NO<sub>x</sub>) in Thailand since 2020 and in 2023 has completed:

- Installing Continuous Emission Monitoring System (CEMs) for hydrogen chloride (HCl) and mercury (Hg), on top of the legal requirement.
- Planning and preparing realtime reporting of CEMs data only to the Department of Industrial Works, as the law is being enforced in 2024.
- Collecting CEMs data from factories in Laos, Vietnam, Cambodia, and Indonesia, replacing conventional data collection.
- Continuing at-source air pollution management consistently, controlling production processes to reduce pollution in factories located inside industrial zones and community areas.
- Monitoring and assessing pollution from stacks, to be better than legal minimum requirement to reassure stakeholders particularly community around the factories.

**SCGP (Packaging Business)** achieved 100% coverage of CEMs installation in paper packaging factories in Thailand and scaling up in the following aspects:

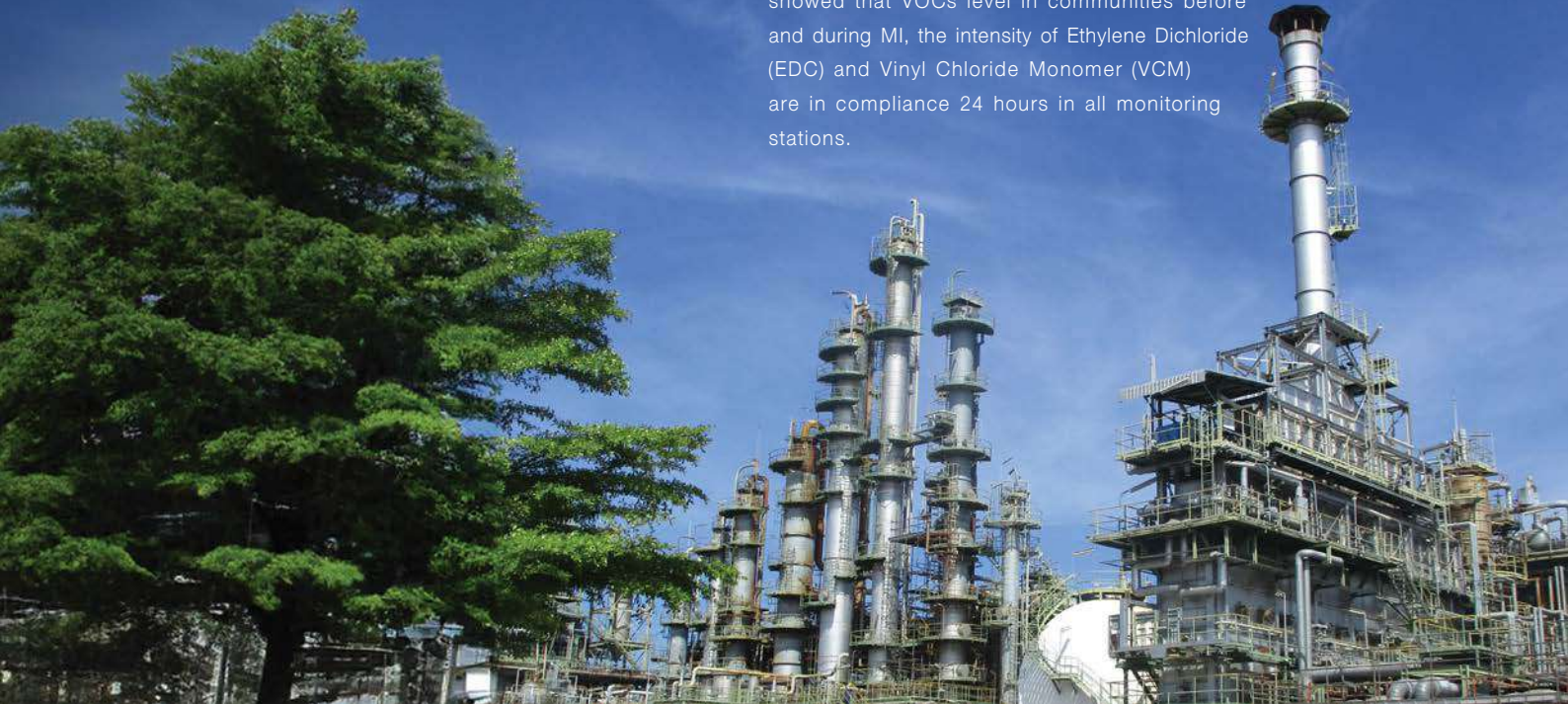
- Installation of Total Reduced Sulfur (TRS) on top of CEMs among its pulp and paper factors to monitor and reduce sulfur-based pollutants as required by laws. This is to be completed in 2024.
- Paper packaging factories in Indonesia and the Philippines



## Control and Reduce VOCs

**SCGC (Chemicals Business)** continues its commitment to manage and minimize its VOCs emissions by applying best practice and best-in-class technologies including highly efficient incinerator, Vapor Recovery Unit (VRU) and Carbon Canister.

- Thai Plastic and Chemicals PCL (TPC) managed volatile organic compound during legally mandated maintenance and inspection (MI). Prior to the MI shutdown, it collected VOCs sample, conducted VOCs check during MI, properly covered equipments to prevent odor. Furthermore, it conducted check of VOCs in 4 spots around the factory and at 3 community locations. Upon MI completion, it checked for leakage and conducted after action review. Results showed that VOCs level in communities before and during MI, the intensity of Ethylene Dichloride (EDC) and Vinyl Chloride Monomer (VCM) are in compliance 24 hours in all monitoring stations.



## Success Cases



**Proactive Environment Management Pilot**  
**SCGC (Chemicals Business)** is chosen prototype factory in VOCs management to transmit the good practice to various factories of companies joining the pilot CoP (Code of Practice) project in Map Ta Phut Industrial Estate. Proactive management and VOCs surveillance are key features in this public-private partnership of air quality management.

“Thank you SCGC for its broader vision than itself to consider development of the entire Map Ta Phut area, through its leadership in Code of Practice project for proactive solution towards sustainability.”



**Assoc. Prof. Dr. Sarawut Thepanondh**  
Dean, Faculty of Public Health, Mahidol University, and Air Quality Expert

### Detect Odor & Monitoring (DOM) SCGP (Packaging Business)

continually manages odor from its production, notably through technology to reduce at source and monitoring, resulting in less complaints.



- Detect Odor & Monitoring (DOM) system development and installation in pulp and paper factories, achieving 100% coverage since 2022.
- In 2023, advancing DOM to enable identification of odor source from production process inside factory, and alerting staff via mobile phone for rapid response.



**Biodiversity and Ecosystem**



Rapid changes of nature and environment heighten the risks including natural disaster, business disruption from problems related to natural resources and biodiversity. Therefore, SCG is determined to develop its risk management capacity by initiating reporting according to Task Force on Nature-related Financial Disclosures (TNFD) that discloses a risk assessment and possibilities by the LEAP approach (Locate, Evaluate, Assess, Prepare). Stakeholder engagement is a crucial element in this effort towards net positive impact and biodiversity recovery.

# Partnership in Balancing Ecosystem Sustainably

Performance Indicator	2023	Progress	Target	Strategy
Net Positive Impact in post-closure limestone quarry, with the first one in 2052	<b>8.1%</b>		<b>100%</b>	<ol style="list-style-type: none"> <li>1. Manage biodiversity according to global benchmarks.</li> <li>2. Engage and acknowledge with the community and stakeholders on ecosystem and biodiversity conservation.</li> <li>3. Be a role model in biodiversity and ecosystem conservation for extension to other areas.</li> </ol>
Similarity Index between rehabilitated quarry and natural buffer forest	<b>67%</b>		Over <b>60%</b>	
FSC™-biodiversity forest compared with agroforestry coverage	<b>13.7%</b> <b>4,660</b> rais		at least <b>10%</b>	



## FSC™ Agroforestry Management

SCGP (Packaging Business)'s Siam Forestry engages with the community on biodiversity conservation according to FSC™ guidelines.



**Native species seedlings** for planting in 447 rais of degraded forest for rehabilitation and conservation.



**Insect diversity survey** to collect species data as parts of biodiversity indicators on top of flora and fauna data because insects have a shorter lifespan and are quick to respond to ecosystem change.



**Long Term Ecosystem Planning and Monitoring** to conserve biodiversity, rehabilitate and develop sustainable ways the community benefit from it.





## Success Cases

# 120

plant varieties

# 123

wildlife species

## Ecosystem Rehabilitation in Mining Areas

Cement-Building Materials Business implemented the project to rehabilitate the nature and environment around mining areas, in partnership with agencies in Thailand and abroad.

**Khao Yai Da Watershed Rehabilitation Project, Rayong**  
SCGC (Chemicals Business) and BEDO (Public Organization) assessed the Payment for Ecosystem Services (PES) of Khao Yai Da using international indicators. SCGC has been part of the public-private partnership in this conservation for over a decade through reforestation, and check dams' construction, which contributes to improve community livelihoods. In 2022, PES is valued at 198.8 million baht per year, with 120 plant varieties identified alongside 123 wildlife species.

# 896

rais

**Expansion of Conservation**  
SCGP (Packaging Business) recognized the opportunity to elevate forest status with titled land. In 2023, it leased 896 rais from private holders in Ratchaburi province for forest conservation. To date, conservation acreage totalled 4,660 rais, accounting for 13.7% of FSCTM agroforest areas. Similar expansion plans are underway.

Restoration  
Projects



Collaboration

### Khao Tub Khwai Iron Mine in Lopburi

- Rehabilitate an area of 193 rais around the pit.
- Convert the pit into water reservoir with capacity of 300,000 cubic meters.
- Organize Eastern Region Forest Rehabilitation from 2023-2027.

- Royal Forest Department
- Department of Primary Industries and Mines
- Department of Mineral Resources

### Drones in Reforestation of Mae Tan Quarry in Lampang

- Research into using drones to distribute seeds on slopes or hard-to-access areas to improve efficiency of reforestation and monitor the result with less manpower.
- The 129-rais coverage in Mae Tan has growth rate of 40%.
- Similar trial is underway at a 10-rai site in Mae Ping National Park.

- Mae Ping National Park, Lamphun province

### Biodiversity survey by Kampot Cement, Cambodia

- Baseline data collection to plan biodiversity rehabilitation and post-quarrying/operation.
- The survey identified 197 plant varieties, 74 bird species, 32 reptile and 19 mammal species.

- Royal University of Agriculture (RUA) Phnom Penh, Cambodia





Human Rights



# Overseeing Human Rights Across the Value Chain

Due to its overseas business expansion and the acquisition of companies with different standards, SCG has reviewed human rights risks comprehensively and extended its best practices from Thailand to its operations overseas to deal with the challenges of its operations across the value chain as well as its own transition to a low carbon business. To ensure a fair transition, SCG actively develops its personnel, suppliers, contractors, and business partners to help them adapt to changes while also providing knowledge, innovation, technology, and access to funding to its business partners as they transition to a low carbon society alongside SCG.

Performance Indicator	2023	Progress	Target
Human rights violation	1 case		0 case
Percentage of employees who undergo human rights training and pass Ethics e-Testing	100%		100%
Proportion of female employees in all management positions by 2025	30.6%		27%

## Strategy

- Integrate human rights, diversity, and inclusion into business operations across the value chain both in Thailand and abroad.
- Foster value and initiate human rights programs for all stakeholders across the value chain and society.
  - Employees: Respect rights as a fundamental principle and enhance diversity and inclusion.
  - Contractors: Minimize risks of human rights violation and enhance quality of life in work environments with respect to labor, health and safety, and well-being.
  - Suppliers: Elevate human rights risks management that may affect the value chain.
  - Communities: Foster engagement based on respect for fundamental rights and enhance quality of life.
  - Customers: Deliver products, services, and solutions that offer quality and safety, which are part of fundamental rights, and promote quality of life.
  - Other Stakeholders: Continuously undertake human rights risk management to prevent adverse impacts that SCG has caused or contributed to or directly linked to its activities across the value chain.
- Serve as a model and share human rights experience with other organizations.

## Human Rights Framework



# Human Rights Due Diligence Process



Identify issues and assess risks covering relevant industry, and country specific issues, as well as all stakeholders and vulnerable groups.

- Forced labor
- Human trafficking
- Child labor
- Freedom of association and Right to collective bargaining
- Equal remuneration
- Discrimination
- Others (Health and safety, Harassment, Personal data protection, Community rights)

Create risk mapping and systematic periodic review.

Foster engagement with stakeholders

- Employees
- Suppliers/Contractors
- Customers
- Communities
- Joint ventures

- Whistleblowing system
- Ethics e-Testing
- Engagement survey
- Governance Risk and Compliance (GRC)

- Fostering awareness, knowledge, and understanding
- Communicating with both internal and external stakeholders

## Salient Human Rights Issues in 2023

### Health and Safety

“ We shouldn’t try to define gender. We’re beyond that already because everyone is human. We just live together, behave appropriately for the time and place, and respect one another. ”



**Vanchak Montrivan**  
BE YOU Club Live Talk  
EP.2 You & Me & Me  
very happy together

## Employee Care regarding Human Rights

### Diversity, Equity and Inclusion



**BE YOU Club:** Hosted a series of Live Talks to promote an inclusive organizational culture that embraced diversity and to foster teamwork and a happy workplace. A consultation channel was also provided by SCG Diversity Committee.

### Migrant Worker

**Migrant worker protection:** Encompasses quality of life, benefits, performance assessment, training and communication in their local languages, and access to whistleblowing channels under the same management system as SCG.

### Employment Conditions

**Job Profiles for 18 Professions:** Job profiles for 18 job professions were established. Job descriptions and qualifications are clearly defined to enable employees to plan their development according to their areas of expertise.

#### Your Career Your Choice

An employee management system has been developed to allow employees to be transferred to new positions according to their knowledge and competency with transparency and equitability.

## Communication and Collaboration



- SCG communicated regularly with employees at all levels to foster knowledge and awareness of issues, such as harassment, discrimination, and provided examples of human rights violation in other companies.
- SCG communicated with management level employees to foster awareness and best practices on human rights issues deemed vital among SCG’s personnel.
- An open house activity was organized 2 times for the Beginner and Intermediate-level Human Rights Program, organized by the Rights and Liberties Protection Department, Ministry of Justice, to exchange knowledge of human rights management and foster a network of human rights activists in Thailand.



### Success Case

**Human Rights Award (Outstanding Achievement) in the large business organization category for a fourth consecutive year** from the Rights and Liberties Protection Department, Ministry of Justice.



**Employee Care and Development**



# Developing ESG Programs and Supporting Key Talents



SCG is committed to sustainable development practices and ESG4Plus in its business operations for the preparation to transform the organization towards a low carbon society. As such, SCG strives to further educate all employees at all levels on ESG by developing and revising its courses and incorporating ESG content into their learning. In addition, SCG promotes self-development among employees to ensure their adaptability to change while also fostering their engagement with the organization so as to retain its personnel, particularly key talents, who are the vital driving force of the business. This is achieved by implementing best practices in employee care from the moment they join the organization until after their retirement.

Performance Indicator	2023	Progress	Target
Employee engagement rate based on the total number of domestic employees (surveyed every year)	69%		70%
Employee satisfaction rate	65%		60%
Percentage of target employees in Thailand who create and follow their Individual Development Plan (IDP) to completion continuously every year	100%		100%

## Strategy

1. Create value for the organization to attract talents and competent prospective employees.
2. Ensure that employee care is equitable and thorough to foster employee engagement.
3. Enhance employee competencies to meet the Company's competitive needs and enable them to work happily and work in a team effectively.
4. Foster a culture of learning by giving employees an opportunity to develop themselves according to their interest using the most suitable learning method for themselves through hard skill and soft skill courses and through diverse learning channels.
5. Create a conducive learning factor with the Learning Management System (LMS) to ensure uniform quality and meet user needs.

## Employee Development



### Target Employees

- The Board of Directors of each business unit selects key talents and potential successors to develop their individual development plans (IDP) and begin developing their knowledge, skills, and leadership in accordance with their roles and responsibilities in line with SCG's policies and business strategies.
- Developing ESG programs, such as ESG Leadership Program.



### General Employees

- Developing ESG Net Zero, a digital program that fosters employee awareness towards net-zero emissions.
- Adding the topic of ESG in Business Concept Development (BCD).
- Fostering a learning atmosphere through various activities, such as Use Case Sharing and LMS PROMPT LEARN Promotion: Book Summary.
- Organizing virtual seminars and English courses for employees overseas.



### Learning System Improvement

- Developing its own Learning Management System (LMS) platform for use in place of external platforms to better meet functional needs and employee demand.
- After the COVID-19 pandemic, the proportion of classrooms and workshops has been increased, while digital courses are maintained where effective. Various programs have also been improved to have a 70:20 learning mode ratio to better align with the 70:20:10 Learning Model as well as promote hands-on practice and development of practical skills with maximum efficiency.

## Success Cases

# 86.75%

**Cement and Concrete Technology 2023:** Content on ESG and the Net Zero Pathway has been added to educate new engineers with 0-2 service years on decarbonization practices. The average post-learning knowledge assessment score is 86.75%, a 35% increase from the pre-learning score.

# 5

**Projects**

**Management Acceleration Program (MAP-8):** The program has generated five projects that can be further developed for business purposes, a total of 71% of all projects created.

# 6

**Projects**

**Marketing Boot Camp 2023:** The development program of marketing professionals has produced six marketing projects with potential for further development out of the 13 projects proposed, including the COTTO Smart Public Toilet and KIT Carbon, a carbon management platform for construction industry.



## Employee Care

- **Hybrid Work Policy:** SCG allows on-site and remote working on the basis of both regular or special employment to cater to the diverse needs of the new generation and enable them to achieve work-life balance.
- **Employee Well-Being:** SCG offers knowledge and consultation to employees on physical, mental through the Doctor Anywhere System, financial, and social.
- **Flexible Benefits:** Employees can customize their welfare and benefits to suit their needs, such as medical care, health checkups, eyeglasses, and fitness activities.
- **Scholarships:** Scholarships are granted to applicants studying in Thailand or other countries, such as the US, Britain, China, and India, to recruit Thai and international employees with qualifications aligning with SCG's future business needs.



Community and Social Development



# Strengthening Partnership... to Scale Up Ecobalance and Social Capital

SCG continues with its social development projects focusing on the areas of economy, education and health, with the goal of nurturing a more inclusive society. The aim is to create communities where people thrive in safety, experience secured livelihoods, achieve self-sufficiency and become a role model for replication in other regions. Embedded in these projects are efforts to cultivate a shared awareness of coexistence with the environment and transitioning to a decarbonized society.



Performance Indicator	2023	Progress	Target
Reduce inequality gaps in occupation, education and health, cumulatively from 2021-2030	32,743 individuals		50,000 individuals

## Strategy

1. Leverage expertise from both internal SCG and external sources, to enhance the capability of a community to be self-reliance and social care.
2. Engage the active involvement of SCG staffs and all stakeholders in contributing to social causes and promoting sustainability.
3. Create innovative solutions that address the needs of community and effectively tackle social issues.
4. Create a sustainable development model and expand its implementation within various networks.



## Education and Employment Support for Youth




SCG Foundation broaden the public-private partnership in implementing “Learn to Earn” concept aimed at providing youth with essential job skills to empower them in establishing and sustaining their own livelihoods. The program features scholarships tailored to meet the current demand for domestic jobs, including:

- **Short-term Scholarship (Duration: Less than 1 year)**  
Fast learning, swift graduation, facilitating entry into high-demand sectors like health, IT and smart agriculture. Currently, over 80% of young scholarship recipients are employed.
- **Scholarship for Emerging Social Development Practitioners (Community Seedlings)**  
Designed for recipients to return to their home communities, establishing their own livelihood and contributing to community. Currently, 61 persons of young social development workers are active across Thailand.



**A success story:**  
Miss Natthinee Samer faced a life-altering challenge in Grade 2 with the loss of both her parents. Despite enduring physical and mental hardships, her resilience prevailed. In 2020, she received a short-term skill scholarship from SCG Foundation. Now, she is employed full-time as a nursing assistant in the Medicine Department of Vajira Hospital.

