Innovative Green Solutions for Sustainable Future

Sustainability Report 2021
SCG Chemicals Company Limited

Chemicals Business for Sustainability

Our Ambitions

SCG Chemicals or SCGC strives to serve as a regional leader, contributing to ASEAN's sustainable growth while delivering value to its customers, employees, business partners, communities, and stakeholders. All of which are handled under a world-class standard of excellence in accordance with corporate governance and international safety requirements. It also seeks to improve people's quality of life by creating high-quality products and services through superior production processes, technological advancements, and innovations.

Sustainable Development Goals

- Be a role model for corporate governance, sustainable development, and the circular economy.
- Adhere to the rule of law and good governance, along with human dignity, rights, and freedom, as well as equal and just treatment.
- Increase competitiveness and management potential throughout the supply chain by purchasing and developing high-quality and environmentally friendly products.
- Reach the target of Carbon Neutrality by 2050.
- Use resources efficiently and reduce emissions by applying the principles of circular economy and innovation to improve health and well-being.
- Enhance health and well-being to attain a zero-injury and zero-illness organization.

Contents

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Message from President and Chairman of the Sustainable Development Committee

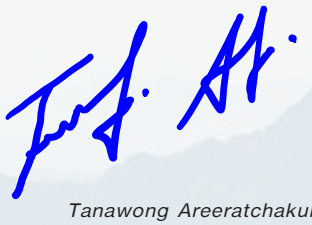
2021 was another year in which the world and Thailand continued to struggle with the adversity of the COVID-19 pandemic, which has wreaked havoc on people's lives and businesses. Both the public and private sectors have learned and adapted to the changes. SCG Chemicals or SCGC adapted to preserve resilience, agility, and speed while adhering to well-established business continuity management (BCM) practices and collaborating with stakeholders from all groups and sectors of society. There were also new challenges posed by global climate change. SCGC was committed to conducting business in accordance with its mission of sustainable development, defining strategies and operational processes as an exemplary organization for corporate governance and sustainable development, prioritizing health, safety, circular economy, energy and climate change, and water conservation throughout the value chain through innovation development and experience creation with customers to understand their needs. Additionally, the Company offered one-stop solutions through the i2P Center for developing products, such as SCGC GREEN POLYMER™ to improve manufacturing processes, achieve a low-carbon and environmentally friendly society by 2030, and achieve carbon neutrality by 2050. All of this we believe will be accomplished through cutting-edge manufacturing technology and machinery, and digital systems to control manufacturing processes and a resource and energy-efficient approach to reduce greenhouse gas emissions and increase the use of clean and renewable energy sources.

Regarding post-consumer plastic management, SCGC teamed up with the leading recycler Sirplaste in Portugal to use technology to collect and transform post-consumer plastics into high-quality recycled plastic resins. Additionally, it collaborated with technology startups to develop innovative recycling technologies capable of converting waste plastic to recycled feedstock. It partnered with Braskem to assess the feasibility and approach of using agricultural by-products as bioplastics for sustainability.

SCGC has implemented a manufacturing process safety management system to manage and monitor occupational health, safety and integrity to achieve zero work-related accidents or illnesses while establishing personnel practices and training guidelines that emphasize ethics, respect for basic human rights, and the elimination of discrimination on the basis of physical and mental differences, race, nationality, religion, language, age, skin color, education, social status, or any other legal matter.

SCGC prioritized caring for the communities surrounding the plants and stakeholders to foster a harmonious living environment in which all challenges were shared and solved appropriately through social development initiatives. Examples include One Manager One Community (OMOC), which empowers all managers to play a role in caring for the communities surrounding the plants; Waste-free community, which implements integrated waste management using the home, temple, school, and waste bank model to increase recycling volume; online platforms that assist community enterprises in generating revenue through merchandizing; and promotion of sustainable development operations for communities, government agencies, and businesses.