# Partnership for a Better Society

Project	Participating Agency	SCG's Role
 <p><b>Premprachakorn Canal Improvement Project in Bangkok</b></p>	<ul style="list-style-type: none"> <li>• Prime Minister's Office</li> <li>• Ministry of Interior</li> <li>• Bangkok Metropolitan Administration (BMA)</li> <li>• Community Organization Development Institute (Public Organization) by Ministry of Social Development and Human Security</li> <li>• The Treasury Department</li> <li>• Private sector partners and network</li> </ul>	<p><b>Cement and Green Solutions Business</b>            Collaborating with public and private sectors and networks to enhance the community and quality of life for the residents in 6,386 households along Premprachakorn Canal. The primary goal include enhancing the well-being of the residents, promoting income generation alongside environmental conservation and fostering a green society, focusing on community participation to ensure sustainability.</p>
 <p><b>Nets Up</b></p>	<ul style="list-style-type: none"> <li>• Ministry of Natural Resource and Environment (MONRE)</li> <li>• Small-scale Fishers Network of Rayong province</li> <li>• Business partners and networks for marine ecosystem protection</li> </ul>	<p><b>SCGC (Chemicals Business)</b> Establishing comprehensive collaboration along the value chain from upstream to downstream by partnering with coastal fisherfolks in Rayong province to gather discarded fishing gear which serve as feedstock for the production of High Quality Post-Consumer Recycled Resin. The resulting outputs, yarns, are then supplied to related industries such as textile. The goal is to address the issue of fishery scraps becoming marine debris and concurrently fostering increased community income. There are ongoing plans to expand this initiative to 23 coastal provinces in Thailand.</p>
 <p><b>Paper Band</b></p>	<ul style="list-style-type: none"> <li>• Trainers</li> <li>• Communities around SCGP factories</li> </ul>	<p><b>SCGP (Packaging Business)</b>            Supporting 4,300 kilograms of paper band, the excess from the production process, as raw material for communities to transform into handicraft products, promoting income generation and creativity among the communities. Since its initiation in 2019, the project has generated cumulatively a total income of 6.7 million baht for communities.</p> <ul style="list-style-type: none"> <li>• Runner-up Award in the 2023 Business Model Contest "Ploydai...Pasuk" jointly organized by the Department of Industrial Works and UNIDO</li> </ul>

## Success Cases

Delivering Medicare Services to

**3,000** beneficiaries residing in remote rural areas



**Paper Camp Bed for Mobile Medical Unit** SCG Foundation and SCGP (Packaging Business), in collaboration with the Foundation for Good Governance on Medicine and its Medicine Governance Certification Program, are jointly involved in the development of paper camp beds designed for use in frontline mobile medical units. These paper camp beds are purposed to serve the needs of healthcare professionals and patients in mobile medical units, providing safety, mobility and cost efficiency. To date, the initiative has positively impacted 3,000 users.

- Winner of the 2023 National Innovation Award, in the social and environment category.

**1,208** beneficiaries from Digital Telemedicine Program



SCG, through DoCare, develops a Tele-Monitoring solution that consistently tracks and collects accurate health data, coupled with Telemedicine remote counselling for proactive health screening and treatment data documentation.

- Aids in saving time and reducing travel costs for patients in remote areas and those dealing with non-communicable diseases.
- Supports Reoriented Holistic Health Service Delivery Institution and Yuenyen Social Enterprise to implement 31 such systems for caring for individuals in five pilot provinces namely, Lopburi, Phetchabun, Udonthani, Bangkok and Ratchaburi, assisting doctors in the care of 1,208 people.





Robotic Arm Pe

PROCESSING....





# PERFORMANCE

## About this Report

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### Sustainability Performance Data

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### Operating Results of Cement Business in Accordance with Global Cement and Concrete Association (GCCA)

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### Mitigation Actions on Salient Human Rights Issues 2023 of SCG

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### Supplier Governance and Enhance Towards Sustainability

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### Subsidiaries Included in Sustainability Report 2023

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### Assurance Statement

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### GRI Content Index

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### Task Force on Climate-related Financial Disclosures (TCFD)

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### Sustainability Accounting Standards Board Response (SASB)





# About this Report

SCG has published annual sustainability report since 2011, disclosing of sustainability performances of three core business units namely Cement-Building Materials Business, SCGC (Chemicals Business) and SCGP (Packaging Business). Sustainability performance in this Report is SCG's information which the top management deems relevant and of value to stakeholders.

## Reporting Scope

Economic, environmental, and social information consolidated performances of all subsidiaries as defined by controlling stake aligned with its financial reporting in the annual report. A full list of these companies is on page 130-138, for the period of 1 January 2023 - 31 December 2023.

The report is compiled and prepared in accordance with Global Reporting Initiatives (GRI Standards 2021), and incorporating performance reporting prescribed by relevant international standards including:

- Task Force on Climate-related Financial Disclosures (TCFD) in page 146
- Sustainable Development Goals (SDGs) in page 47
- Global Cement and Concrete Association (GCCA) in page 124-125
- Sustainability Accounting Standards Board (SASB) in page 149-150

## Sustainability Management System

SCG applied the management systems according to various international standards in operations such as quality management system standards, environmental management system standards, occupational health and safety management system standards, etc. To ensure that SCG has a sustainable management system covering the entire organization, SCG has established sustainable development guidelines such as the Sustainable Development Guidelines, Environmental Management Guidelines, Occupational Health and Safety Management Guidelines. Subsidiaries under business units of SCG have been certified international management standards, i.e. ISO 9001 - Quality Management System, ISO 14001 - Environmental Management System, OHSAS/TIS 18001/ISO 45001 - Occupational Health and Safety Management System, and ISO 50001 - Energy Management System. In 2023, 100% subsidiaries have been certified for Quality Management System, 96% for Environmental Management System, and 90% for Occupational Health and Safety Management System.



SCG Sustainable Development Framework



SCG Environmental Management Framework



SCG Safety Framework

## Reporting Assurance

Financial data in this report are from similar sources as in SCG Annual Report and verified by certified public accountants.

Environmental, social and governance performance data are verified as accurate and compatible substantively with GRI Standards version 2021 by third party as detailed in page 140-141

## Environment

Environment data presented here are from activities deemed to have significant impact, reported by companies with production processes, excluding entities with no significant impact on environment from such as sales offices, R&D laboratories, services and holding companies.

Data sources, i.e., accounting evidence, meter reading, production process data, evidence-based estimation are presented in absolute value. For specific consumption or emission, disclosure since 2016 has been improved for clarity, by comparing the year performance with that of Business As Usual (BAU) of base year. SCG uses 2007 as base year for energy consumption, 2014 for water withdrawal, and 2020 for air emissions. For climate target, it is set in term of absolute value.

Reporting of cement business within Cement-Building Materials Business follows the Global Cement and Concrete Association (GCCA) guidelines. Specific air emissions and heat consumption performances are calculated compared with clinker production. Specific GHGs emission and water consumption performances are calculated compared with cementitious production.

## Energy

Total energy consumption consists of thermal energy and electricity used in the space of companies/factories. The thermal energy portion shows volume and share of renewable and non-renewable energy.

Thermal energy consumption = fuel weight or steam volume (purchased volume or estimated stockpile variance) x heat value of fuel type (lab test results or supplier's data)

## Greenhouse Gas Emissions (GHGs)

GHGs data in this report represent emissions from operations calculated according to guidelines in WRI/WBCSD GHG Emissions Protocol:

### 1. Reporting Scope

- 1.1 Direct Scope 1 emissions from manufacturing processes and activities that are owned, and controlled by SCG. Examples include combustion of coal or natural gas in boilers, furnaces, vehicles; emissions associated with chemical reaction in production processes such as calcination in cement production. Direct scope 1 is excluded the combustion of biomass.
- 1.2 Indirect Scope 2 are emissions from purchased energy such as electricity, steam and hot air.
- 1.3 Indirect Scope 3 are emissions from upstream to downstream of SCG-related activities.

### 2. GHG Inventory

- 2.1 Direct Scope 1 emissions are calculated from
  - Combustion
    - Reporting of fuel use (weight or volume) such as amount of oil or natural gas x emission factor referenced to Thailand Greenhouse Gas Management Organization (Public Organization); TGO, Intergovernmental Panel on Climate Change 2006, (IPCC) or GCCA.
    - Fuel consumption (based on heating value) for instance amount of coal x heating value x TGO emission factor; otherwise, IPCC 2006 or GCCA.
    - Carbon mass balance from fuel consumption
  - Chemical reaction in production process, i.e., limestone is calculated using mass balance.

- Cement business reporting is reference with GCCA guideline.
  - 2.2 Indirect Scope 2 emissions are calculated on the basis of purchased electricity, steam or hot air consumption x GHG emission factors based on TGO, manufacturers or suppliers.
  - 2.3 Indirect Scope 3 emissions are calculated and reported in line with Corporate Value Chain (Scope 3) Accounting and Reporting Standard.
- 3. **Types of GHG emissions reported** include CO<sub>2</sub> CH<sub>4</sub> N<sub>2</sub>O HFCs PFCs and SF<sub>6</sub> which are converted and reported as CO<sub>2</sub> equivalent by Global Warming Potential (GWP) referenced with IPCC-defined GWP factors.

## Air Emission

Air emissions are the quantity of air pollution such as NO<sub>x</sub>, SO<sub>x</sub> and particulate matters from combustion and are part of the production process. Types of air pollutants depend upon each production process in which chemical substance is produced. Results and measurement method conform with the law requirements such as US EPA, or equivalent standard.

Air emission quantity reported is calculated based on concentration measured actual upon spot check conducted by laboratories certified by and registered with Department of Industrial Works, multiplied by hot air flow rate and production hours.

In addition, Chemicals Business, Packaging Business and Cement Business measure their air emissions from stack using (Continuous Emission Monitoring Systems, CEMs). Cement Business references measurement to GCCA guideline. (Details in page124-125)

## Water

Water management consists of the amount of water withdrawal, recycled water and effluents.

"Water withdrawal" means quantity of water drawn from various types of external sources namely surface water, groundwater, and other agencies. In terms of category, fresh water means water with less than 1,000 mg/L. of total dissolved solid while "other waters" contain over 1,000 mg/L. of total dissolved solid. Water withdrawn from water-stress area is estimated based on **Aqueduct Water Risk Atlas**.

"Recycled water" means the quantity of treated water returned to the process, excluding non-treated reused water such as cooling water.



“Water discharge” means quantify of effluences discharged into water sources such as surface water, groundwater, and other agencies, from the first reporting year of 2020, with reporting of discharge into stress area and effluent types in terms of Biochemical Oxygen Demand-BOD, Chemical Oxygen Demand-COD, and Total Suspended Solids-TSS.

## Industrial Waste

Industrial waste reporting is divided into hazardous and non-hazardous waste according to laws and regulations in each country where SCG operates, in terms of waste generation, waste management and waste in storage to demonstrate production efficiency and waste management efficiency according to the following:

- “Diverted from disposal” consists of reuse, recycling and treatment
- “Waste directed to disposal” consists of incineration for energy output, non-energy generating incineration, landfill and other disposal operations.

The amount of waste generation from production process is calculated using appropriate method on weighing, calculating or evidence-based estimation; whereas weighing of waste directed to disposal using scale yielded more precise result.

## Social

### Health and Safety

#### Numbers of Employees and Contractors

1. Employee is a full-time worker consisting of operational level, supervisory and technical staff level, managerial level, interns (probationary) and special-contract employees.
  - Operational level is a front-line worker who uses skills and techniques in their daily operations.
  - Supervisory and technical staff level is a front-line manager responsible for daily management or with subordinates.
  - Managerial level is a manager responsible for addressing business strategies or policies, delegating and controlling supervisory and technical staff who implement policy and daily work.
  - Special contract employee is temporarily employed for a specific period.
2. Contractor is a person who consented to work or provide service or benefit to the company apart from the company’s employee per the definition above, which could be divided into 3 types of contractors are as follow:

- 1) Workplace Contractor is a contractor working for the company, whose work and/ or workplace is controlled by the company (excluding Transportation Contractor).
  - 2) Direct Transportation Contractor is a transportation contractor with operation under SCG’s brand.
  - 3) Other Transportation Contractor is a transportation contractor without operation under SCG’s brand.
- Workplace Contractor data covered in the report are calculated for number of hours worked.

Third Party is other people, neither employee nor contractor, who are not working for the company and are not covered in this report.

#### Hours Worked Calculation

1. Data from a clock-in system, HR database, accounting, or relevant administrative functions.
2. In case the companies/ plants do not have a clock-in system or database system, or other record document the formula below is applied to estimate hours worked.

**Number of hours worked =**  
 (number of workers x number  
 of working days x number  
 of normal hours worked per day) +  
 total number of overtime  
 hours worked (if any)

#### Health and Safety Data Recording

SCG records the data based on work-related in health and safety as followed:

1. Fatality Work-Related Injury and Occupational Illness & Disease Rate from workplace is the number that results in fatality case (person) per 1,000,000 hours worked.
2. Total Recordable Work-Related Injury and Occupational Illness & Disease Rate from workplace is the number that results in fatality, lost time, restricted work or medical treatment case (person) per 1,000,000 hours worked.
3. Number of Fatality Work-Related Injury is the number that results in fatality regardless of sudden death or suffering consequences and subsequent death.

4. Fatality Work-Related Injury Rate from workplace is the number that results in fatality case (person) per 1,000,000 hours worked.
5. Total Number of Recordable Work-Related Injury from workplace is the number that results in fatality, lost time, restricted work or medical treatment.
6. Total Recordable Work-Related Injury Rate from workplace is the number that results in fatality, lost time, restricted work or medical treatment case (person) per 1,000,000 hours worked.
7. Number of High-Consequence Work-Related Injury from workplace is the number that results in high-consequence, excluding fatality.
8. High-Consequence Work-Related Injury Rate from workplace is the number that results in high consequence excluding fatality case (person) per 1,000,000 hours worked.
9. Lost Time Injury Frequency Rate from workplace is the number of work-related lost time injury case (person) per 1,000,000 hours worked.
10. Severity Work-Related Injury Rate from workplace is the number of lost workday (day) from work-related lost time injury per 1,000,000 hours worked.
11. Number of Fatality Occupational Illness & Disease from workplace is the number that results in fatality regardless of sudden death, or suffering consequences and subsequent death.
12. Total Number of Recordable Occupational Illness & Disease Rate from workplace is the number that results in fatality, lost time, restricted work or medical treatment.
13. Total Recordable Occupational Illness & Disease Rate from workplace is the number that results in fatality, lost time, restricted work or medical treatment case (person) per 1,000,000 hours worked.
14. Near Miss Frequency Rate is the number of near miss cases per 1,000,000 hours worked.

Lost Time is work-related injury, occupational illness & disease that causes the injured absence from work on the next working day or the following shift, as well as the case that such injury, occupational illness & disease leads to leave of absence as the person is incapable of returning to work after the incident.

High-consequence work-related injury is injury that results in fatality, handicap, disability, organ loss, or in an injury from which the worker cannot, does not, or is not expected to recover to pre-injury healthy status within six months.

## Employees

### Average Wage Ratios

Employees refers to persons who work full time for the company as specified in the employment contract and can be categorized into executives, management

employees, and non-management employees. The term encompasses employees of Cement and Building Materials Business, SCGC (Chemicals Business), and SCGP (Packaging Business).

Wage refers to salary paid on a monthly basis to employees as prescribed by the company.

Other remuneration refers to any remuneration in addition to salary, given as incentives or special performance-related pay, as well as other monetary rewards such as bonus.

Reporting of average wage ratio calculated solely on salary, and average remuneration ratio calculated on salary and other remuneration throughout the year, and comparative average between female and male employees in different levels including gender pay gap analysis, is in accordance with GRI 405-2.

## Governance

### Double Materiality Assessment

The annual basis of double materiality assessment is in line with the principles of double and dynamic materiality, which consider both external factors affecting the organization and the impacts of the organization's operation on the external environment. It is compatible with international guidelines as detailed in page 38.

### Supplier Management

- Number of Tier-1 supplier, significant supplier in Tier-1, spend on significant supplier in Tier-1 and significant supplier in non Tier-1.
- Number of supplier assessed assessment, significant supplier assessed and supplier assessed with substantial actual/potential negative impact.
- Number of suppliers in capacity building program and supplier supports in corrective action plan implementation and supplier assessed with substantial actual/potential negative impact supported in capacity building program and corrective action plan implementation.



This report and its predecessors can be downloaded from [www.scg.com](http://www.scg.com)

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## Sustainability Performance Data

# Economic Performance

SCG continues to maintain business stability with increased profits, even though revenue from sales decreased due to the global economic slowdown.

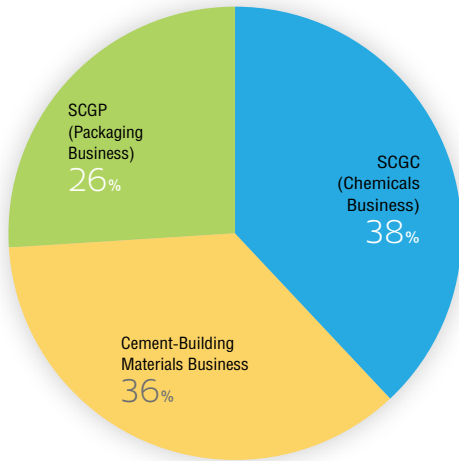
Performance Data	2019	2020	2021	2022	2023	GRI Standards	SASB
Revenue from sales (Billion Baht)	438.0	399.9	530.1	569.6	499.6	GRI 201-1	
Profit for the year (Billion Baht)	32.0	34.1	47.2	21.4	25.9	GRI 201-1	
EBITDA (Billion Baht)	75.1	74.6	91.9	61.9	54.1	GRI 201-1	
Employee compensation comprising salary, wage, welfare, and regular contributions (Million Baht)	48,139	46,796	47,921	50,732	50,190	GRI 201-1	
Dividend to shareholders (Million Baht)	16,800	16,800	22,200	9,600	7,200	GRI 201-1	
Interest and financial expenses to lender (Million Baht)	6,442	7,082	6,758	7,523	10,297	GRI 201-1	
Taxes to government and local government authorities such as income tax, local maintenance tax, property tax and other specific taxes (Million Baht)	6,143	7,190	8,430	6,685	6,153	GRI 201-1	
Tax privilege and others from investment promotion, and research and development (Million Baht)	1,388	1,149	1,829	1,054	1,248	GRI 201-4	
Non-compliance case through SCG Whistleblowing System (Cases)	30	38	30	51	55	GRI 205-3	
Customer Satisfaction - SCG Contact Center (%)	100	100	100	100	100		
Average Customer Satisfaction - All business unit (%)	94	94	94	94	94		
Contributions to organizations (Million Baht) <sup>(1)</sup>	22.2	13.79	11.31	30.9	27.8		
Contributions to political activities (Million Baht) <sup>(2)</sup>	0	0	0	0	0		
Suppliers that assessed Environmental, Social and Governance (ESG) Risks (% of procurement spending)	100	100	100	100	100		
Procurement Spending by Geography (% of procurement spending)							
• Domestic	58	57	40	50	55		
• Regional	42	43	60	50	45		
Revenue from Sales of High Value Added Products and Services (Billion Baht)	179.2	126.1	182.7	195.5	167.7		
(%)	40.9	31.5	34.5	34.3	33.6		
Revenue from Sales of SCG Green Choice Products and Services (Billion Baht)	128.8	130.4	216.0	289.7	270.7		EM-CM-410a.2
(%)	29.4	32.6	40.7	50.9	54.1		
Revenue from Sales of Products and Services designed for use-phase resource efficiency (Billion Baht) <sup>(3)</sup>	NA	0.022	4.870	27.46	71.5		RT-CH-410a.1
(%)	NA	0.02	2.00	11.6	14.3		
Revenue from Sales of Sustainable Construction Products and Services (Billion Baht)	60.4	59.6	69.4	71.8	59.3		EM-CM-410a.1
(%)	13.8	14.9	13.1	12.6	31.3		

<sup>(1)</sup> The top seventh organizations contributed by SCG are Alliance to End Plastic Waste (AEPW), Thai Cement Manufacturers Association (TCMA), World Business Council for Sustainable Development (WBCSD), Global Cement and Concrete Association (GCCA), The Federation of Thai Industries, Global Compact Network Thailand, and Thailand Management Association (TMA). The objective is to support sustainable development actions. In particular, initiatives that need to be accelerated in building a network of cooperation, such as climate change adaption and transition to low carbon economy, circular economy, and health & safety in order to achieve tangible results. SCG does not provide support to influence any organization or represent a stakeholder in that organization's operations.

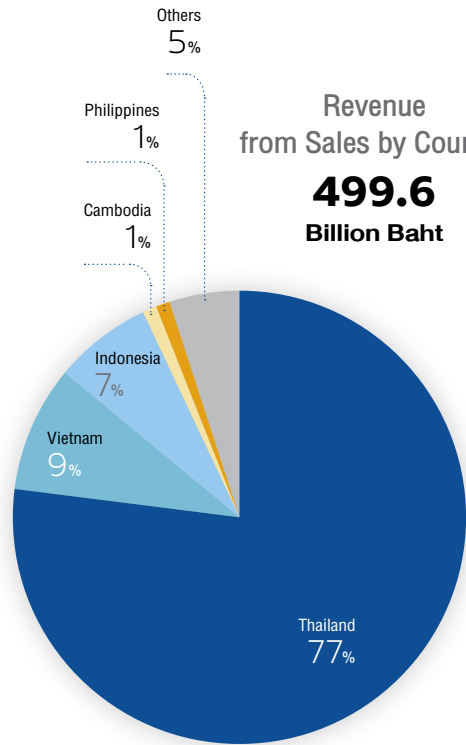
<sup>(2)</sup> SCG remains politically neutral, and set policy which does not give financial or any kind of supports to any political party, political group, or candidates in local, regional or national levels or person with political influence or lobbying or interest representation or similar and other categories (such e.g. election campaign, spending related to ballot measures, voting activities, or referendums). In addition, SCG establishes definition and prohibition of facilitation payments in Anti-corruption policy which means any action that may influence or motivate an unfair decision making and treatment.