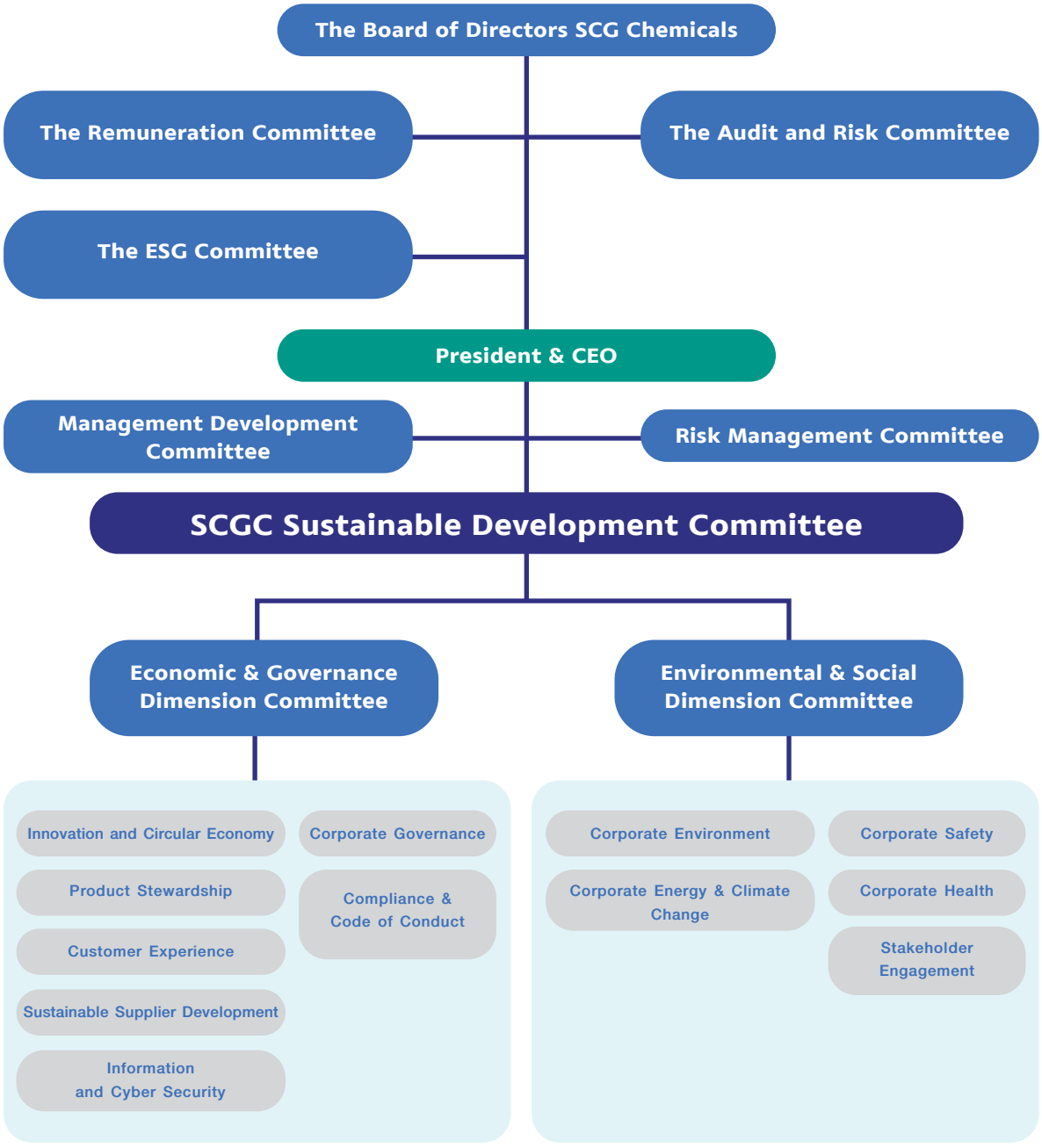
SCGC operated in accordance with corporate governance standard, providing value for the economy, society, and environment and contributing to the country's economic development. Additionally, the Company collaborated with numerous organizations both domestically and internationally to achieve sustainable development goals and to prepare for global changes while delivering sustainable value to all stakeholders.



Tanawong Areeratchakul
President, SCG Chemicals

Structure of Sustainability Operations

SCG Chemicals or SCGC appointed the Sustainable Development Committee to be responsible for supervising the implementation of the Company's sustainable development goals through the Economic and Corporate Governance Excellence Committee and the Environment and Society Excellence Committee. Each committee has a subcommittee responsible for each sustainability issue and monitors the plan that aligns with each company's representative. The subcommittees meet on a regular basis, approximately every 1-2 months. These subcommittees report to the Dimension Committees, which manage and monitor business and ESG-related risks by following the WBCSD's guidelines to ensure effective, efficient, and timely management and report on the implementation status at the business level to the Risk Management Committee on a quarterly basis.



Advocating for Sustainability at the Committee Meetings in 2021

Committee	Number of Meetings (times/year)	Meetings' Topics
1. SCGC Sustainable Development Committee	6 (every two months)	• Management of environmental, social, and governance (ESG) challenges throughout the sustainable supply chain. • Policy announcement aimed at achieving net-zero greenhouse gas emissions. • Preparation of short-term and long-term plans to address critical concerns of sustainable development in accordance with the goals.
2. Economic & Governance Dimension Committee	6 (every two months)	• Supervision of economic and governance processes to be in compliance with the business's ESG and sustainable development directions.
• Compliance & Code of Conduct	12 (every month)	• Supervision and development of a business plan to be in line with applicable laws and business ethics and to prevent of non-compliance. • Communication and oversight of legal concerns pertaining to the Chemicals Business.
• Corporate Governance	12 (every month)	• Supervision of businesses to ensure adherence to corporate governance requirements.
• Innovation and Circular Economy	6 (every two months)	• Establishment of circular economy-based policies, strategies, indicators, and goals. • Development of circular economy-based products and services, establishing a network at the local and national levels and promoting the use of innovation and technology.
• Product Stewardship	6 (every two months)	• Supervision of responsibilities in products and services across the supply chain.
• Customer Experience	6 (every two months)	• Customer relationship management across the supply chain, attentive customer service, and the identification of opportunities to increase corporate value.
• Supplier Development	12 (every month)	• Establishment of business partnership and sustainable supply chain management.
• Cyber Security	12 (every month)	• Supervision of operational information security indexes, including leading and lagging indicators, and development of operational strategies to achieve the goals.
3. Environmental & Social Dimension Committee	6 (every two months)	• Supervision of Environmental & Social processes to be in compliance with the business's ESG and sustainable development.
• Climate Change and Energy	12 (every month)	• Supervision of issues related to climate change and energy • Management of input risk.
• Environment	12 (every month)	• Eco-Efficiency Assessment. • Utilization of resources, water and wastewater management, waste management, and air quality. • Environmental Management System.
• Safety	6 (every two months)	• Operational safety management encompasses safe work procedures, processes and facility risk management, transportation safety, and safety culture.
• Health	12 (every month)	• Worker care includes the prevention of illness or illness at work and health promotion to lower the risk of off-duty factors.
• Stakeholder Engagement	6 (every two months)	• Management of stakeholders, employee care, business partners, community and social development, government agencies, media, and human rights activities.

Role of Sustainable Development Committee

Mongkol Hengrojanasophon
Environmental & Social Dimension Committee Leader

Sakchai Patiparnpreechavud
Economic & Governance Dimension Committee Leader

"Sustainable development efforts and business operations must be integrated and be in the same direction. Customers today place a high priority on the environment. Our manufacturing processes and products must be environmentally and socially responsible, contributing to environmental and social challenges. For example, to address waste issues, we design our products to be recyclable so that they can be used as recycled feedstock, reducing waste and resource consumption as well as greenhouse gas emissions, while also promoting the waste bank approach, in which the community can collect and sort waste for recycling in the new manufacturing process.

The Committee is responsible for formulating policies and plans to achieve corporate goals, particularly Carbon Neutrality by 2050 in short-, medium-, and long-term plans, as well as annual action plans. This is a global issue that has a direct impact on business. Our primary strategies are to transition to clean and renewable energy sources and to adopt the circular economy principle based on a make-use-return approach that results in closed-loop circulation. More technologies, such as carbon capture, hydrogen consumption, and efforts, such as natural resource conservation, and ecosystem restoration, will be required in the future. The Committee must therefore exercise rigorous oversight to ensure that the business operates in accordance with its policies and accomplishes its goals.

Aside from addressing social concerns, such as human rights and poverty, which involve stakeholders ranging from employees to communities to customers, we also focus on working with all sectors to collaboratively undertake development initiatives that stakeholders are interested in and agree on. Several examples include community enterprise programs that strengthen and sustain communities. In this regard, an independent external body analyzed and assessed the company's stakeholder engagement to provide feedback for improvement.