<sup>(3)</sup> Only SCGC (Chemicals Business)

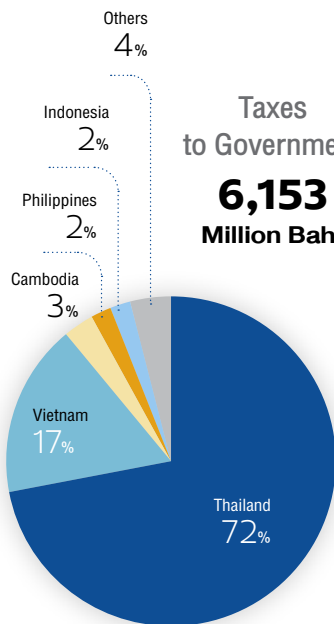
Revenue  
from Sales  
**499.6**  
Billion Baht



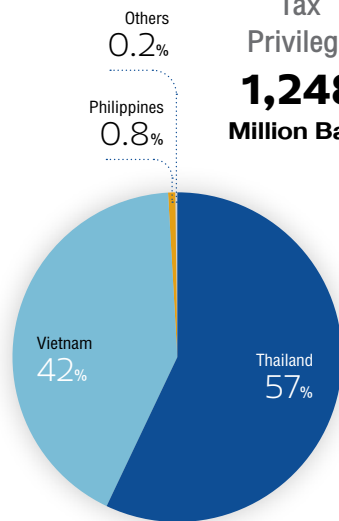
Revenue  
from Sales by Country  
**499.6**  
Billion Baht



Taxes  
to Government  
**6,153**  
Million Baht



Tax  
Privilege  
**1,248**  
Million Baht





# Environmental Performance

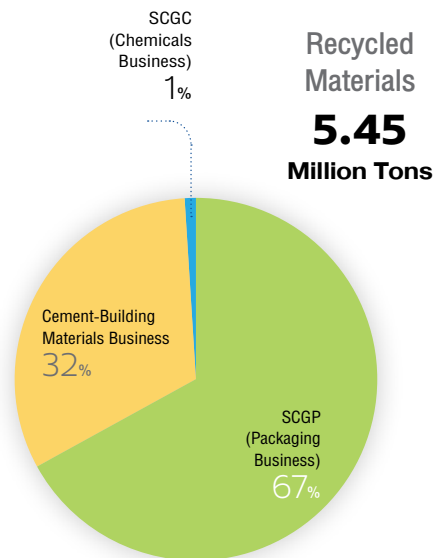
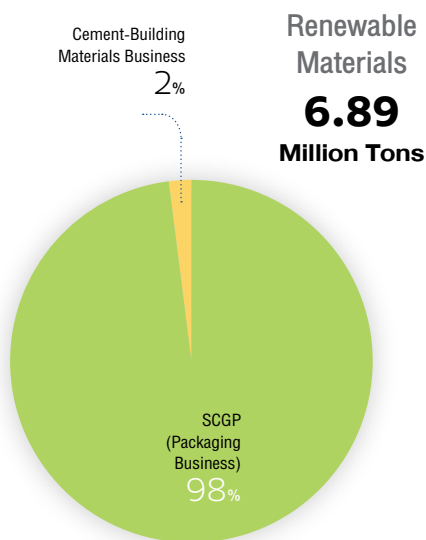
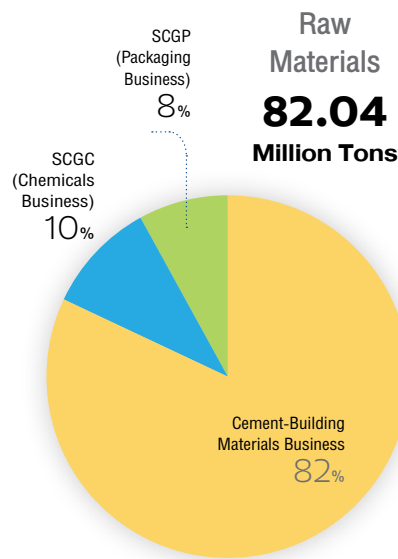
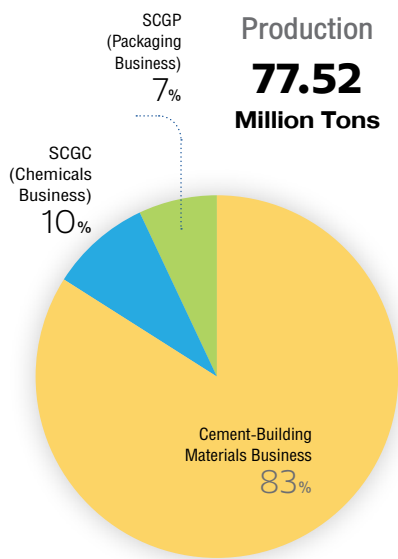
## Production and Raw Materials

By embedding Circular Economy Principle into business, SCG can increase the amount of recycled materials.

Performance Data	2019	2020	2021	2022 <sup>(1)</sup>	2023	GRI Standards	SASB
Production (Tons)	43,135,820	39,850,825	83,395,110 <sup>(1)</sup>	85,891,647	77,518,763		EM-CM-000.A
Raw Materials (Tons)	51,394,035	52,767,345	71,342,275	86,758,219	82,039,769	GRI 301-1	
Renewable Materials (Tons)	NA	NA	NA	4,777,591	6,892,041	GRI 301-1	
(%)	NA	NA	NA	6	8.40	GRI 301-1	
Recycled Materials (Million Tons)	4,251,150	5,651,933	3,759,406	6,048,122	5,445,245	GRI 301-2	RT-CP-410a.1
(%)	8.27	10.71	5.27	6.93	6.64	GRI 301-2	
Renewable Materials and Recycled Materials (Million Tons)	NA	NA	NA	10,825,712	8,554,830		
(%)	NA	NA	NA	12.44	10.44		

NA = Not Available

<sup>(1)</sup> 1<sup>st</sup> year to Incorporate performance from abroad operations



## Greenhouse Gas Emissions

Greenhouse gas emissions decreased 7.16 million tons CO<sub>2</sub> compared to 2020, in line with science base targets towards the net-zero in 2050.

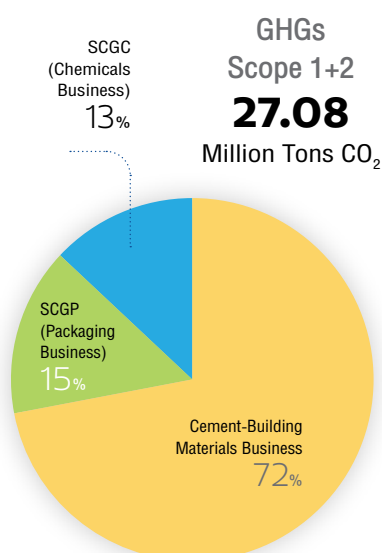
Performance Data	2020 <sup>(1)</sup>	2021 <sup>(3)</sup>	2022	2023	GRI Standards	SASB
GHGs Scope 1 and 2 (Tons CO <sub>2</sub> ) <sup>(2)</sup>	34,243,210	33,525,541	30,116,798	27,083,867		
GHG Scope 1 (Tons CO <sub>2</sub> ) <sup>(2)</sup>	30,994,851	30,343,481	27,236,390	24,329,050	GRI 305-1	EM-CM-110a.1
GHG Scope 2 (Tons CO <sub>2</sub> ) <sup>(2)</sup>	3,248,358	3,182,060	2,880,408	2,754,817	GRI 305-2	
Location-Based (Tons CO <sub>2</sub> ) <sup>(2)</sup>	3,388,383	3,323,357	3,106,463	2,935,118		
Market-Based (Tons CO <sub>2</sub> ) <sup>(2)</sup>	3,248,358	3,182,060	2,880,408	2,754,817		
Biogenic CO <sub>2</sub> (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	4,853,737	5,459,979	3,968,392	GRI 305-1	
GHG emission reduction compare with base year 2020 (Tons CO <sub>2</sub> )		717,668	4,126,412	7,159,343	GRI 305-5	
(%)		2.09	12.05	20.91		
GHG Scope 3 (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	15,603,650	10,014,394	10,606,251	GRI 305-3	
1. Purchased goods and services (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	5,036,763	4,672,130	5,303,395		
2. Capital goods (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	0	0	0		
3. Fuel and energy related activities (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	1,878,089	1,461,512	1,460,420		
4. Upstream transportation & distribution (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	1,090,483	1,542,759	1,480,778		
5. Waste generated in operations (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	1,373	2,642	22,427		
6. Business travel (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	1,479	13,225	3,910		
7. Employee commuting (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	24,144	6,888	9,981		
8. Upstream leased assets (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	0	0	0		
9. Downstream transportation & distribution (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	1,145,963	422,057	566,064		
10. Processing of sold products (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	4,225,574	34,002	246,235		
11. Use of sold products (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	1,747,781	1,205,819	887,651		
11.1 Use of sold fossil fuels <sup>(2)</sup>	NA	1,156,169	1,205,819	887,493		
12. End-of-life treatment of sold products (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	41,467	51,556	67,203		
13. Downstream leased assets (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	0	0	0		
14. Franchises (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	487	7,735	6,578		
15. Investments (Tons CO <sub>2</sub> ) <sup>(2)</sup>	NA	410,047	594,068	551,609		

NA = Not Available

<sup>(1)</sup> Base year of scope 1+2

<sup>(2)</sup> Within SGS's limited assurance scope (Page 140-141)

<sup>(3)</sup> Base year of scope 3



## Energy Consumption

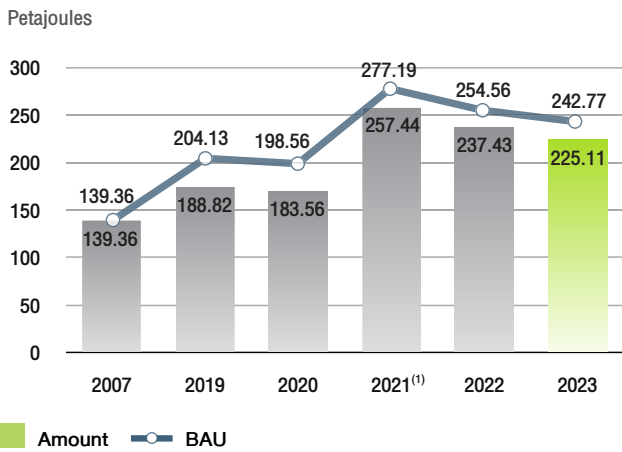
Renewable fuel consumption is constantly increasing in order to reduce non-renewable fuel consumption

Performance Data	2019	2020	2021 <sup>(1)</sup>	2022	2023	GRI Standards	SASB
Total Energy Consumption (Petajoules) <sup>(2)</sup>	188.82	183.56	257.44	237.43	225.11	GRI 302-1	EM-CM-130a.1
Non-Renewable Fuel Consumption (Petajoules) <sup>(2)</sup>	151.29	147.72	209.10	185.21	166.49	GRI 302-1	EM-CM-130a.1
Renewable Fuel Consumption (Petajoules) <sup>(2)</sup>	18.72	17.96	24.85	31.31	38.25		
Steam & Heat Consumption (Petajoules) <sup>(2)</sup>	4.72	4.44	4.65	2.52	2.61		
Electrical Consumption (Petajoules) <sup>(2)</sup>	14.25	13.88	19.18	18.66	18.01	GRI 302-1	EM-CM-130a.1
Electricity Sold (Petajoules) <sup>(2)</sup>	0.15	0.45	0.35	0.26	0.25		
Energy Consumption Reduction compare with business as usual (BAU) at base year of 2007 (Petajoules)	15.31	15.00	19.75	17.12	17.66	GRI 302-4	
(%)	7.5	7.6	7.1	6.7	7.3		

<sup>(1)</sup> 1<sup>st</sup> year to incorporate performance from abroad operations

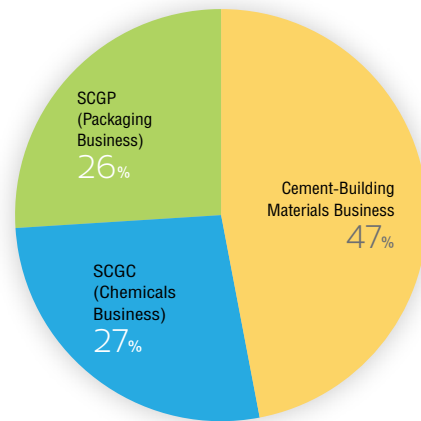
<sup>(2)</sup> Within SGS's limited assurance scope (Page 140-141)

### Total Energy Consumption



<sup>(1)</sup> 1<sup>st</sup> year to incorporate performance from abroad operations

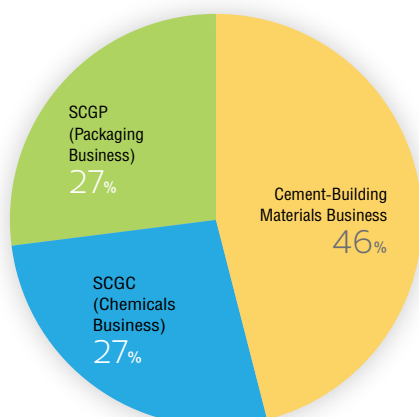
Total Energy Consumption  
**225.11**  
Petajoules



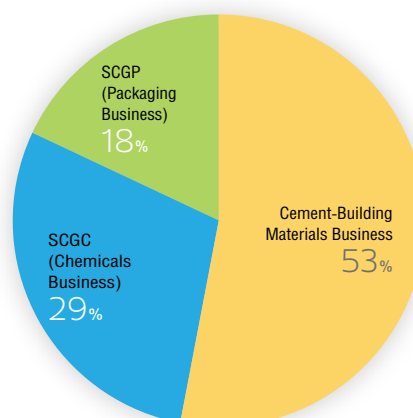


## Energy Consumption

Thermal  
Consumption  
**207.35**  
Petajoules



Electrical  
Consumption  
**18.01**  
Petajoules



### Co-processing Performance of Cement-Building Materials Business

Significant proportion of alternative fuels utilization in cement business resulting in GHG reduction

Performance Data	2019	2020	2021 <sup>(1)</sup>	2022	2023	GRI Standards	SASB
Alternative fuel used to replace the fossil fuel (as % of total heat consumption)	17.50	18.30	19.90	26.90	35.50		
• Alternative fossil fuel	6.20	6.60	7.70	9.11	11.66		
• Biomass	11.30	11.70	12.20	17.79	23.84		
Alternative raw materials contained in cement (%)	9.60	8.40	8.40	10.10	7.33		
Alternative raw materials contained in concrete (%)	1.21	1.29	1.09	0.94	1.05		
Clinker-to-Cement ratio (%)	74.40	72.90	74.20	71.82	71.24		
Alternative raw materials contained in other building materials (%)	14.70	15.40	11.20	8.79	7.34		

<sup>(1)</sup> 1<sup>st</sup> year to incorporate performance from abroad operations

**Water Withdrawal and Effluent Quality**

With our efforts on water efficiency improvement and increasing of water recycling capacity, In 2023 SCG can reduce total water withdrawal.

Performance Data	Water							GRI Standards	SASB
	2019	2020	2021 <sup>(1)</sup>	2022	2022 Areas with water stress	2023	2023 Areas with water stress		
Water Withdrawal									
Water Withdrawal by source									
Surface water (Million Cubic Meters) <sup>(2)</sup>	26.44	28.45	50.85	50.25	0	47.57	0	GRI 303-3	EM-CM-140a.1
• Freshwater TDS ≤ 1,000 mg/l		28.45	50.85	50.23	0	47.56	0		
• Other water TDS > 1,000 mg/l		0	0	0.02	0	0.01	0		
Groundwater (Million Cubic Meters) <sup>(2)</sup>	41.79	38.01	42.31	38.63	0	36.75	0	GRI 303-3	EM-CM-140a.1
• Freshwater TDS ≤ 1,000 mg/l		31.38	42.31	38.63	0	36.41	0		
• Other water TDS > 1,000 mg/l		6.63	0	0	0	0.34	0		
Third-party water (total) (Million Cubic Meter) <sup>(2)</sup>	35.20	27.83	36.87	31.19	0	37.92	0	GRI 303-3	EM-CM-140a.1
• Freshwater TDS ≤ 1,000 mg/l		27.83	36.87	31.19	0	37.92	0		
• Other water TDS > 1,000 mg/l		0	0	0	0	0	0		
Total Water Withdrawal (Million Cubic Meters) <sup>(2)</sup>	103.43	94.29	130.03	120.07	0	122.17	0	GRI 303-3	
Water Withdrawal Reduction compared with business as usual at the base year of 2014 (Million Cubic Meters) (%)	12.17 10.5	16.61 15.0	38.03 22.6	38.04 24.1	0 0	38.75 24.09	0 0		
Recycled Water (Million Cubic Meters) <sup>(2)</sup> (%)	12.30 10.6	12.33 11.6	17.03 11.9	18.50 13.4	0 0	18.49 13.14	0 0		EM-CM-140a.1

<sup>(1)</sup> 1<sup>st</sup> year to incorporate performance from abroad operations  
<sup>(2)</sup> Within SGS's limited assurance scope (Page 140-141)

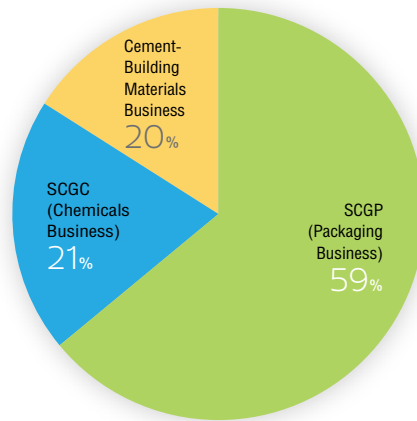
Performance Data	Water							GRI Standards	SASB
	2019	2020	2021	2022 <sup>(1)</sup>	2022 Areas with water stress	2023	2023 Areas with water stress		
Water Discharge (Only Thailand Operations)									
Water Discharge by destination <sup>(2)</sup>									
• Surface water (Million Cubic Meters)	NA	35.57	48.25	66.27	0	64.08	0	GRI 303-3	
• Groundwater (Million Cubic Meters)	NA	1.16	0.001	0	0	0	0	GRI 303-3	
• Seawater (Million Cubic Meters)	NA	NA	NA	0.15	0	0.12	0		
• Third-party water (total) (Million Cubic Meters)	NA	4.76	4.15	3.21	0	2.10	0	GRI 303-3	
---Third-party water sent for use to other organizations (Million Cubic Meters)	NA	4.62	3.81	2.91	0	1.67	0		
Water Discharge by freshwater and other water <sup>(2)</sup>									
• Freshwater TDS ≤ 1,000 mg/l (Million Cubic Meters)	NA	5.45	7.84	18.59	0	23.23	0	GRI 303-3	
• Other water TDS > 1,000 mg/l (Million Cubic Meters)	NA	36.04	44.56	51.04	0	43.06	0		
Total Water Discharge (Million Cubic Meters) <sup>(2)</sup>	NA	41.49	52.40	69.63	0	66.30	0	GRI 303-3	
BOD (Tons) <sup>(2)</sup>	165	176	211	765	NR	570	NR		
COD (Tons) <sup>(2)</sup>	4,422	3,875	4,411	6,445	NR	6,031	NR		
TSS (Tons) <sup>(2)</sup>	588	549	490	1,105	NR	830	NR		

NA = Not Available  
 NR = Not Relevance  
<sup>(1)</sup> 1<sup>st</sup> year to incorporate performance from abroad operations  
<sup>(2)</sup> Within SGS's limited assurance scope (Page 140-141)

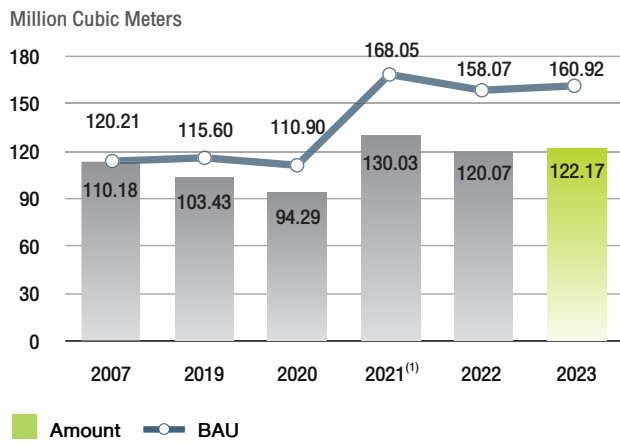
## Water Withdrawal

# 122.17

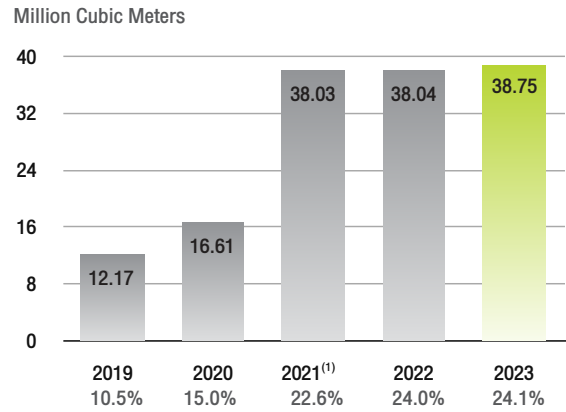
Million Cubic Meters



### Water Withdrawal



### Water Withdrawal Reduction



<sup>(1)</sup> 1<sup>st</sup> year to incorporate performance from abroad operations