SCGC has been recognized as level 4 in Rayong's Eco Industrial Town, with the highest ranking, level 5. Additionally, we believe that to achieve meaningful changes, it is vital to collaborate with all sectors, including government, communities, and society, all of which must have strong and consistent goals and policies, particularly on global warming and climate change, which are global issues affecting everyone."

"Our mission is to ensure that our business performs efficiently and that our products and services contribute to improving stakeholders' quality of life and a healthier environment; that is to be economically, socially, and environmentally sustainable.

The Dimension committee's supervision is divided into seven major areas: corporate governance, compliance, sustainable supplier, customer experiences, product stewardship, innovation and circular economy, and information and cyber security, all of which are prepared in short, medium, and long-term plans.

Recognizing that climate change is a major concern, SCGC aims to achieve Carbon Neutrality by 2050. SCGC Green Polymer™ was developed to emit fewer greenhouse gases than other products, with an initial goal of selling 200,000 tons by 2026, representing 20% of total sales, in which we consider a challenge. We seek to achieve the goals of developing products that minimize resource consumption while retaining crucial properties, such as durability and recyclability, which rely on appropriate processing technology, and the development of bioplastics from agricultural products to reduce the use of fossil fuels. Furthermore, we have worked with customers, business partners, and stakeholders to reduce greenhouse gas emissions until the targets are met.

SCG Chemicals' research and development capabilities are its greatest asset. We are Southeast Asia's sole company with technology for producing catalysts, which are precursors to polymer production. We also have the i2P center that fosters customer engagement and demands, resulting in innovation that meets their needs. We are also an organization that is always adapting, keen to make quick decisions, and learn from hands-on practices in which businesses are confronted with the world of VUCA (Volatility, Uncertainty, Complexity, and Ambiguity)), which we must anticipate and manage these dynamics at all times through networks of internal and external experts. However, forecasting is challenging. Learning and adaptation are critical components of long-term corporate operations.

SCGC has committed to be a sustainable chemicals business role model nationally and worldwide and to cooperate with all sectors to enhance sustainable development."

Business Operations of SCG Chemicals

SCG Chemicals: Challenges and Goals

In 2021, the COVID-19 pandemic continued to have impacts on economies across the world, especially in Asian countries. In addition, concerns about global warming and plastic waste have prompted several countries to establish policies aimed at reducing greenhouse gas emissions and launching clearer plastic waste management measures. To emphasize its leadership position in the petrochemical industry, SCGC expedited its business strategies to respond to market changes promptly and sustainably. It introduced both short-term plans to offset the impacts of the COVID-19 and long-term plans to create High Value-Added product innovations and solutions that conform to the new normal and sustainable business practices.

Accelerate and Adapt for Sustainability

- **Hybrid Workplace:** Changed the way of working to offer greater work flexibility to ensure employees' good health and safety. This approach enabled employees to choose to work in a safe and appropriate location with physical distance while still being able to work efficiently, conveniently, and quickly. It also introduced proactive COVID-19 prevention measures such as Bubble and Seal, work zoning, work grouping, and the remote monitoring system. All of which aimed to limit the plants' workforce while allowing employees to work from home.
- **Accelerate Circularity:** Accelerated the transition to the circular economy through the brand SCGC GREEN POLYMER™ to maximize resource use, mitigate global warming, and meet the demands of environmentally concerned customers, brand owners, and consumers. Towards the circular economy, our action plans spanned the entire value chain from upstream, Intermediate, to downstream. Examples include an innovation of high-quality plastic resins to reduce usage of plastic resin while retaining the same properties; 100% recyclable plastic products; the conversion of post-consumer plastics into high-quality recycled plastic resin and recycled feedstock for the petro chemical industry; and the development of bioplastics.
- **Accelerate Innovation:** Accelerated business growth through the development of High Value Added innovative products and services (HVA), which focuses on four industrial segments: infrastructure, mobility, healthcare and energy. The product development efforts were propelled by in-house research and development as well as open innovation with a number of research and development networks from educational institutions and research institutes throughout the world, including Thailand, Asia, and Europe. Additionally, SCGC operates ASEAN's first and only i2P Center for innovation and product development, which was created to accelerate customer idea generation.
- **Accelerate Digital Technology:** Accelerated the adoption of digital technologies across the supply chain to boost the speed and efficiency of business capacities by establishing the Single Data Platform to provide real-time access to the same dataset to all relevant stakeholders. The platform provides a series of access points to efficient and appropriate raw material sourcing based on market conditions, optimization and consistency of the production process (Reliability), machine malfunction detection in advance of damage, and the development of a Digital Commerce Platform (DCP) to connect customer order data to supply chain management data, allowing customers to track purchase orders anytime, anywhere, and saving up to 70% of the time.

Chemicals Business for Sustainability in ASEAN

SCGC

Total Assets in ASEAN

Myanmar
300

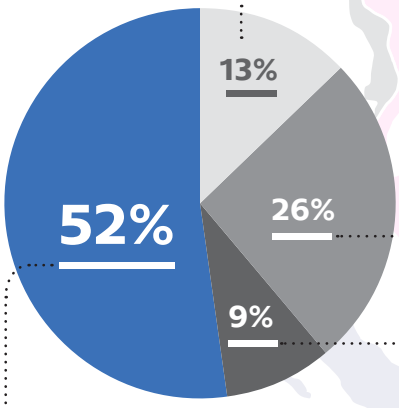
Vietnam
149,338

Cambodia
606

Indonesia
38,315

Other Countries
8,944

Total
197,503 Million Baht
(52% of Total Assets)



Revenue from Sales

Domestic

Company that does business in ASEAN (excluding Thailand)

Export all over the world and other operations

Export in ASEAN

Products and Services	Production Volume (Per Year)*	Number of Factories
Olefins	3,400,000 tons	2
Polyolefins and Derivatives • HDPE, MDPE, LLDPE, LDPE, PP, High Density Polyethylene Compound for Pipe	2,130,000 tons	9
Polyvinyl Chloride (PVC) and Derivatives • PVC Resin, PVC Finished Products, PVC Compound	1,333,000 tons	14
Jetty & Tank Terminal (loading fee/quantity compared to ships)	210,000 Tons	4
Product development and solutions release to the market	15-20 items	-

*Only the main product of SCG Chemicals subsidiary

High Value Added Products and Services

High Value Added Products

Food & Beverage Industry

- Flexible packaging
- Retort pouch
- Lightweight bottle cap

Building Construction and Infrastructure Industry

- Insulation for electrical wire, telephone cables, and cables
- Water tank
- Vinyl doors and windows
- Large HDPE pipe

Other Industries

- Medical equipment
- Agricultural equipment
- Automotive interior and exterior parts and batteries
- Refrigerator and washing machine parts

High Value Added Services

Industrial Solutions

- Integrating solutions and digital solutions that increase productivity while being environmentally friendly, as well as safety management in the manufacturing process

- Energy conservation furnace coating for petrochemical, steel, and ceramic industries
- Furnace Coil Inspection Robot, Tank Inspection Robot, and Sky Visualizer Robot
- Patents of HDPE production process and Functional Material CIERRA™

Solar Energy System Solutions

- Thailand's first integrated floating solar farms

Progress in 2021

- **Bio-ethylene:** A feasibility study on a joint venture to build a plant to manufacture bio-ethylene with Braskem to generate bio-based polyethylene. The purpose is to promote the use of environmentally-friendly plastics on a larger scale.
- **rHDPE:** A collaboration with Unilever to develop and transform current HDPE packaging bottles (gallon bottles, laundry detergent bottles, softener bottles, shampoo bottles, and conditioner bottles) to recycled HDPE (rHDPE). This partnership marked the first time in Thailand that used plastic from household waste is recycled into new packaging.

- **Advanced Recycling Technology:** A technology that turns used plastic into recycled feedstock for petrochemical plants. The process has been certified ISCC PLUS granted by the International Sustainability and Carbon Certification (ISCC). SCGC is Thailand's first company to be certified in the Advanced Recycling category.

ALL THAILAND

SCGC joined as part of the ALL THAILAND project with the Federation of Thai Industries, the PPP Plastics network, and AEPW to manage used plastics in a sustainable manner. The project is divided into three sub-projects.

- **Eco Digiclean Klongtoei** Project which leverages digital technologies to manage plastic waste from the upstream area.

- **Rayong Less-Waste**
  Project which intends to extend the community-based and local waste management model based on circular economy principles across the entire province of Rayong.