**Waste Management**

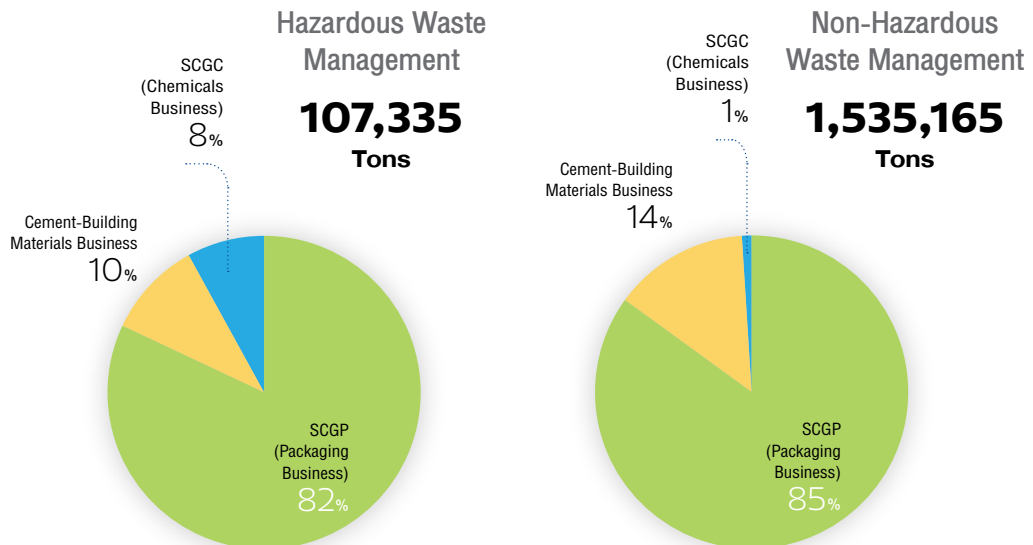
Small amount of hazardous and non-hazardous waste from operations abroad are still ended up in landfill due to different waste management approach and legal requirement from Thailand

Performance Data	2019	2020	2021	2022 <sup>(1)</sup>	2023		GRI Standards	SASB
Hazardous Waste Generation (Tons) <sup>(2)</sup>	1,553,640	1,235,450	1,256,120	1,745,807	1,642,500		GRI 306-3 (2020)	EM-CM-150a.1
Hazardous Waste Management (Tons) <sup>(2)</sup>	11,380	17,790	13,970	64,908	107,335		GRI 306-3 (2020)	EM-CM-150a.1
Diverted from Disposal (Tons) <sup>(2)</sup>	1,542,260	1,217,660	1,242,150	1,680,899	1,535,165		GRI 306-3 (2020)	EM-CM-150a.1
					<b>Onsite</b>	<b>Offsite</b>		
Total Weight of Waste diverted from disposal (Tons) <sup>(2)</sup>	1,329,960	1,224,250	706,771	1,191,216	613,716	528,141	GRI 306-4 (2020)	EM-CM-150a.1
Total Weight of Hazardous Waste diverted from disposal <sup>(2)</sup>	11,000	17,590	4,439	39,034	40,782	51,025		
• Reuse			34	305	0	408		
• Recycled			3,663	37,873	40,782	47,779		
• Other recovery			742	856	0	2,838		
Total Weight of Hazardous Waste diverted from disposal (Tons) <sup>(2)</sup>	1,318,960	1,206,660	702,333	1,152,182	572,934	477,117		
• Reuse			6,397	19,040	338	12,948		
• Recycled			695,813	1,133,095	572,055	463,444		
• Other recovery			122	47	541	725		
Total Weight of Waste directed to disposal (Tons) <sup>(2)</sup>	223,680	11,200	549,349	554,591	269,171	231,472	GRI 306-5 (2020)	EM-CM-150a.1
Total Weight of Hazardous Waste directed to disposal (Tons) <sup>(2)</sup>	380	200	9,532	25,874	3,162	12,367		
• Incinerated with energy recovery			9,498	16,272	2,968	4,779		
• Incinerated without energy recovery			31	560	192	235		
• Other disposal			3	257	0	143		
• Landfilled			0	8,785	2	7,210		
Total Weight of Non-Hazardous Waste directed to disposal (Tons) <sup>(2)</sup>	223,300	11,000	539,817	528,717	266,009	219,105		
• Incinerated with energy recovery			539,351	444,394	264,270	111,297		
• Incinerated without energy recovery			333	35,756	0	32,383		
• Other disposal			0	1,137	171	487		
• Landfilled			133	47,430	1,569	74,938		

NA = Not Available

<sup>(1)</sup> 1<sup>st</sup> year to incorporate performance from abroad operations

<sup>(2)</sup> Within SGS's limited assurance scope (Page 140-141)



## Air Emissions

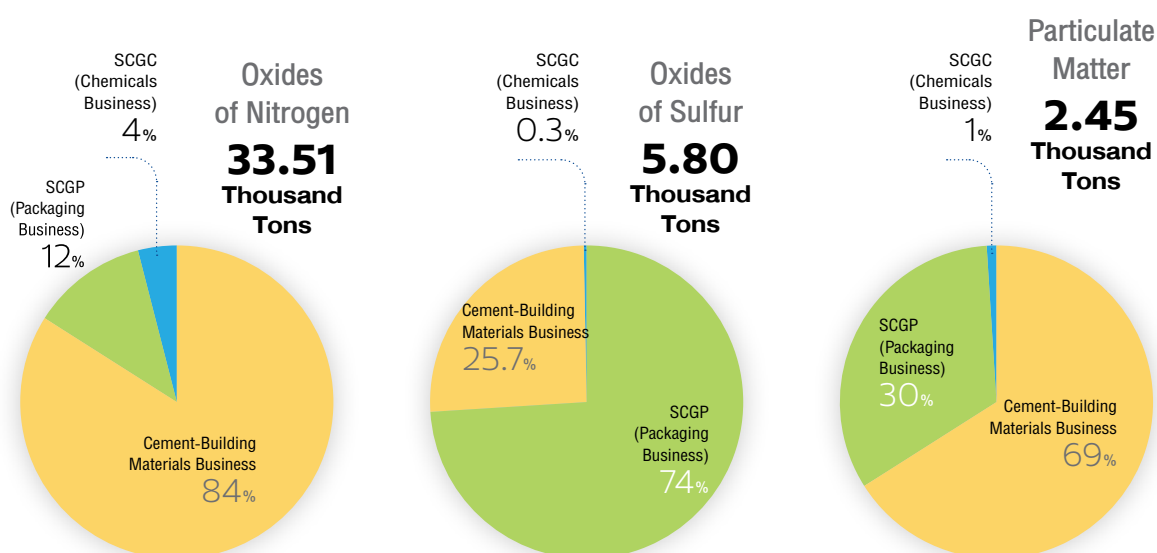
The boundary of air quality data assurance has been expanded to cover operations abroad to gain confidence and ease of strategic, targets and action plan setting.

Performance Data	2019	2020	2021	2022 <sup>(1)</sup>	2023	GRI Standards	SASB
Oxides of Nitrogen (Tons) <sup>(2)</sup>	25.72	30.80	34.50	39.92	33.51	GRI 305-7	EM-CM-120a.1
Oxides of Sulfur (Tons) <sup>(2)</sup>	2.75	3.71	3.13	5.71	5.80	GRI 305-7	EM-CM-120a.1
Particulate Matter (Tons) <sup>(2)</sup>	1.36	1.39	1.53	2.78	2.45	GRI 305-7	EM-CM-120a.1
Mercury (Kilograms) <sup>(2)</sup>	84.21	32.95	29.51	10.24	11.34	GRI 305-7	EM-CM-120a.1

NA = Not Available

<sup>(1)</sup> 1<sup>st</sup> year to incorporate performance from abroad operations

<sup>(2)</sup> Within SGS's limited assurance scope (Page 142-143)



## Biodiversity/Environmental Expenditures and Benefits/Violations of Legal Obligations and Regulations

Environmental investment in 2023 are mainly contributed from the installation of cleaner energy such as solar system on rooftop, on ground and floating.

Performance Data (Only Thailand Operations)	2019	2020	2021	2022	2023	GRI Standards	SASB
Quarries with Biodiversity Management Plan in place (Number of Sites)	4	4	4	4	4		
(%)	100	100	100	100	100		EM-CM-160a.2
Operating Expenses – Environmental (Million Baht)	2,192	2,676	2,657	3,176	2,913		
Capital Investment – Environmental (Million Baht)	2,593	1,220	1,643	2,116	1,015		
Total Expenses – Environmental (Capital Investment + Operating Expenses) (Million Baht)	4,785	3,896	4,300	5,292	3,928		
Savings, cost avoidance and tax incentives linked to environment investment (Million Baht) <sup>(2)</sup>	2,242	9,611	34,084	76,429	72,177		

<sup>(1)</sup> Savings, cost avoidance and tax incentives linked to environment investment include Revenue from sales of SCG Green Choice, provide directly value to customer

Performance Data	2019	2020	2021 <sup>(1)</sup>	2022	2023	GRI Standards	SASB
Total actual and opportunity costs (e.g., forgone income) from water-related incidents (Million Baht)	0	0	0	0	0		
Number of violations of legal environmental obligations/regulations (over USD 10,000) (Number of Cases)	0	0	0	0	0	GRI 307-1	

<sup>(1)</sup> 1<sup>st</sup> year to incorporate performance from abroad operations

# Social Performance

## Health and Safety

Zero occupational illness and disease of employee. Lost time injury frequency rate of contractor is decreased while lost time injury frequency rate of employee is still not achieved the target.

Performance Data	2019	2020	2021 <sup>(1)</sup>	2022	2023	GRI Standards	SASB
From Workplace							
Hours Worked <sup>(2)</sup> (Million Hours Worked)							
• Employee	79.55	79.72	118.31	117.17	112.29		
• Contractor	110.95	124.97	140.43	134.29	134.42		
Total Recordable Work-Related Injury and Occupational Illness & Disease Rate (Cases/1,000,000 Hours Worked)							EM-CM-320a.1 RT-CH-320a.1
• Employee <sup>(2)</sup>	0.880	0.840	0.947	0.785	0.891		
• Contractor	0.793	0.608	0.869	0.923	0.766		
Fatality Work-Related Injury and Occupational Illness & Disease Rate (Cases/1,000,000 Hours Worked)							RT-CH-320a.1
• Employee <sup>(2)</sup>	0.000	0.000	0.017	0.000	0.009		
• Contractor	0.018	0.032	0.057	0.015	0.045		
Total Number of Recordable Work-Related Injury <sup>(2)</sup> (Cases)							
• Employee	70	67	112	92	100	GRI 403-9	
• Contractor	88	76	122	124	103		
Total Recordable Work-Related Injury Rate <sup>(2)</sup> (Cases/1,000,000 Hours Worked)							
• Employee	0.880	0.840	0.947	0.785	0.891	GRI 403-9	
• Contractor	0.793	0.608	0.869	0.923	0.766		
Number of Fatality Work-Related Injury <sup>(2)</sup> (Cases)							
• Employee (Male : Female)	0 : 0	0 : 0	1 : 1	0 : 0	1 : 0	GRI 403-9	
• Contractor (Male : Female)	1 : 1	3 : 1	8 : 0	2 : 0	6 : 0		
Fatality Work-Related Injury Rate <sup>(2)</sup> (Cases/1,000,000 Hours Worked)							
• Employee	0.000	0.000	0.017	0.000	0.009	GRI 403-9	
• Contractor	0.018	0.032	0.057	0.015	0.045		
Number of High-Consequence Work-Related Injury <sup>(2)</sup> (Cases)							
• Employee	NA	0	2	1	2	GRI 403-9	
• Contractor	NA	4	7	7	3		
High-Consequence Work-Related Injury Rate <sup>(2)</sup> (Cases/1,000,000 Hours Worked)							
• Employee	NA	0.000	0.017	0.009	0.018	GRI 403-9	
• Contractor	NA	0.032	0.050	0.052	0.022		
Lost Time Injury Frequency Rate <sup>(2)</sup> (Cases/1,000,000 Hours Worked)							
• Employee	0.239	0.113	0.389	0.137	0.276		
• Contractor	0.279	0.216	0.249	0.276	0.231		
Severity Work-Related Injury Rate (Days/1,000,000 Hours Worked)							
• Employee	4.890	2.960	6.246	2.330	6.047		
• Contractor	5.714	5.609	8.780	10.849	5.386		
Total Number of Recordable Occupational Illness & Disease (Cases)							
• Employee <sup>(2)</sup>	0	0	0	0	0	GRI 403-10	
• Contractor	NA	0	0	0	0		



Performance Data	2019	2020	2021 <sup>(1)</sup>	2022	2023	GRI Standards	SASB
Occupational Illness Frequency Rate (Cases/1,000,000 Hours Worked)							
• Employee <sup>(2)</sup>	0.000	0.000	0.000	0.000	0.000		
• Contractor	NA	0.000	0.000	0.000	0.000		
Number of Fatality Occupational Illness & Disease (Cases)							
• Employee <sup>(2)</sup>	0	0	0	0	0	GRI 403-10	
• Contractor	NA	0	0	0	0		
Number of Reported Cases of Silicosis (Cases)							
• Employee <sup>(2)</sup>	0	0	0	0	0		EM-CM-320a.2
• Contractor	NA	0	0	0	0		
Near Miss Frequency Rate (Employee & Contractor) (Cases/1,000,000 Hours Worked)	NA	17.524	20.213	58.044	32.285		EM-CM-320a.1
Process Safety Incident Count (PSIC) <sup>(3)</sup> (Cases)	NA	0	0	0	0		RT-CH-540a.1
Process Safety Total Incident Rate (PSTIR) <sup>(3)</sup> (Cases/1,000,000 Hours Worked)	NA	0	0	0	0		RT-CH-540a.1
Process Safety Incident Severity Rate (PSISR) <sup>(3)</sup> (Cases/1,000,000 Hours Worked)	NA	0	0	0	0		RT-CH-540a.1
From Travelling and Transportation							
Number of Fatality Work-Related Injury <sup>(2)</sup> (Cases)							
• Employee (Male : Female)	0 : 0	0 : 0	0 : 0	1 : 0	0 : 0	GRI 403-9	
• Direct Transportation Contractor (Male : Female)	0 : 0	1 : 0	0 : 0	2 : 0	0 : 0		
• Other Transportation Contractor (Male : Female)	4 : 0	2 : 0	0 : 0	0 : 0	1 : 0		
From Workplace, Travelling and Transportation	NA	33	24	16	12		RT-CH-540a.2
Number of Transport Incident (Cases)	18,224	8,989	8,969	17,243	15,355		
From Workplace, Travelling and Transportation							
Number of Fatality Work-Related Injury <sup>(2)</sup> (Cases)							
• Employee (Male : Female)	0 : 0	0 : 0	1 : 1	1 : 0	1 : 0	GRI 403-9	
• Contractor (Male : Female)	1 : 1	4 : 1	8 : 0	4 : 0	6 : 0		
Others							
Product that have under gone a Hazard Assessment <sup>(3)</sup> (%)	NA	100	100	100	100		RT-CH-410b.1
Revenue from Products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) <sup>(3)</sup> (%)	NA	100	100	100	100		RT-CH-410b.1

<sup>(1)</sup> 1<sup>st</sup> year to incorporate performance from abroad operations

<sup>(2)</sup> Within SGS's limited assurance scope (Page 140-141)

<sup>(3)</sup> Only SCGC (Chemicals Business)

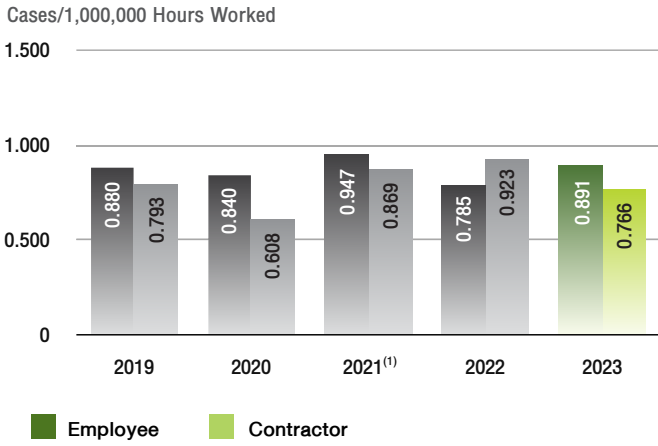
**Employee** : A full time employee according to an employment contract such as operational level, supervisory and technical staff level, and managerial level including Intern (probationary) and special contracted employee.

**Workplace Contractor** : A contractor that works for the organization, and whose work and/or workplace is controlled by the organization (exclude transportation contractor).

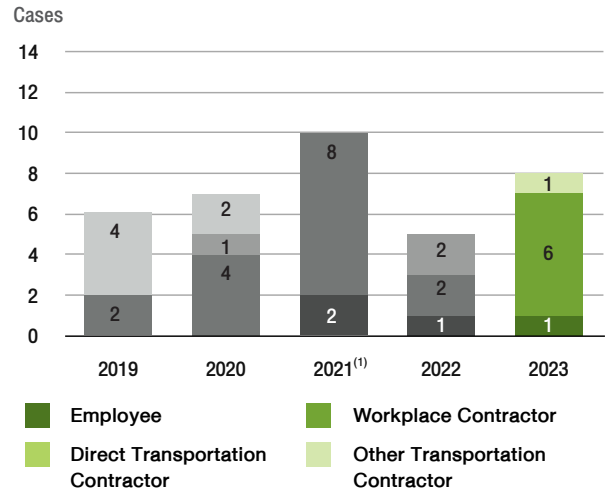
**Direct Transportation Contractor** : Transportation contractor with operation under SCG's brand.

**Other Transportation Contractor** : Other transportation contractor without operation under SCG's brand.

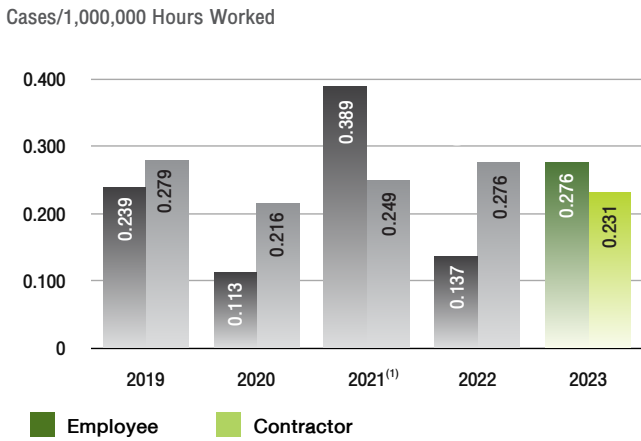
### Total Recordable Work-Related Injury and Occupational Illness & Disease Rate



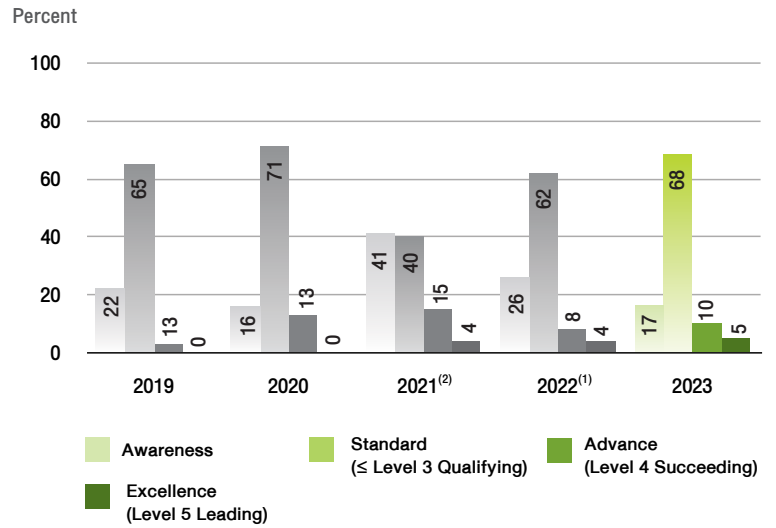
### Number of Fatality Work-Related Injury



### Lost Time Injury Frequency Rate



### SPAP Certified Companies



<sup>(1)</sup> 1<sup>st</sup> year to incorporate performance from abroad operations

<sup>(2)</sup> 1<sup>st</sup> year of safety performance level corresponding to SCG Safety Framework 2021

**Workplace Contractor** : A contractor that works for the organization, and whose work and/or workplace is controlled by the organization (exclude transportation contractor).

**Direct Transportation Contractor** : Transportation contractor with operation under SCG's brand.

**Other Transportation Contractor** : Other transportation contractor without operation under SCG's brand.

## Labor and Social Development

SCG promotes diversity, equity and inclusion and achieve the target of 27% female in all management positions in 2025.

Performance Data	2019	2020	2021	2022	2023	GRI Standards	SASB
Number of all employees (Persons)	54,224	49,754	58,283	57,814	55,578	GRI 2-7	
Female share of total workforce (%)	21.9	23.0	22.4	24.4	24.0	GRI 405-1b	
Female in all management positions (%)	24.7	24.9	24.8	30.5	30.6	GRI 2-7	
Female in junior management position (%)	26.1	26.4	26.6	32.6	33.4		
Female in top management position (%)	13.1	13.1	12.9	14.8	14.7		
Female in management position in revenue-generating functions <sup>(1)</sup> (%)	19.5	19.5	18.3	23.3	27.1		
Female in Science, Technology, Engineering and Mathematics positions (STEM-related positions) (%)	NA	24.2	26.3	13.2	27.2		
Proportion of local employee abroad in all management positions <sup>(2)</sup> (%)	0.5	0.9	0.4	1.1	6.3	GRI 202-2	
Number of employees with disability <sup>(3)</sup> (Persons)	NA	NA	NA	NA	34		
Number of promoting occupations for people with disability (Persons)	NA	NA	NA	NA	255		
Equal pay information by Gender <sup>(7)</sup>						GRI 405-2	
• Ratio of average salary (base salary only) of female to male (Executive Level) <sup>(7)</sup>	1.015	0.973	1.086	1.017	0.988		
• Ratio of average total remuneration (base salary + other cash incentives) of female to male (Executive Level) <sup>(7)</sup>	NA	0.973	1.133	1.098	1.169		
• Ratio of average salary (base salary only) of female to male (Management Level) <sup>(7)</sup>	0.921	0.924	0.995	0.938	1.015		
• Ratio of average total remuneration (base salary + other cash incentives) of female to male (Management Level) <sup>(7)</sup>	0.921	0.924	1.004	0.929	1.000		
• Ratio of average salary (base salary only) of female to male (Non-management Level) <sup>(7)</sup>	1.124	1.130	1.138	1.108	1.130		
• Ratio of average total remuneration (base salary + other cash incentives) of female to male (Non-management Level) <sup>(7)</sup>	NA	1.129	0.987	0.965	0.974		
Employees represented by an independent trade union or covered by collective bargaining agreements <sup>(4)</sup> (%)	84.1	88.0	85.6	78.7	84.0		
Absence of employees							
• Sick leave (%)	12.7	10.6	9.1	10.0	12.0		
• Work-related leave (%)	0.1	0.1	0.0	0.0	0.0		
• Others (%)	87.2	89.3	90.9	90.0	88.0		
• Number of employees taken parental leave <sup>(5)</sup> (Persons)	492	306	250	267	216	GRI 401-3	
• Number of employees returned to work after parental leave (Persons)	461	303	246	251	200		
Number of new employees hire (Persons)	927	482	854	2,688	3,122	GRI 401-1a	
• Percentage of total employees (%)	2.0	1.0	1.5	4.6	5.6		
• by Gender (Female : Male) (%)	27 : 73	37 : 63	39 : 61	44 : 56	25 : 75		
• by Employee level (Management level : Other level) (%)	1.7 : 98.3	1.5 : 98.5	1.3 : 98.7	0.7 : 99.3	0.3 : 99.7		
• by Age group (under 30 yr : 30 - 50 yr : over 50 yr) (%)	69.3 : 30.3 : 0.4	70.3 : 29.5 : 0.2	74.4 : 25.5 : 0.1	74.4 : 25.5 : 0.1	56.7 : 40.8 : 2.5		
Number of positions filled by internal candidates (Rotation/ Promotion) (Persons)	2,532	2,012	2,232	11,418	11,156		
• Percentage of total employees (%)	4.7	4.0	3.8	19.7	34.4		
• by Gender (Female : Male) (%)	27 : 73	26 : 74	26 : 74	30 : 70	30 : 70		
• by Employee level (Management level : Other level) (%)	11.7 : 88.3	7.9 : 92.1	10.9 : 89.1	21.8 : 78.2	10.0 : 90.0		
• by Age group (under 30 yr : 30 - 50 yr : over 50 yr) (%)	21.0 : 73.3 : 5.7	17.4 : 77.5 : 5.1	14.6 : 79.1 : 6.3	12.4 : 75.4 : 12.2	12.0 : 73.0 : 15.0		
Average hiring cost per employee (Bath/Person)	97,264	98,140	85,542	95,720	87,975		



Performance Data	2019	2020	2021	2022	2023	GRI Standards	SASB
Voluntary employee turnover (Persons)	1,560	1,180	849	2,304	2,622	GRI 401-1b	
• Percentage of total employees (%)	2.9	2.4	1.5	4.0	4.7		
• by Gender (Female : Male) (%)	27 : 73	27 : 73	29 : 71	35 : 65	36 : 64		
• by Employee level (Management level : Other level) (%)	1.5 : 98.5	2.6 : 97.4	3.3 : 96.7	1.0 : 99.0	1.7 : 98.3		
• by Age group (under 30 yr : 30 - 50 yr : over 50 yr) (%)	33.2 : 61.6 : 5.2	24.8 : 64.3 : 10.9	27.0 : 68.9 : 4.1	38.4 : 57.3 : 4.3	36.2 : 58.7 : 5.1		
Total employee turnover (Persons)	1,880	1,804	1,323	3,575	4,074	GRI 401-1b	
• Percentage of total employees (%)	3.5	3.6	2.3	6.2	7.3		
• by Gender (Female : Male) (%)	26 : 74	23 : 77	27 : 73	40 : 60	36 : 64		
• by Employee level (Management level : Other level) (%)	3.4 : 96.6	5.4 : 94.6	5.5 : 94.5	6.0 : 94.0	1.6 : 98.4		
• by Age group (under 30 yr : 30 - 50 yr : over 50 yr) (%)	28.9 : 54.0 : 17.1	17.3 : 53.5 : 29.2	18.4 : 57.3 : 24.3	34.8 : 52.1 : 13.1	28.0 : 49.1 : 22.9		
Employee engagement level <sup>(6)</sup> (%)	68	71	70	69	69*		
• by Gender (Female : Male) (%)	NA	66 : 73	64 : 72	59 : 72	61 : 72*		
• by Employee level (Management level : Other level) (%)	NA	76 : 71	74 : 69	68 : 69	65 : 69*		
• by Service year (under 5 yr / 5-20 yr / over 20 yr) (%)	NA	67 : 68 : 79	64 : 67 : 77	68 : 66 : 75	69 : 68 : 72*		
• by Nationality (Thai : Others) (%)	NA	70 : 76	69 : 74	66 : 77	64 : 81*		
Employee satisfaction level (%)	NA	NA	NA	NA	65*		
• by Gender (Female : Male) (%)	NA	NA	NA	NA	59 : 68*		
• by Employee level (Management level : Other level) (%)	NA	NA	NA	NA	58 : 66*		
• by Service year (under 5 yr / 5-20 yr / over 20 yr) (%)	NA	NA	NA	NA	69 : 65 : 64*		
• by Nationality (Thai : Others) (%)	NA	NA	NA	NA	59 : 79*		
Average hours of training and development (Hours/Person)	136	124	82	155	129	GRI 404-1	
• Mandatory (Hours/Person)	NA	104	42	112	110		
• Non mandatory (Hours/Person)	NA	20	40	43	19		
Average amount spent on training and development (Baht/Person)	23,933	15,794	9,569	13,540	13,905		
Number of sites where human rights risks have been identified with mitigation plans (Company)	47	34	50	33	49		
Reduce Inequality (Persons)	NA	NA	3,000	8,746	20,997		
Contribution for social and community development (Million Baht)	719	669	700	560	397	GRI 201-1	
• Contribution by SCG (Million Baht)	414	326	388	401	268		
• Contribution by SCG Foundation (Million Baht)	305	343	312	159	129		
Employee volunteering during paid working hours (Million Baht)	82	40	28	54	56		
In-kind giving: product or services donations, projects/partnerships or similar (Million Baht)	132	124	147	15	9		
Management overheads related to CSR activity (Million Baht)	152	167	157	161	141		

NA = Not Available

<sup>(1)</sup> Revenue-generating functions e.g. marketing, sales, production

<sup>(2)</sup> Calculate from number of local Management Level abroad over total number of management level

<sup>(3)</sup> Visual and physical impairment and movement disability or other, e.g. hearing impairment, mental disability, communication disability

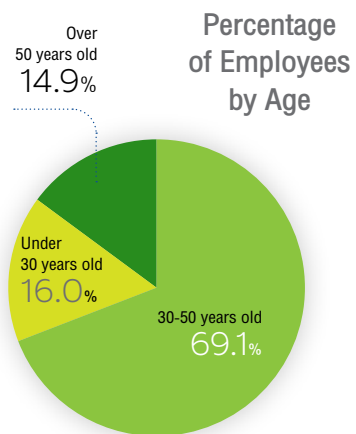
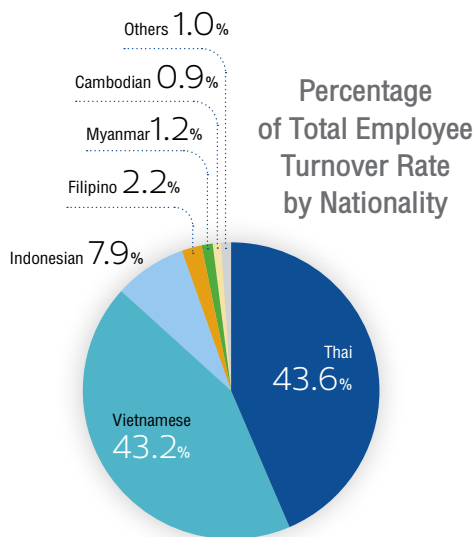
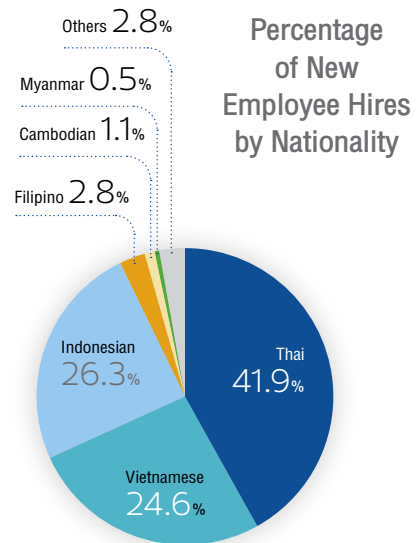
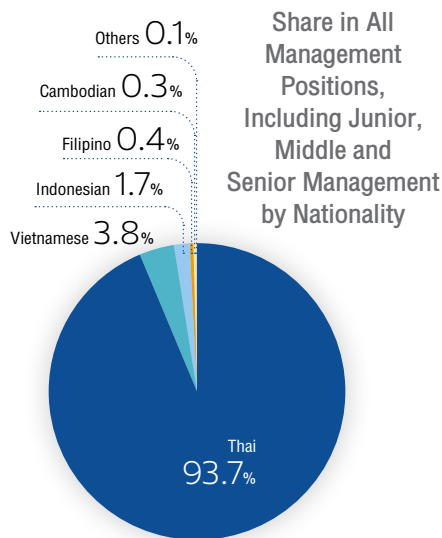
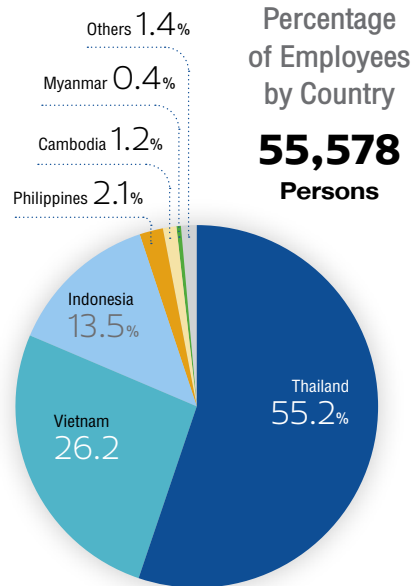
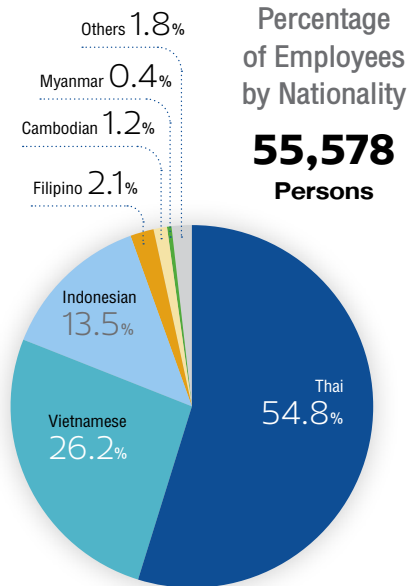
<sup>(4)</sup> Employees joining trade union or working with companies covered by Welfare Committee

<sup>(5)</sup> Under Thai laws, only female employees can take parental leave

<sup>(6)</sup> Employee engagement level by Gender is available since 2020

<sup>(7)</sup> Within SGS's limited assurance scope (Page 140-141)

\* SCGP result is shown in SCGP Sustainability Report 2023 according to Gallup method



# Operating Results of Cement Business in Accordance with Global Cement and Concrete Association (GCCA)

	Unit	2019	2020	2021	2022 <sup>(1)</sup>	2023
Number of facilities adopting GCCA Cement CO <sub>2</sub> Protocol	number of factory	6	6	16 <sup>(1)</sup>	16	16
	%	100	100	100 <sup>(1)</sup>	100	100
Absolute CO <sub>2</sub> emissions-Gross	million tons of CO <sub>2</sub>	15.74	15.49	21.15 <sup>(1)</sup>	19.35	17.13
Absolute CO <sub>2</sub> emissions-Net	million tons of CO <sub>2</sub>	15.42	15.15	20.61 <sup>(1)</sup>	18.79	16.43
Specific CO <sub>2</sub> emissions-Gross	kgCO <sub>2</sub> /ton Cementitious	647	630	639 <sup>(1)</sup>	612	592
Specific CO <sub>2</sub> emissions-Net	kgCO <sub>2</sub> /ton Cementitious	634	616	623 <sup>(1)</sup>	594	568
Heat Consumption	MJ/ton clinker	3,479	3,448	3,466 <sup>(1)</sup>	3,567	3,655
Alternative fossil fuel	% by heat	6.2	6.6	7.7 <sup>(1)</sup>	9.1	11.7
Biomass	% by heat	11.3	11.7	12.21 <sup>(1)</sup>	17.8	23.8
Alternative raw material in clinker produced	%	1.4	1.5	12.21	2.0	1.2
Alternative raw material in cement produced	%	9.6	8.4	8.4	10.1	7.3
Total alternative raw material	%	3.5	3.4	3.5	4.4	3.1
Clinker factor (cementitious)	%	74.4	72.9	74.2 <sup>(1)</sup>	71.8	71.2
Clinker produced with monitoring of Dust, NO <sub>x</sub> , SO <sub>2</sub> , VOC/THC, Heavy Metal, PCDD/F (KPI1)	%	99.29	99.41	99.41	57.32	50.94
Clinker produced using CEMs measurement of Dust, NO <sub>x</sub> and SO <sub>2</sub> emissions (KPI2)	%	87.31	95.82	80.97	59.74	56.61
Dust emissions (KPI3)	tons	767	794	807	1,197	1,064
Specific dust emissions (KPI3)	g/ton clinker	41	42	44	50	52
NO <sub>x</sub> emissions (KPI3)	tons	21,602	26,406	29,680	33,641	27,054
Specific NO <sub>x</sub> emissions (KPI3)	g/ton clinker	1,155	1,409	1,632	1,416	1,335
SO <sub>2</sub> emissions (KPI3)	tons	760	992	1,035	1,351	1,059
Specific SO <sub>2</sub> emissions (KPI3)	g/ton clinker	41	53	57	57	52
Clinker produced with monitoring of Dust, NO <sub>x</sub> , SO <sub>2</sub> (KPI4)	%	100	100	100	100	100
VOC/THC emissions (KPI3) <sup>(4)</sup>	tons	641	385	430	291	336
Specific VOC/THC (KPI3) <sup>(4)</sup>	g/ton clinker	34	21	24	18	22
Mercury emissions (KPI3) <sup>(4)</sup>	kg	84.21	32.95	29.51	10.24	12.64
Specific Mercury emissions (KPI3)	mg/ton clinker	4.50	1.72	1.63	0.62	0.83
Clinker produced with monitoring of VOC/THC and Mercury (KPI4) <sup>(4)</sup>	%	99.29	99.41	99.41	69.25	71.31
Dioxin emission (PCDD/F) (KPI3) <sup>(4)</sup>	mg	72	89	99	128	158
Specific Dioxin (PCDD/F) (KPI3) <sup>(4)</sup>	ng/ton clinker	4.81	5.54	5.47	7.76	10.28
Clinker produced with monitoring of Dioxin (PCDD/F) (KPI4) <sup>(4)</sup>	%	79.86	99.41	76.1	57.32	50.94



	Unit	2019	2020	2021	2022 <sup>(1)</sup>	2023
HM1 emission <sup>(2),(4)</sup>	kg	NA	NA	23.41	40.79	25.86
Specific HM1 emission <sup>(2),(4)</sup>	mg/ton clinker	NA	NA	1.29	2.48	1.69
HM2 emission <sup>(3),(4)</sup>	kg	NA	NA	527.94	892.25	1,654.05
Specific HM2 emission <sup>(3),(4)</sup>	mg/ton clinker	NA	NA	29.2	54.22	107.96
Quarries where rehabilitation plan is implemented	number of site	4	4	4	11	11
	%	100	100	100	100	100
Quarries with community engagement plan in place	%	100	100	100	100	100
Quarries with high biodiversity value where biodiversity management plan is implemented	number of site	4	4	4	4	4
	%	100	100	100	36	36
Total water withdrawal	million cubic meter	10.12	10.28	9.89	13.04	12.22
Specific water withdrawal	liter/ton cementitious	433	418	413	412	423
<b>Health and Safety</b>						
Number of Fatality Work-Related Injury (From Workplace and Transportation)						
- Employee	cases	0	0	0	1	0
- Contractor	cases	2	5	3	3	4
- Third party	cases	9	1	2	0	0
Fatality Work-Related Injury Rate of Employee	cases/10,000 employees	0	0	0	1.142	0.000
Lost Time Injury Frequency Rate of Employee	cases/1,000,000 hours worked	0.15	0.16	0.076	0.114	0.396
Lost time injury frequency rate of workplace contractor	cases/1,000,000 hours worked	0.25	0.06	0.124	0.187	0.213
Severity Work-Related Injury Rate of Employee	days/1,000,000 hours worked	6.70	0.98	3.058	2.055	15.833

Within SGS Thailand limited assurance scope (Page 140-141)

NA = Not Available

<sup>(1)</sup> 1<sup>st</sup> year to incorporate performance from abroad operations

<sup>(2)</sup> HM1 included Cadmium (Cd) and Thallium (Tl)

<sup>(3)</sup> HM2 included Antimony (Sb), Arsenic (As), Lead (Pb), Chromium (Cr), Cobalt (Co), Copper (Cu), Manganese (Mn), Nickel (Ni), and Vanadium (V)

<sup>(4)</sup> Required to monitor and measure by Thailand regulation

# Mitigation Actions on Salient Human Rights Issues 2023 of SCG

Scope	Salient Human Rights Issues	People Affected and Number of Companies	Mitigation and Remediation Actions	Results Monitoring
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SCG's Own Operations

<ul style="list-style-type: none"> <li>● <b>Health and safety</b> Lost time and fatality, injury, and occupational illness &amp; disease</li> </ul>	<ul style="list-style-type: none"> <li>● Employees of SCG in subsidiaries (288 companies)</li> </ul>	<ul style="list-style-type: none"> <li>● Level up implementation of SCG Safety Framework in practice in Thailand and abroad.</li> <li>● Develop digital platform for SCG Safety Performance Assessment Program: SPAP and enhance capability of SPAP assessors.</li> <li>● Monitor performance both lagging and leading indicators such as near miss, unsafe actions or conditions, analysis has conducted to identify root causes and determine corrective and preventive measures, and scale up prevention in Thailand and abroad.</li> <li>● Measure health and safety performance by mandating it as part of Safety Performance Management System evaluation, from supervisory up to all executive levels.</li> <li>● Establish safety standard for the solar energy business both industrial and residential segments such as solar roof, solar farms, and etc.</li> <li>● AI and digital platform in risk mitigation such as using AI to monitor fire in risky areas, My Health Application, and a digital platform for at-risk work permits.</li> <li>● Campaign and instill safety culture through "24-hour Safety" to raise awareness among employees both on-the-job and off-the-job.</li> </ul>	<ul style="list-style-type: none"> <li>● 100% of SCG's plants/subsidiaries within the scope of assessment passed SPAP assessment.</li> <li>● 1 subsidiary company with fatality work-related case.</li> <li>● 24 subsidiary companies with lost time work-related cases.</li> </ul>
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Operations of Contractors and Suppliers

<ul style="list-style-type: none"> <li>● <b>Health and safety</b> Lost time injury and fatality in Workplace and Direct Transportation</li> </ul>	<ul style="list-style-type: none"> <li>● SCG's contractors/carriers (1,081 companies)</li> </ul>	<ul style="list-style-type: none"> <li>● Expand travelling and transportation safety measures to abroad with promulgation of Good Transportation Safety for Abroad rules in Vietnam, Indonesia, Laos and Cambodia.</li> <li>● Put in place a system to track and monitor drivers' behavior for transportation vehicles and vehicles used for travel in the company's business through GPS Alarm, Alert, and traffic tickets, for the purpose of analysis and behavior change towards safer driving.</li> <li>● Work on Delivery Plan or Work Schedule to regulate working and resting hours of drivers, and to limit overtime hours to reduce accidents caused by fatigue.</li> <li>● Scale up good practice of Operational Discipline (OD) across business units.</li> <li>● Appoint an accident investigation committee with representatives from business units to conduct root cause analysis and prevent recurrence.</li> </ul>	<ul style="list-style-type: none"> <li>● 89% of operation contractors certified under Contractors Safety Management.</li> <li>● 100% of major carriers have assessed.</li> <li>● 6 of contractors/carriers with fatality work-related injury.</li> <li>● 20 of contractors/carriers with lost time work-related injury.</li> </ul>
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Operations of Joint Ventures

<ul style="list-style-type: none"> <li>● <b>Health and safety</b></li> </ul>	<ul style="list-style-type: none"> <li>● SCG's joint ventures (136 companies)</li> </ul>	<ul style="list-style-type: none"> <li>● Communicate and share good practices in order to scale up and strengthen the execution and performance.</li> <li>● Disseminate high-risk operations safety standards in production process, workplace, travelling, and transportation as well as Life Saving Rules to be aware of acceptable operational guidelines.</li> </ul>	<ul style="list-style-type: none"> <li>● 1 company with fatality work-related injury.</li> </ul>
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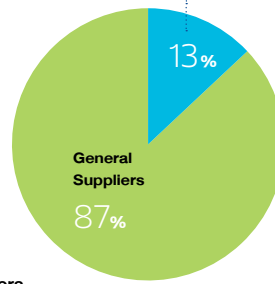
## SCG continues to monitor the effectiveness of mitigation actions of other human rights issues which fall outside of the salient human rights issues.

Scope	Other Human Rights Issues	People Affected and Number of Companies	Mitigation and Remediation Actions	Results Monitoring
SCG's Own Operations	<ul style="list-style-type: none"> <li><b>Employment conditions</b></li> </ul>	<ul style="list-style-type: none"> <li>Employees of SCG in subsidiaries (288 companies)</li> </ul>	<ul style="list-style-type: none"> <li>Define format of hybrid workplace, and flexible working hours to ensure suitability with different job positions.</li> <li>Review workforce structure and positions and establish Job Profile which consists of job description and qualification to be used in selection and assignment that matches employees' talent.</li> <li>Elevate mental health care by organizing destressing activities, striving for work life balance, and Doctor Anywhere system to provide mental health counselling.</li> <li>Give full freedom of expression and association of employees through various committee to hear and collect feedbacks, suggestions for improvement.</li> </ul>	<ul style="list-style-type: none"> <li>69% Employee engagement rate based on the total number of employees.</li> </ul>
	<ul style="list-style-type: none"> <li><b>Migrant workers' rights</b></li> </ul>	<ul style="list-style-type: none"> <li>Employees of SCG in subsidiaries (288 companies)</li> </ul>	<ul style="list-style-type: none"> <li>Migrant worker's contract shall be in English, and communicate to employees about their rights and benefit entitlement.</li> <li>Announcements, safety rules and regulations are to be communicated in migrant workers' native language for greater clearly understanding.</li> <li>Conduct assessment according to The Sedex Members Ethical Trade Audit (SEDEX) in four aspects namely labor standards, health and safety, business ethics and environment.</li> <li>Improve Whistleblowing System to ensure migrant workers' access to it in five languages namely Thai, English, Indonesian, Vietnamese and Khmer.</li> </ul>	<ul style="list-style-type: none"> <li>12 subsidiaries companies passed the audit.</li> </ul>
Operations of Contractors and Suppliers	<ul style="list-style-type: none"> <li><b>Employment conditions</b></li> </ul>	<ul style="list-style-type: none"> <li>SCG's suppliers/ contractors (9,212 companies)</li> </ul>	<ul style="list-style-type: none"> <li>Improve suppliers/ contractors assessment system by reviewing sustainable procurement framework and suppliers/ contractors assessment criteria to cover human rights aspects, to manage risk throughout the value chain.</li> <li>Conduct ESG Risk assessment that includes human rights issues.</li> </ul>	<ul style="list-style-type: none"> <li>94% suppliers/ contractors of procurement spend demonstrate commitment to comply with SCG Supplier Code of Conduct.</li> <li>100% supplier/ contractors of procurement spend processed through the annual Environmental, Social, and Governance (ESG) assessment.</li> </ul>
	<ul style="list-style-type: none"> <li><b>Migrant workers' rights</b></li> </ul>	<ul style="list-style-type: none"> <li>SCG's suppliers/ contractors (9,212 companies)</li> </ul>	<ul style="list-style-type: none"> <li>Regulate and ensure compliance with SCG Supplier Code of Conduct among new and major suppliers/ contractors.</li> <li>Organize training, communication, and capacity building to update changes in requirement to assessors.</li> </ul>	
	<ul style="list-style-type: none"> <li><b>Forced labour</b></li> </ul>	<ul style="list-style-type: none"> <li>SCG's suppliers/ contractors (9,212 companies)</li> </ul>	<ul style="list-style-type: none"> <li>Develop Supplier Portal as communication channel, audit and follow up on corrective and preventive action, and codevelop work plan as well as grievance channel for suppliers/ contractors.</li> </ul>	



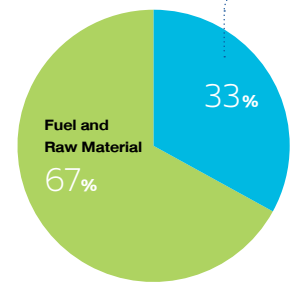
# Supplier Governance and Enhance Towards Sustainability

Ratio of Procurement Spend on Products and Services by Group of Suppliers in 2023



Active suppliers in 2023  
9,212 Suppliers

Ratio of Procurement Spend on Products and Services by Category in 2023



## Critical Suppliers

refer to manufacturers and distributors of products and services that are significant to SCG's business operations, such as high purchasing volume, critical component, or non-substitutable products.

## High Potential Sustainability (ESG) Risk Suppliers

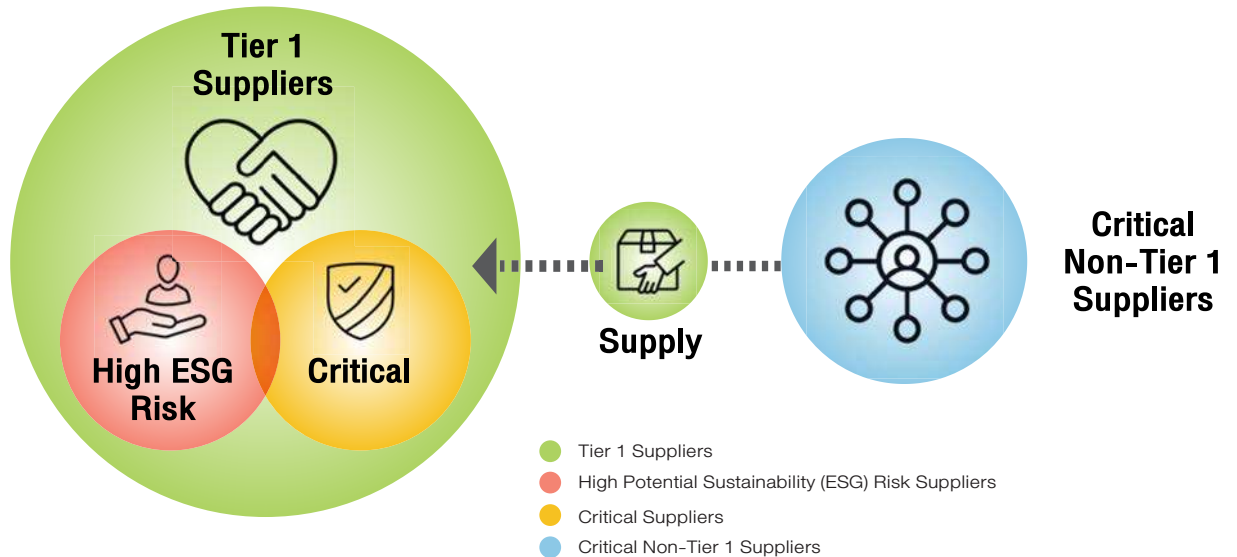
refer to manufacturers and distributors that are likely to cause negative impacts from their improper operations in the social (e.g. human rights, employee and labor care), environment (e.g. waste management) and governance (e.g. legal compliance) aspects.

Ratio of Procurement Spend of High Potential Sustainability Risk Suppliers in 2023



Sustainability risk found relates to safety. Corrective actions have been monitored under the oversight of Sustainable Supplier Committee and Transportation Safety Committee.

3 Suppliers



Sustainability Risk	Number of Suppliers	Corrective Action
Work-related safety	0	<ul style="list-style-type: none"> <li>Collaboratively establish safety targets including equipment and driver safety. Execute and closely monitor these targets, reporting results accordingly.</li> <li>Conduct training sessions and activities to enhance workplace safety, covering topics like safe driving, utilization of safety technology, and vehicle inspection and maintenance.</li> </ul>
Travel and transport related safety	3	

	Strategy	Implementation	Measurement	2019	2020	2021	2022	2023	Target
Economic	<ul style="list-style-type: none"> <li>Select and assess suppliers with the capability for sustainable business.</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate vendors in terms of quality, cost and delivery (QCD Supplier Evaluation).</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate suppliers under Approved Vendor List (AVL) with vendor evaluation (QCD Supplier Evaluation).</li> </ul>	100%	100%	100%	100%	100%	100% suppliers under Approved Vendor List (AVL) receive vendor evaluation (QCD Supplier Evaluation).
	<ul style="list-style-type: none"> <li>Conduct risk assessment and supplier segmentation to formulate strategy and supplier development plan corresponding with the risk.</li> </ul>	<ul style="list-style-type: none"> <li>Conduct a supplier assessment program and segmentation of critical suppliers with a systematic approach.</li> <li>Conduct sustainability risk assessment and supplier segmentation since 2013.</li> </ul>	<ul style="list-style-type: none"> <li>Assess and classify critical suppliers.</li> <li>Assess sustainability risks (ESG Risk).</li> </ul>	100% procurement spend	100% procurement spend	100% procurement spend	100% procurement spend	100% procurement spend	100% supplier of procurement spend processed through the annual Environmental, Social, and Governance (ESG) assessment.
Environment	<ul style="list-style-type: none"> <li>Develop and enhance supplier's capability towards sustainability.</li> </ul>	<ul style="list-style-type: none"> <li>Promote and audit suppliers for registration in the Green Procurement List.</li> <li>Purchase products and services according to the Green Procurement List. 100%.</li> </ul>	<ul style="list-style-type: none"> <li>Green procurement and products on the Green Procurement List.</li> </ul>	7,852 million baht	8,579 million baht	9,548 million baht	9,176 million baht	9,726 million baht	-
				84 products	84 products	92 products	95 products	94 products	
		<ul style="list-style-type: none"> <li>Promote and support suppliers to participate in the assessment of Green Industry (GI).<sup>(1)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Suppliers achieve the Green Industry Level 2 or higher certification.</li> </ul>	1,053 suppliers	458 suppliers	481 suppliers	752 suppliers	481 suppliers	-
Social	<ul style="list-style-type: none"> <li>Develop and enhance supplier's capability towards sustainability.</li> </ul>	<ul style="list-style-type: none"> <li>Raise awareness and behavioral change to create safety culture.</li> <li>Use safety management system to uplift contractors safety standard.</li> <li>Having contractors informed and signed for Life Saving Rules in every access for work.</li> </ul>	<ul style="list-style-type: none"> <li>Operation contractors certified under Contractor Safety Management.</li> </ul>	87%	90%	85%	90%	89%	100% Operation contractors certified under Contractor Safety Management every year from 2012 onwards.
			<ul style="list-style-type: none"> <li>Major carriers processed through Fleet Carriers Standards assessment.</li> </ul>	100%	100%	100%	100%	100%	100% major carriers processed through Fleet Carriers Standards assessment.
			<ul style="list-style-type: none"> <li>Lost Time Injury Frequency Rate (LTIFR) for contractors.</li> </ul>	0.279 cases/1,000,000 Hours Worked	0.216 cases/1,000,000 Hours Worked	0.249 <sup>(2)</sup> cases/1,000,000 Hours Worked	0.276 cases/1,000,000 Hours Worked	0.231 cases/1,000,000 Hours Worked	Reduce Lost Time Injury Frequency Rate of contractors and target for zero by 2024.
Governance	<ul style="list-style-type: none"> <li>Select and assess suppliers with the capability for sustainable business.</li> </ul>	<ul style="list-style-type: none"> <li>Launched SCG Supplier Code of Conduct in 2013 and updated the latest version in 2022.</li> <li>Started supervising new and main suppliers to commit to comply SCG Supplier Code of Conduct continuously since 2014.</li> </ul>	<ul style="list-style-type: none"> <li>Suppliers committed to comply with SCG Supplier Code of Conduct.</li> </ul>	93% procurement spend	91% procurement spend	93% procurement spend	94% procurement spend	94% procurement spend	95% of the procurement spend comes from suppliers who commit to comply with SCG Supplier Code of Conduct by 2023.

<sup>(1)</sup> Green Industry: certification developed by the Ministry of Industry (Thailand) to encourage the industrial sector to operate a green business for sustainable development.

<sup>(2)</sup> 1<sup>st</sup> year to incorporate safety performance from abroad operations.

## Subsidiaries Included in Sustainability Report 2023\* (Thailand)

Business/Company	Production	Raw Materials			Environment											Safety	Occupational Illness and Disease				
		Total Raw Materials	Raw Mat Recycled	Raw Mat Renewable	Energy		Air				Water							Waste			
					Thermal	Electricity	Dust	SO <sub>x</sub>	NO <sub>x</sub>	GHG	Water Withdrawal	Recycled Water	BOD	COD	TSS						
<b>SCG</b>																					
1	The Siam Cement Public Company Limited																				
<b>Cement and Building Materials Business</b>																					
1	SCG Cement Co., Ltd.																	✓	✓		
2	The Concrete Products and Aggregate Co., Ltd.	✓	✓	✓	✓	NR	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	NR	✓	✓	✓	
3	The Siam Cement (Kaeng Khoi) Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	NR	✓	✓	✓	
4	The Siam Cement (Ta Luang) Co., Ltd. (Ta Luang/ Khao Wong)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	NR	✓	✓	✓	
5	The Siam Cement (Thung Song) Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	NR	✓	✓	✓	
6	The Siam Cement (Lampang) Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	NR	✓	✓	✓	
7	The Siam Refractory Industry Co., Ltd.	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	NR	✓	✓	✓	
8	Eco Plant Services Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	✓	✓	
9	SCI Eco Services Co., Ltd.	✓	NR	NR	NR	NR	NR	NR	NR	NR	✓	✓	NR	NR	NR	NR	NR	NR	✓	✓	✓
10	Q Mix Supply Co., Ltd.	✓	✓	✓	NR	✓	✓	NR	NR	NR	NR	✓	NR	NR	NR	NR	NR	NR	✓	✓	
11	Silathai Sanguan (2540) Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	✓	✓	
12	Silasanon Co., Ltd.	✓	✓	✓	NR	NR	✓	✓	NR	NR	NR	NR	✓	NR	NR	NR	NR	NR	✓	✓	
13	CPAC Construction Solution Co., Ltd.																		✓	✓	
14	SCG Decor Public Company Limited																		✓	✓	
15	Cementhai Gypsum Co., Ltd.																				
16	MRC Roofing Co., Ltd.																				
17	The Siam Fibre-Cement Co., Ltd.																		✓	✓	
18	Siam Fibre Cement Group Co., Ltd. (Saraburi/ Ta Luang/Thung Song/Nongkae/Lumpang)	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
19	SCG Landscape Co., Ltd. (Khonkaen/Thung Song/ Ladkrabang/Lamphun/Sriracha/Nongkae/Fence)	✓	NR	NR	NR	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	NR	NR	✓	✓	✓
20	Siam Fiberglass Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	
21	SCG Roofing Co., Ltd. (Saraburi/Saraburi Nuestile/ Nakorn Prathom/Chonburi/Nakorn Rajchasma/ Lamphun/Khonkaen/Nakorn Sri Thammaraj/Nongkae)	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
22	The Siam Sanitary Fittings Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	
23	SCG Cement-Building Materials Company Limited																		✓	✓	
24	SCG Distribution Co., Ltd.																		✓	✓	
25	SCG International Corporation Co., Ltd.																		✓	✓	
26	SCG Building and Living Care Consulting Co., Ltd.																		✓	✓	
27	Nexter Living Co., Ltd.																		✓	✓	
28	Nexter Digital Co., Ltd.																		✓	✓	
29	SCG Living and Housing Solution Co., Ltd.																		✓	✓	
30	SCG Experience Co., Ltd.																		✓	✓	





Business/Company	Production	Raw Materials			Environment													Safety	Occupational Illness and Disease
		Total Raw Materials	Raw Mat Recycled	Raw Mat Renewable	Energy		Air				Water					Waste			
					Thermal	Electricity	Dust	SO <sub>x</sub>	NO <sub>x</sub>	GHG	Water Withdrawal	Recycled Water	BOD	COD	TSS				
20	SCG ICO Polymers Company Limited	✓	✓	✓	✓	✓	✓	NR	NR	NR	✓	✓	✓	NR	NR	NR	✓	✓	✓
21	Map Ta Phut Tank Terminal Co., Ltd.	NR	NR	NR	NR	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓	✓
22	Rayong Olefins Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
23	Map Ta Phut Olefins Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
24	Circular Plas Company Limited	✓	✓	✓	✓	✓	✓	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓		
SCGP (Packaging Business)																			
1	SCG Packaging Public Company Limited																	✓	✓
2	SKIC International Co., Ltd.																		
3	Siam Kraft Industry Co., Ltd. (Kanchanaburi/Ratchaburi)	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	Vexcel Pack Co., Ltd.	✓	NR	NR	NR	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	NR	✓	✓
5	Precision Print Co., Ltd.	✓	NR	NR	NR	✓	✓	NR	NR	NR	✓	✓	NR	✓	✓	✓	✓	✓	✓
6	Invenique Co., Ltd.																		
7	SCGP Excellence Training Center Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	✓	✓
8	SCG Paper Energy Co., Ltd.	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓
9	SCGP Solutions Co., Ltd.																		
10	SCGP Rigid Plastics Co., Ltd.																		
11	International Healthcare Packaging Co., Ltd.																		
12	Thai Cane Paper Public Company Limited (Kanchanaburi/Prachinburi)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13	Thai Containers Group Co., Ltd. (Navanakorn/Ratchaburi/Samut Prakarn/Pathumthani/Songkhla/Chonburi/Prachinburi/Saraburi/Kamphaeng Phet)	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
14	Thai Containers Khonkaen Co., Ltd.	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓	✓
15	Thai Containers Rayong Co., Ltd.	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓
16	Orient Containers Co., Ltd. (Samutsakorn/Omnoi/Nakorn Pathom)	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓
17	Phoenix Pulp & Paper Public Company Limited	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
18	Thai Paper Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	✓	✓	✓	✓
19	The Siam Forestry Co., Ltd.	✓	NR	NR	NR	✓	✓	NR	NR	NR	✓	NR	NR	NR	NR	NR	NR	✓	✓
20	Panas Nimit Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
21	Thai Panason Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
22	Thai Panadorn Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
23	Thai Panaram Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
24	Suanpa Rungсарis Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
25	Siam Panawes Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
26	Thai Panaboon Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
27	Thai Wanabhum Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
28	Prepack Thailand Co., Ltd. (Samutsakorn/Samut Songkhram/Rayong)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓
29	TC Flexible Packaging Co., Ltd.																		
30	SCGP-T Plastics Co., Ltd.																		

Business/Company	Production	Raw Materials			Environment											Safety	Occupational Illness and Disease				
		Total Raw Materials	Raw Mat Recycled	Raw Mat Renewable	Energy		Air				Water							Waste			
					Thermal	Electricity	Dust	SO <sub>x</sub>	NO <sub>x</sub>	GHG	Water Withdrawal	Recycled Water	BOD	COD	TSS						
31	Tawana Container Co., Ltd.	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	
32	Conimex Co., Ltd.	✓	✓	✓	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	NR	NR	NR	NR	✓	✓
<b>Others</b>																					
1	Cementhai Holding Co., Ltd.																				
2	Cementhai Property (2001) Public Company Limited																				
3	Property Value Plus Co., Ltd.																				
4	SCG Accounting Services Co., Ltd.																				
5	SCG Legal Counsel Limited																				
6	CTO Management Co., Ltd.																				
7	SCG Cleanergy Co., Ltd.																				
8	Megatric Co., Ltd.																				
9	Jieng Cleanergy Co., Ltd.																				
10	T-Volt Co., Ltd.																				
11	NP Watt Co., Ltd.																				
12	CN Watt Co., Ltd.																				
13	BNN Energy Co., Ltd.																				
14	SCG Learning Excellence Co., Ltd.																				
15	Add Ventures Capital International Co., Ltd.																				
16	A.I. Technology Co., Ltd.																				
17	Add Ventures Capital Co., Ltd.																				
18	SCG HR Solutions Co., Ltd.																				
19	Bangsue Industry Co., Ltd.																				
20	Cleanergy ABP Co., Ltd.																				
21	Siam GNE Solar Energy Co., Ltd.																				
22	BIT Innovation Company Limited																				
23	SCG Marketplace Holding Company Limited																				
24	Nexter Ventures Co. Ltd.																				
25	SCG Express Co., Ltd.																			✓	✓

\* List of subsidiaries company according to One Report 2023

NR = Non Relevance (The data is not relevant or has no significance to the overall performance of SCG or is not included this year)

Office/Investment/Sales/Service where the collection of environmental, safety and occupational illness data is not necessary

Greenfield (less than 3 years) or newly acquired companies (less than 4 years) is not required to incorporate data into SCG



## Subsidiaries Included in Sustainability Report 2023\* (Abroad)

Business/Company	Country	Production	Raw Materials				Environment													Safety	Occupational Illness and Disease
			Total Raw Materials	Raw Mat Recycled	Raw Mat Renewable	Energy		Air				Water					Waste				
						Thermal	Electricity	Dust	SO <sub>x</sub>	NO <sub>x</sub>	GHG	Water Withdrawal	Recycled Water	BOD	COD	TSS					
<b>Cement-Building Materials Business</b>																					
1	SCG International Middle East Trading L.L.C	United Arab Emirates																		✓	NR
2	SCG Ceramics – Ly Heng Chhay (Cambodia) Co., Ltd	Cambodia																			
3	Khammouane Cement Co., Ltd.	Lao PDR																			
4	PT SCG Pipe and Precast Indonesia	Indonesia	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	NR	NR	✓	✓
5	PT Semen Lebak	Indonesia	✓	NR	NR	NR	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	NR	NR	✓	✓
6	PT SCG Readymix Indonesia	Indonesia	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
7	PT CPAC Surabaya	Indonesia	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	✓	NR	NR	NR	NR	NR	NR	✓	✓
8	SCG Cement-Building Materials Vietnam Limited Liability Company	Vietnam	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
9	Vietnam Construction Materials Joint Stock Company	Vietnam																			
10	Song Gianh Cement Joint Stock Company	Vietnam	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	✓	✓
11	Mien Trung Cement One Member Company Limited	Vietnam	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	✓	✓
12	Danang Cement One Member Company Limited	Vietnam	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓	NR	NR	NR	NR	NR	✓	NR
13	Phu Yen Cosevco Cement Company Limited	Vietnam	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓	NR	NR	NR	NR	NR	✓	NR
14	Cementhai Ceramics Philippines Holdings, Inc.	Philippines	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓	NR	NR	NR	NR	NR	✓	NR
15	Cementhai Gypsum (Singapore) Pte. Ltd.	Singapore																			
16	SCG Concrete Roof (Vietnam) Co., Ltd.	Vietnam	✓	✓	NR	NR	✓	✓	✓	NR	NR	NR	✓	NR	NR	NR	NR	NR	NR	✓	✓
17	SCG Concrete Roof (Cambodia) Co., Ltd.	Cambodia	✓	✓	NR	NR	✓	✓	✓	NR	NR	✓	✓	NR	NR	NR	NR	NR	NR	✓	✓
18	PT SCG Lightweight Concrete Indonesia	Indonesia	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
19	SCG International Australia Pty. Ltd.	Australia																		✓	NR
20	SCG International China (Guangzhou) Co., Ltd.	China																		✓	NR
21	SCG International Hong Kong Limited	Hong Kong																		✓	NR
22	SCG International (Philippines) Corporation	Philippines																		✓	NR
23	SCG International USA Inc.	USA																		✓	NR
24	PT SCG International Indonesia	Indonesia																		✓	NR
25	SCG International Laos Co., Ltd.	Lao PDR																		✓	NR
26	SCG Marketing Philippines Inc.	Philippines																			
27	SCG International Malaysia Sdn. Bhd.	Malaysia																		✓	NR
28	SCG International (Cambodia) Co., Ltd.	Cambodia																		✓	NR
29	SCG International Vietnam Co., Ltd.	Vietnam																		✓	NR
30	SCG International India Private Limited	India																		✓	NR
31	Oitolabs Technologies Private Limited	India																			
32	Unify Smart Tech Joint Stock Company	Vietnam																			
33	Myanmar CBM Services Co., Ltd.	Myanmar																			

Business/Company	Country	Production	Raw Materials			Environment												Safety	Occupational Illness and Disease											
			Total Raw Materials	Raw Mat Recycled	Raw Mat Renewable	Energy		Air				Water								Waste										
						Thermal	Electricity	Dust	SO <sub>x</sub>	NO <sub>x</sub>	GHG	Water Withdrawal	Recycled Water	BOD	COD	TSS														
34	Prime Group Joint Stock Company	Vietnam																										✓	NR	
35	Prime Trading, Import and Export One Member Limited Liability Company	Vietnam																											✓	NR
36	SCG Home Vietnam Co.,Ltd	Vietnam																												
37	Prime - Ngoi Viet Joint Stock Company	Vietnam	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
38	Prime Pho Yen Joint Stock Company	Vietnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
39	Prime - Yen Binh Joint Stock Company	Vietnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
40	Prime - Tien Phong Joint Stock Company	Vietnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
41	Prime - Vinh Phuc Joint Stock Company	Vietnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
42	Prime - Truong Xuan Joint Stock Company	Vietnam	✓	NR	NR	NR	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
43	Buu Long Industry and Investment Joint Stock Company	Vietnam	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
44	PT Semen Jawa	Indonesia	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
45	Mawlamyine Cement Limited	Myanmar	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
46	Prime Dai An Joint Stock Company	Vietnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
47	Kampot Cement Co., Ltd.	Cambodia	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
48	PT KIA Keramik Mas	Indonesia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
49	PT Keramik Indonesia Assosiasi, Tbk.	Indonesia	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
50	PT Kokoh Inti Arebama Tbk.	Indonesia																												
51	Prime Dai Viet Joint Stock Company	Vietnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
52	Prime Thien Phuc Joint Stock Company	Vietnam	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
53	Prime Phong Dien Joint Stock Company	Vietnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
54	Prime Dai Loc Joint Stock Company	Vietnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
55	CPAC Cambodia Co., Ltd.	Cambodia	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
56	Mariwasa-Siam Ceramics, Inc.	Philippines	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
57	SCG Myanmar Concrete and Aggregate Co., Ltd.	Myanmar	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
58	PT Surya Siam Keramik	Indonesia	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
59	SCG Builk One Philippines, Inc.	Philippines																												
60	Prime Hao Phu Joint Stock Company	Vietnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
61	SCG-Boonthavorn (Cambodia) Co., Ltd.	Cambodia																												✓
62	Prime Dai Quang Joint Stock Company	Vietnam	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
63	SCG International Bangladesh Company Limited	Bangladesh																												✓
64	Mingalar Motor Co., Ltd.	Myanmar																												✓
65	PT Siam-Indo Gypsum Industry	Indonesia	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
66	PT Siam-Indo Concrete Products	Indonesia	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
67	PT Pion Quarry Nusantara	Indonesia	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
68	PT Tambang Semen Sukabumi	Indonesia	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
69	Kampot Land Co., Ltd.	Cambodia																												
70	SCG Distribution and Retail (Cambodia) Co., Ltd.	Cambodia																												
71	PT Living Platform Indonesia	Indonesia																												
72	SCG International Corporation Vietnam Co., Ltd.	Vietnam																												

Business/Company	Country	Production	Raw Materials			Environment													Safety	Occupational Illness and Disease
			Total Raw Materials	Raw Mat Recycled	Raw Mat Renewable	Energy		Air				Water					Waste			
						Thermal	Electricity	Dust	SO <sub>x</sub>	NO <sub>x</sub>	GHG	Water Withdrawal	Recycled Water	BOD	COD	TSS				
SCGC (Chemicals Business)																				
1	Recycling Holding Volendam B.V.	The Netherlands																		
2	Kras Investments B.V.	The Netherlands																		
3	Krasgroup Vastgoed B.V.	The Netherlands																		
4	Kras Belgium B.V.	Belgium																		
5	Kras Asia Ltd.	Hong Kong																		
6	Sirplaste - Sociedade Industrial de Recuperados de Plástico, S.A.	Portugal																		
7	REPCO NEX (Vietnam) Company Limited	Vietnam	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
8	Long Son Petrochemicals Co., Ltd.	Vietnam																		
9	Norner AS	Norway																		
10	Norner Research AS	Norway																		
11	PT TPC Indo Plastic and Chemicals	Indonesia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	
12	Chemtech Co., Ltd.	Vietnam	✓	✓	✓	✓	NR	✓	NR	NR	NR	✓	NR	✓	✓	NR	NR	NR	✓	
13	Xplore S.R.L.	Italy																		
14	SENGI UK Limited	UK																		
15	Grand Nawaplastic Myanmar Co., Ltd.	Myanmar																		
16	Viet-Thai Plastchem Co., Ltd.	Vietnam	✓	✓	✓	✓	✓	✓	NR	NR	NR	✓	NR	✓	✓	✓	✓	✓	NR	
17	TPC Vina Plastic and Chemical Corporation Ltd.	Vietnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	NR	
18	Nawaplastic (Cambodia) Co., Ltd.	Cambodia	✓	✓	✓	✓	✓	✓	NR	NR	NR	✓	NR	✓	NR	NR	NR	NR	✓	
19	Binh Minh Plastics Joint Stock Company	Vietnam	✓	✓	✓	✓	✓	✓	✓	NR	NR	✓	NR	✓	✓	✓	✓	✓	NR	
20	North Binh Minh Plastics Limited Company	Vietnam																		
21	PT Berjaya Nawaplastic Indonesia	Indonesia																		
22	SCG Chemicals Trading Singapore Pte. Ltd.	Singapore																		
23	SCG Chemicals (Singapore) Pte. Ltd.	Singapore																		
24	Tuban Petrochemicals Pte. Ltd.	Singapore																		
25	Hexagon International, Inc.	USA																		
26	SENGI Norway AS	Norway																		
27	SCGN AS	Norway																		
28	SENGI Swiss GmbH	Switzerland																		
29	PT Nusantara Polymer Solutions	Indonesia																		
30	Kras Gemert B.V.	The Netherlands																		
31	Kras Hoek van Holland B.V.	The Netherlands																		
32	Kras Polymers B.V.	The Netherlands																		
33	Kras Recycling B.V.	The Netherlands																		
34	REKS LLC	Kosovo																		



Business/Company	Country	Production	Raw Materials			Environment													Safety	Occupational Illness and Disease
			Total Raw Materials	Raw Mat Recycled	Raw Mat Renewable	Energy		Air				Water					Waste			
						Thermal	Electricity	Dust	SO <sub>x</sub>	NO <sub>x</sub>	GHG	Water Withdrawal	Recycled Water	BOD	COD	TSS				
SCGP (Packaging Business)																				
1	Jordan Trading Inc.	USA																		
2	Peute Recycling B.V.	The Netherlands																		
3	Peute Papierrecycling B.V.	The Netherlands																		
4	Peute Plasticrecycling B.V.	The Netherlands																		
5	Peute Recycling International B.V.	The Netherlands																		
6	Peute Portugal, Unipessoal Lda	Portugal																		
7	Peute Recycling Spain S.L.	Spain																		
8	Peute Investments B.V.	The Netherlands																		
9	Infiniplast B.V.	The Netherlands																		
10	Go-Pak UK Limited	UK																		
11	Go-Pak Vietnam Limited	Vietnam																		
12	Go-Pak Paper Products Vietnam Co., Ltd.	Vietnam																		
13	SCGP Solutions (Singapore) Pte. Ltd.	Singapore																		
14	SCGP Rigid Packaging Solutions Pte. Ltd.	Singapore																		
15	Deltalab Global, S.L.	Spain																		
16	Deltalab, S.L.	Spain																		
17	Keylab, S.L.U.	Spain																		
18	Nirco, S.L.	Spain																		
19	Envases Farmaceuticos, S.A.	Spain																		
20	Equilabo Scientific, S.L.U.	Spain																		
21	Sanilabo, S.L.U.	Spain																		
22	United Pulp and Paper Co., Inc.	Philippines	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	NR
23	Vina Kraft Paper Co., Ltd.	Vietnam	✓	✓	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
24	New Asia Industries Co., Ltd.	Vietnam	✓	✓	NR	✓	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	NR	✓	NR
25	Alcamax Packaging (Vietnam) Co., Ltd.	Vietnam	✓	✓	NR	✓	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	NR	✓	NR
26	AP Packaging (Hanoi) Co., Ltd.	Vietnam	✓	✓	NR	✓	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR
27	Packamex (Vietnam) Co., Ltd.	Vietnam	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
28	PT Indoris Printingdo	Indonesia	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓	NR
29	Peute UK Limited	UK																		
30	PT Indocorr Packaging Cikarang	Indonesia	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓	NR
31	Duy Tan Plastics Manufacturing Corporation	Vietnam																		
32	Duy Tan Long An Co., Ltd.	Vietnam																		
33	Duy Tan Precision Mold Co., Ltd.	Vietnam																		
34	Duy Tan Binh Duong Plastics Co., Ltd.	Vietnam																		
35	Mata Plastic Co., Ltd.	Vietnam																		
36	TCG Solutions Pte. Ltd.	Singapore																		

Business/Company	Country	Production	Raw Materials			Environment													Safety	Occupational Illness and Disease
			Total Raw Materials	Raw Mat Recycled	Raw Mat Renewable	Energy		Air				Water					Waste			
						Thermal	Electricity	Dust	SO <sub>x</sub>	NO <sub>x</sub>	GHG	Water Withdrawal	Recycled Water	BOD	COD	TSS				
37	Interpress Printers Sendirian Berhad	Malaysia	✓	✓	NR	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓	NR	
38	PT Primacorr Mandiri	Indonesia	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	NR	
39	Bien Hoa Packaging Joint Stock Company	Vietnam																		
40	PT Fajar Surya Wisesa Tbk.	Indonesia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	
41	PT Dayasa Aria Prima	Indonesia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	NR	
42	PT Indonesia Dirlajaya Aneka Industri Box	Indonesia																		
43	PT Bahana Buana Box	Indonesia																		
44	PT Rapi-pack Asritama	Indonesia																		
45	Tin Thanh Packing Joint Stock Company	Vietnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	NR	
46	Law Print & Packaging Management Limited (UK)	UK																		
47	Law Print & Packaging Management Limited (IE)	Ireland																		
48	Bicappa Lab S.r.L.	Italy																		
49	Starprint Vietnam JSC	Vietnam																		
<b>Others</b>																				
1	Cementhai Captive Insurance Pte. Ltd.	Singapore																		
2	SCG Vietnam Co., Ltd.	Vietnam																		
3	PT SCG Indonesia	Indonesia																		
4	SCG Digital Private Limited	India																		

\* List of subsidiaries company according to One Report 2023

NR = Non Relevance (The data is not relevant or has no significance to the overall performance of SCG or is not included this year)

Office/Investment/Sales/Service where the collection of environmental, safety and occupational illness data is not necessary

Greenfield (less than 3 years) or newly acquired companies (less than 4 years) is not required to incorporate data into SCG







## ASSURANCE STATEMENT

### SGS (THAILAND) LIMITED'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE SIAM CEMENT PUBLIC COMPANY LIMITED'S FOR 2023

#### NATURE OF THE ASSURANCE/VERIFICATION

SGS (Thailand) Limited (hereinafter referred to as SGS) was commissioned by The Siam Cement Public Company Limited (hereinafter referred to as SCG) to conduct an independent assurance of SCG Sustainability Report 2023 and the Sustainability Report webpage (hereinafter referred to as the Sustainability Report) the year ended December 31, 2023 in accordance with the reporting criteria.

#### INTENDED USERS OF THIS ASSURANCE STATEMENT

This Assurance Statement is provided with the intention of informing all SCG's Stakeholders.

#### RESPONSIBILITIES

The information in the Report and its presentation are the responsibility of the directors or governing body (as applicable) and the management of SCG. SGS has not been involved in the preparation of any of the material included in the Report. Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of verification with the intention to inform all SCG's stakeholders.

#### ASSURANCE STANDARDS, TYPE AND LEVEL OF ASSURANCE

The SGS ESG & Sustainability Report Assurance protocols used to conduct assurance are based upon internationally recognised assurance guidance and standards. Assurance has been conducted at a limited level of scrutiny.

The assurance of this report has been conducted according to the following Assurance Standards:

- ISAE 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information
- ISAE 3410, Assurance Engagements on Greenhouse Gas Statements

#### SCOPE OF ASSURANCE AND REPORTING CRITERIA

The scope of the assurance included evaluation of quality, accuracy and reliability of specified performance information as detailed below and evaluation of adherence to the following reporting criteria:

- GRI Standards 2021 (in Accordance with)
- WBCSD/WRI Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard
- Sustainability Accounting Standards Board (SASB)

#### SPECIFIED PERFORMANCE INFORMATION AND DISCLOSURES INCLUDED IN SCOPE

SCG's Sustainability Report are adequately in line with the Sustainability Reporting Standard and fulfills all the required content and quality criteria for the identified aspects listed as below;

- 1) Environmental dimension performance indicators expressed numerically or in descriptive text
  - Energy consumption (petajoules)
  - Greenhouse gas emissions scope 1, 2 and 3 (tons CO<sub>2</sub> equivalent)
  - Water withdrawal (million cubic meters) and recycled water (million cubic meters)
  - Water discharge (million cubic meters)
  - Water discharge by quality (BOD, COD and TSS (tons))
  - Oxides of Nitrogen (NOx), Oxides of Sulfur (SOx), dust and other significant air emissions data including VOCs (tons)
  - Total weight of waste by type and disposal method (thousand tons)
  - Waste management (waste generated, waste diverted from disposal, waste directed to disposal) (tons)
- 2) Social dimension performance indicators or in descriptive text
  - Number and rate of fatality work-related Injury, high-consequence work-related Injury, lost time injury, recordable work-related Injury and number of hours worked
  - Number of fatality work-related occupational illness & disease and occupational illness & disease frequency rate
  - Ratio of the basic salary and remuneration of women to men and gender pay gap
- 3) Governance dimension performance indicators or in descriptive text
  - Double Materiality assessment
  - Number of Tier-1 supplier, significant supplier in Tier-1, spend on significant supplier in Tier-1 and significant supplier in non Tier-1
  - Number of supplier assessed assessment, significant supplier assessed and supplier assessed with substantial actual/potential negative impact

- o Number of suppliers in capacity building program and supplier supports in corrective action plan implementation and supplier assessed with substantial actual/potential negative impact supported in capacity building program and corrective action plan implementation

#### **ASSURANCE METHODOLOGY**

SGS's assurance engagements are carried out in accordance with assurance procedure.

The assurance comprised a combination of

- SCG's Management interviews, including the Sustainable Development team with responsibility for performance in the areas within scope
- Interview with data owners &/or managers responsible for internal data collection and reporting databases
- Document review of relevant systems, policies, and procedures where available
- Understanding, analysing and sample testing the key data collection, aggregation, validation and reporting systems, processes, procedures, and controls
- Sampling evidence to confirm the reliability of the selected reporting standards, selected 8 sites of 3 business units for onsite visit as below:
  - o Cement-Building Materials Business
    - 2 sites of Cement Business including, The Siam Cement (Lampang) Co., Ltd. and Song Gianh Cement Joint Stock Company
    - 2 sites of Building Materials Business including, SCG Ceramics Public Company Limited (HK Plant) and Prime Phu Yen Joint Stock Company
  - o 2 sites of SCGC (Chemicals Business) including, Map Ta Phut Olefins Co., Ltd. and Binh Minh Plastics Joint Stock Company
  - o 2 sites of SCGP (Packaging Business) including, Phoenix Pulp & Paper Public Company Limited and United Pulp and Paper Co., Inc

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

#### **LIMITATIONS AND MITIGATION**

Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process. Note here any other specific limitations for the assurance engagement and actions taken to mitigate those limitation. Some statements and data within the scope were not assured due to lack of accessible records during the timescale allowed for assurance, and these are clearly marked throughout the Report

#### **STATEMENT OF INDEPENDENCE AND COMPETENCE**

The SGS Group of companies is the world leader in inspection, testing and verification, operating in more than 140 countries and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS affirm our independence from SCG, being free from bias and conflicts of interest with the organisation, its subsidiaries and stakeholders.

The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors registered with ISO 9001, ISO 14001, ISO 45001, ISO 50001, ISO 14064-1, ISO 14067, ISO 26000, WFP, SA 8000 and experience on the SRA Assurance service provisions

#### **ASSURANCE/VERIFICATION OPINION**

On the basis of the methodology described and the verification work performed, we are satisfied that the specified performance information included in the scope of assurance is accurate, reliable, has been fairly stated and has been prepared, in all material respects, in accordance with the reporting criteria. For future reporting, more descriptions of SCG and subsidiaries' involvement with reconsidering data collection tool and establish mechanism for internal audit on the data performance and should maintain the system in place.

We believe that the organisation has chosen an appropriate level of assurance for this stage in their reporting.

Signed:  
For and on behalf of SGS (Thailand) Limited



**Montree Tangtermsirikul**  
General Manager  
100 Nanglinchee Road Chongnonsee Yannawa, Bangkok 10120 Thailand  
16 February 2024  
WWW.SGS.COM

# GRI Content Index

Statement of use		The Siam Cement Public Company Limited has reported in accordance with the GRI Standards for the period 1 Jan 2023 to 31 Dec 2023.				
GRI 1 used		GRI 1: Foundation 2021				
GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			ASSURANCE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>General disclosures</b>						
GRI 2: General Disclosures 2021	2-1 Organizational details	SR 06-07				
	2-2 Entities included in the organization's sustainability reporting	SR 130-138				
	2-3 Reporting period, frequency and contact point	SR 104-107				
	2-4 Restatements of information	SR 104-107				
	2-5 External assurance	SR 140-141				
	2-6 Activities, value chain and other business relationships	SR 28-29				
	2-7 Employees	SR 06-07, 121-123				
	2-8 Workers who are not employees			a, b, c	Confidentiality constraints	This information is for internal use.
	2-9 Governance structure and composition	SR 20-23				
	2-10 Nomination and selection of the highest governance body	AR 177-181				
	2-11 Chair of the highest governance body	AR 196				
	2-12 Role of the highest governance body in overseeing the management of impacts	AR 197-199				
	2-13 Delegation of responsibility for managing impacts	AR 199				
	2-14 Role of the highest governance body in sustainability reporting	SR 22-23				
	2-15 Conflicts of interest	AR 198-199, 226-227				
	2-16 Communication of critical concerns	AR 198-199, 226-227				
	2-17 Collective knowledge of the highest governance body	AR 182-185				
	2-18 Evaluation of the performance of the highest governance body	AR 180-181				
	2-19 Remuneration policies	- CEO and Executive Compensation Management <a href="https://file.scgsustainability.com/wp-content/uploads/2023/07/19132202/CEO-and-Executive-Compensation-Management_EN.pdf">https://file.scgsustainability.com/wp-content/uploads/2023/07/19132202/CEO-and-Executive-Compensation-Management_EN.pdf</a>				
	2-20 Process to determine remuneration	- CEO and Executive Compensation Management <a href="https://file.scgsustainability.com/wp-content/uploads/2023/07/19132202/CEO-and-Executive-Compensation-Management_EN.pdf">https://file.scgsustainability.com/wp-content/uploads/2023/07/19132202/CEO-and-Executive-Compensation-Management_EN.pdf</a>				
	2-21 Annual total compensation ratio			a, b, c	Confidentiality constraints	This information is for internal use.
2-22 Statement on sustainable development strategy	SR 04-05					
2-23 Policy commitments	SR 48-49					
2-24 Embedding policy commitments	SR 20-23					
2-25 Processes to remediate negative impacts	SR 33-36					
2-26 Mechanisms for seeking advice and raising concerns	SR 33-36					
2-27 Compliance with laws and regulations	SR 48-49, 96-97, 117					
2-28 Membership associations	SR 50-51					
2-29 Approach to stakeholder engagement	SR 33-36					
2-30 Collective bargaining agreements	SR 121					
<b>Material topics</b>						
GRI 3: Material Topics 2021	3-1 Process to determine material topics	SR 38-39				
	3-2 List of material topics	SR 38-39				



GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			ASSURANCE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>Economic performance</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	AR 15, SR 108-109				
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	AR 15, SR 108-109				
	201-2 Financial implications and other risks and opportunities due to climate change	SR 146, TCFD Report; <a href="https://file.scgsustainability.com/wp-content/uploads/2023/07/25134251/TCFD-Report-2023.pdf">https://file.scgsustainability.com/wp-content/uploads/2023/07/25134251/TCFD-Report-2023.pdf</a>				
	201-3 Defined benefit plan obligations and other retirement plans		a, b, c, d, e	Confidentiality constraints	This information is for internal use.	
	201-4 Financial assistance received from government	SR 108-109				
<b>Market presence</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 98-99, 121-123				
GRI 202: Market Presence 2016	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	SR 121-123				
	202-2 Proportion of senior management hired from the local community	SR 121-123				
<b>Indirect economic impacts</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics					
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported		a, b, c	Information unavailable/incomplete	This information has been included in community investment. Please SR 46-47, 100-101	
	203-2 Significant indirect economic impacts		a, b	Information unavailable/incomplete	Impact valuation has been conducted by project base such as Sharing the Dream, Learn to Earn, The Power of Community, Skills Development School, and Q-CHANG.	
<b>Procurement practices</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 88-89				
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	SR 128-129				
<b>Anti-corruption</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	AR 223-233				
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	AR 223-233				
	205-2 Communication and training about anti-corruption policies and procedures	AR 223-233				
	205-3 Confirmed incidents of corruption and actions taken	AR 223-233				
<b>Anti-competitive behavior</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	AR 223-233				
GRI 206: Anti-competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	AR 223-233				

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			ASSURANCE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>Tax</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	- Tax Policy ; <a href="https://file.scgsustainability.com/wp-content/uploads/2022/03/15125509/SCG-Tax-Policy-2021_EN.pdf">https://file.scgsustainability.com/wp-content/uploads/2022/03/15125509/SCG-Tax-Policy-2021_EN.pdf</a>				
GRI 207: Tax 2019	207-1 Approach to tax	- Tax Policy ; <a href="https://file.scgsustainability.com/wp-content/uploads/2022/03/15125509/SCG-Tax-Policy-2021_EN.pdf">https://file.scgsustainability.com/wp-content/uploads/2022/03/15125509/SCG-Tax-Policy-2021_EN.pdf</a>				
	207-2 Tax governance, control, and risk management	- Tax Policy ; <a href="https://file.scgsustainability.com/wp-content/uploads/2022/03/15125509/SCG-Tax-Policy-2021_EN.pdf">https://file.scgsustainability.com/wp-content/uploads/2022/03/15125509/SCG-Tax-Policy-2021_EN.pdf</a>				
	207-3 Stakeholder engagement and management of concerns related to tax	- Tax Policy ; <a href="https://file.scgsustainability.com/wp-content/uploads/2022/03/15125509/SCG-Tax-Policy-2021_EN.pdf">https://file.scgsustainability.com/wp-content/uploads/2022/03/15125509/SCG-Tax-Policy-2021_EN.pdf</a>				
	207-4 Country-by-country reporting	AR 117, SR 108-109, 123				
<b>Materials</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 43, 76-79				
GRI 301: Materials 2016	301-1 Materials used by weight or volume	SR 110				
	301-2 Recycled input materials used	SR 110				
	301-3 Reclaimed products and their packaging materials		a, b	Information unavailable/incomplete	Information of reclaimed products and packaging materials are collected by business unit for efficient production and quality improvement.	
<b>Energy</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 43, 72-73				
GRI 302: Energy 2016	302-1 Energy consumption within the organization	SR 112-113				Yes
	302-2 Energy consumption outside of the organization		a, b, c, d	Confidentiality constraints	Energy data are very confidentiality of suppliers, transporters, customers and related stakeholders in value chain.	
	302-3 Energy intensity	SR 112-113				
	302-4 Reduction of energy consumption	SR 48, 72-73, 112-113				
	302-5 Reductions in energy requirements of products and services	SR 16				
<b>Water and effluents</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 44, 90-91				
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	SR 90-91				
	303-2 Management of water discharge-related impacts	SR 90-91				
	303-3 Water withdrawal	SR 114-115				Yes
	303-4 Water discharge	SR 114				Yes
	303-5 Water consumption	SR 114-115				
<b>Biodiversity</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 45, 94-95				
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	SR 94-95				
	304-2 Significant impacts of activities, products and services on biodiversity	SR 94-95				
	304-3 Habitats protected or restored	SR 94-95				
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	SR 94-95				

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			ASSURANCE	
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION		
<b>Emissions</b>							
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 43-44, 72-73, 92-93					
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	SR 72-73, 111				Yes	
	305-2 Energy indirect (Scope 2) GHG emissions	SR 72-73, 111				Yes	
	305-3 Other indirect (Scope 3) GHG emissions	SR 111				Yes	
	305-4 GHG emissions intensity	SR 111					
	305-5 Reduction of GHG emissions	SR 111					
	305-6 Emissions of ozone-depleting substances (ODS)			a, b, c, d	Information unavailable/incomplete	Collection of data is not required by law or corporate.	
	305-7 Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant air emissions		SR 117				Yes
<b>Waste</b>							
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 76-79					
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	SR 76-79					
	306-2 Management of significant waste-related impacts	SR 76-79					
	306-3 Waste generated	SR 116				Yes	
	306-4 Waste diverted from disposal	SR 116				Yes	
	306-5 Waste directed to disposal	SR 116				Yes	
<b>Supplier environmental assessment</b>							
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 88-89					
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	SR 88-89, 128-129 <a href="https://www.scgsustainability.com/en/supplier-management-towards-sustainable-value/">https://www.scgsustainability.com/en/supplier-management-towards-sustainable-value/</a>				Yes	
	308-2 Negative environmental impacts in the supply chain and actions taken	SR 88-89, 128-29				Yes	
<b>Employment</b>							
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 45, 98-99					
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	SR 121-122					
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees		a, b	Information unavailable/incomplete	The benefit vary by country and type of employment.		
	401-3 Parental leave	SR 121					
<b>Labor/management relations</b>							
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 45, 96-99					
GRI 402: Labor/Management Relations 2016	402-1 Minimum notice periods regarding operational changes		a, b	Information unavailable/incomplete	Under Labor Protection Act as minimum.		
<b>Occupational health and safety</b>							
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 43, 80-83					
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	AR 85-86, SR 80-83					
	403-2 Hazard identification, risk assessment, and incident investigation	AR 85-86, SR 80-83					
	403-3 Occupational health services	AR 85-86, SR 80-83					
	403-4 Worker participation, consultation, and communication on occupational health and safety	AR 85-86, SR 80-83					
	403-5 Worker training on occupational health and safety	AR 85-86, SR 80-83					
	403-6 Promotion of worker health	AR 85-86, SR 80-83					
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	AR 85-86, SR 80-83					
	403-8 Workers covered by an occupational health and safety management system	AR 130-138					
	403-9 Work-related injuries	SR 118-120				Yes	
	403-10 Work-related ill health	SR 118-120				Yes	



GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			ASSURANCE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>Training and education</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 45, 98-99				
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	AR 216, SR 122				
	404-2 Programs for upgrading employee skills and transition assistance programs	AR 216, SR 98-99				
	404-3 Percentage of employees receiving regular performance and career development reviews	SR 98				
<b>Diversity and equal opportunity</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 45, 96-99				
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	AR 206-207, SR 24, 121				
	405-2 Ratio of basic salary and remuneration of women to men	SR 121				Yes
<b>Non-discrimination</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 96-99				
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	AR 223, SR 96-97				
<b>Freedom of association and collective bargaining</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 45, 96-97				
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	SR 96-97, 121-122				
<b>Child labor</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 45, 96-97				
GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	SR 96-97, 122				
<b>Forced or compulsory labor</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 45, 96-97				
GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	SR 96-97, 122				
<b>Security practices</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 45, 96-97				
GRI 410: Security Practices 2016	410-1 Security personnel trained in human rights policies or procedures	AR 194, SR 88, 96-97				
<b>Rights of indigenous peoples</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 45, 96-97				
GRI 411: Rights of Indigenous Peoples 2016	411-1 Incidents of violations involving rights of indigenous peoples	SR 96-97				
<b>Local communities</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 45, 36, 100-101				
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	SR 100-101 SR 124				Yes
	413-2 Operations with significant actual and potential negative impacts on local communities	SR 100-101				

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			ASSURANCE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>Supplier social assessment</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 88-89				
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	AR 88-89 SR 128-129 <a href="https://www.scgsustainability.com/en/sustainable-value-towards-suppliers-en/">https://www.scgsustainability.com/en/sustainable-value-towards-suppliers-en/</a>				
	414-2 Negative social impacts in the supply chain and actions taken	SR 88-89, 128-129				
<b>Public policy</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 118				
GRI 415: Public Policy 2016	415-1 Political contributions	SR 118				
<b>Customer health and safety</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 35, 84-85				
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	AR 84-85				
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	SR 117				
<b>Marketing and labeling</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 86, 87				
GRI 417: Marketing and Labeling 2016	417-1 Requirements for product and service information and labeling	SR 84-85				
	417-2 Incidents of non-compliance concerning product and service information and labeling	SR 117				
	417-3 Incidents of non-compliance concerning marketing communications	SR 117				
<b>Customer privacy</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	AR 97-98				
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	AR 223				

AR = One Report

SR = Sustainability Report

## Task Force on Climate-related Financial Disclosures (TCFD)

	Recommendations	Disclose	
		AR	SR
GOVERNANCE	Disclose the organization's governance around climate-related risks and opportunities.		
	a) Describe the board's oversight of climate-related risks and opportunities.	78-79	20-23
	b) Describe management's role in assessing and managing climate-related risks and opportunities.		
STRATEGY	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.		
	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	80-81	30-31, 38-41, 43-45, 54-57, 72-75, 90-91
	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.		
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.		
RISK MANAGEMENT	Disclose how the organization identifies, assesses, and manages climate-related risks.		
	a) Describe the organization's processes for identifying and assessing climate-related risks.	78-99	20-23, 30-31
	b) Describe the organization's processes for managing climate related risks.		
	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.		
METRICS and TARGETS	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.		
	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	-	46-49, 72-75
	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	101-103, 125	
	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	-	

AR = One Report

SR = Sustainability Report



# Sustainability Accounting Standards Board Response (SASB)

TOPIC	METRIC	CATEGORY	UNIT OF MEASURE	CODE	RESPONSE/ REFERENCE
Activity Metrics	Production by major product line	Quantitative	Metric tons (t)	EM-CM-000.A RT-CH-000.A RT-CP-000.A	P.110
Greenhouse Gas Emissions	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations	Quantitative	Metric tons (t) CO <sub>2</sub> -e, Percentage (%)	EM-CM-110a.1 RT-CH-110a.1 RT-CP-110a.1	P.111, 124
	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Discussion and Analysis	n/a	EM-CM-110a.2 RT-CH-110a.2 RT-CP-110a.2	P.72-75
Air Quality	Air emissions of the following pollutants: (1) NO <sub>x</sub> (excluding N <sub>2</sub> O), (2) SO <sub>x</sub> , (3) particulate matter (PM10), (4) dioxins/furans, (5) volatile organic compounds (VOCs), (6) polycyclic aromatic hydrocarbons (PAHs), and (7) heavy metals	Quantitative	Metric tons (t)	EM-CM-120a.1 RT-CH-120a.1 RT-CP-120a.1	(1) (2) (3) P.117 (4) (5) (7) P.124
Energy Management	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage alternative, (4) percentage renewable*	Quantitative	Gigajoules (GJ), Percentage (%)	EM-CM-130a.1 RT-CH-130a.1 RT-CP-130a.1	(1) (2) (3) (4) P.112-113, 124
Water Management	(1) Total fresh water withdrawn, (2) percentage recycled*, (3) percentage in regions with High or Extremely High Baseline Water Stress	Quantitative	Thousand cubic meters (m <sup>3</sup> ), Percentage (%)	EM-CM-140a.1 RT-CH-140a.1 RT-CP-140a.1	(1) (2) (3) P.114-115
	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	Quantitative	Number	RT-CH-140a.2 RT-CP-140a.3	P.117
	Description of water management risks and discussion of strategies and practices to mitigate those risks	Discussion and Analysis	n/a	RT-CH-140a.3 RT-CP-140a.2	P.44, 90-91
Waste Management	Amount of waste generated, percentage hazardous, percentage recycled*	Quantitative	Metric tons (t), Percentage (%)	EM-CM-150a.1 RT-CH-150a.1 RT-CP-150a.1	P.116

\*Represents group level only

## CONSTRUCTION MATERIALS Specific

TOPIC	METRIC	CATEGORY	UNIT OF MEASURE	CODE	RESPONSE/ REFERENCE
Biodiversity Impacts	Description of environmental management policies and practices for active sites	Discussion and Analysis	n/a	EM-CM-160a.1	P.45, 94-95
	Terrestrial acreage disturbed, percentage of impacted area restored	Quantitative	Acres (ac), Percentage (%)	EM-CM-160a.2	3,507 ac, 8.26%
Workforce Health & Safety	(1) Total recordable incident rate (TRIR)* and (2) near miss frequency rate (NMFR)* for (a) fulltime employees and (b) contract employees	Quantitative	Rate	EM-CM-320a.1	(1) P.118 Safety KPIs are disclosed in accordance with GRI and GCCA. (2) P.119 (a) 13.799 Cases/ 200,000 hours worked (b) 0.323 Cases/ 200,000 hours worked
	Number of reported cases of silicosis	Quantitative	Number	EM-CM-320a.2	P.119
Product Innovation	Percentage of products that qualify for credits in sustainable building design and construction certifications	Quantitative	Percentage (%) by annual sales revenue	EM-CM-410a.1	P.108
	Total addressable market and share of market for products that reduce energy, water, and/or material impacts during usage and/or production	Quantitative	Reporting currency, Percentage (%)	EM-CM-410a.2	P.108
Pricing Integrity & Transparency	Total amount of monetary losses as a result of legal proceedings associated with cartel activities, price fixing, and anti-trust activities	Quantitative	Reporting currency	EM-CM-520a.1	No case found in 2023

\*Represents group level only

## CHEMICALS Specific

TOPIC	METRIC	CATEGORY	UNIT OF MEASURE	CODE	RESPONSE/ REFERENCE
Community Relations	Discussion of engagement processes to manage risks and opportunities associated with community interests**	Discussion and Analysis	n/a	RT-CH-210a.1	P.36
Workforce Health & Safety	1) Total recordable incident rate (TRIR)* and (2) fatality rate* for (a) direct employees and (b) contract employees	Quantitative	Rate	RT-CH-320a.1	P.118 Safety KPIs are disclosed in accordance with GRI
	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks	Discussion and Analysis	n/a	RT-CH-320a.2	P.31, 80-83
Product Design for Use-phase Efficiency	Revenue from products designed for use-phase resource efficiency	Quantitative	Reporting currency	RT-CH-410a.1	P.108
Safety & Environmental Stewardship of Chemicals	(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products that have undergone a hazard assessment	Quantitative	Percentage (%) by revenue, Percentage (%)	RT-CH-410b.1	(1) P.119 (2) P.119
	Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact	Discussion and Analysis	n/a Community Relations	RT-CH-410b.2	P.85
Genetically Modified Organisms	Percentage of products by revenue that contain genetically modified organisms (GMOs)	Quantitative	Percentage (%) by revenue	RT-CH-410c.1	Not Applicable
Management of the Legal & Regulatory Environment	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	Discussion and Analysis	n/a	RT-CH-530a.1	Annual Report 2023, P.91
Operational Safety, Emergency Preparedness & Response	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)	Quantitative	Number, Rate	RT-CH-540a.1	P.119
	Number of transport incidents*	Quantitative	Number	RT-CH-540a.2	P.119

\*Represents group level only

\*\*Applies the same practice as SCG

## CONTAINERS & PACKAGING Specific

TOPIC	METRIC	CATEGORY	UNIT OF MEASURE	CODE	RESPONSE/ REFERENCE
Activity Metric	Percentage of production as: (1) paper/wood, (2) glass, (3) metal, and (4) plastic	Quantitative	Percentage (%) by revenue	RT-CP-000.B	(1) 81.7% (4) 12.5%
	Number of employees	Quantitative	Number	RT-CP-000.C	Annual Report 2023, P.07
Product Lifecycle Management	Percentage of raw materials from: (1) recycled content, (2) renewable resources, and (3) renewable and recycled content	Quantitative	Percentage (%) by weight	RT-CP-410a.1	(1) P.110 (2) P.110
	Revenue from products that are reusable, recyclable, and/or compostable	Quantitative	Reporting currency	RT-CP-410a.2	74,818 MB (SCG Green Choice and Eco Product)
	Discussion of strategies to reduce the environmental impact of packaging throughout its lifecycle	Discussion and Analysis	n/a	RT-CP-410a.3	P.48, 84-87
Product Safety	Number of recalls issued, total units recalled	Quantitative	Number	RT-CP-250a.1	Zero recall
	Discussion of process to identify and manage emerging materials and chemicals of concern	Discussion and Analysis	n/a	RT-CP-250a.2	P.44, 84
Supply Chain Management	Total wood fiber procured, percentage from certified sources	Quantitative	Metric tons (t), Percentage (%)	RT-CP-430a.1	2.31 MT, 100% of FSC™-CW/ COC : FSC-C133879
	Total aluminum purchased, percentage from certified sources	Quantitative	Metric tons (t) CO <sub>2</sub> -e, Percentage (%)	RT-CP-430a.2	Not Applicable





passion for better



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