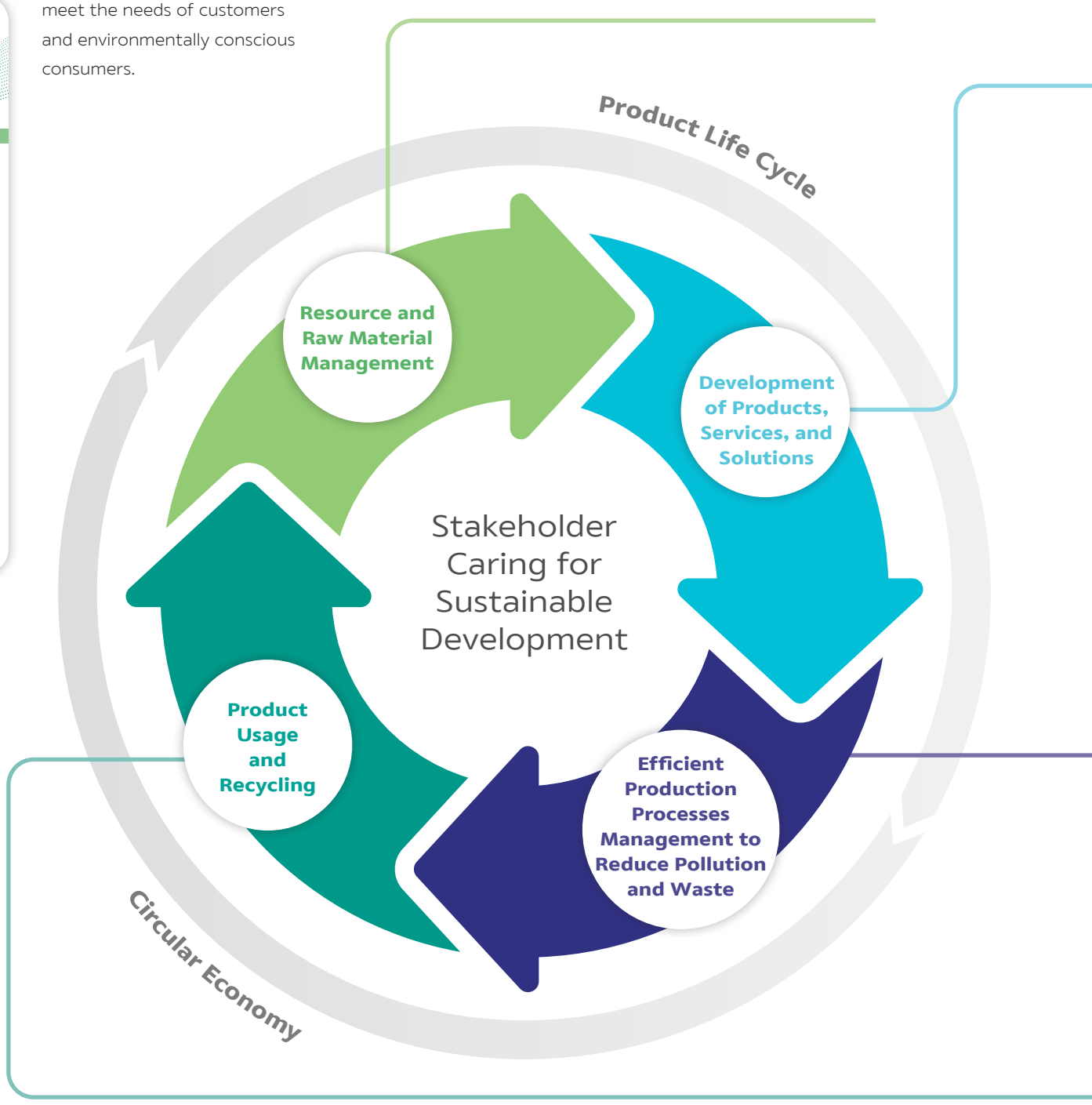
- **Paving Green Roads**
  Project which explores how to effectively convert post-use plastics as ingredients for paving asphalt roads while minimizing environmental impact.

Sustainable Value Chain

SCG Chemicals or SCGC integrates circular economy principles across the value chain and product life cycle to maximize resource use, boost recycling, minimize greenhouse gas emissions, and meet the needs of customers and environmentally conscious consumers.

Resource and Raw Material Management

1. **Energy:** Reduce the usage of fossil fuels and raise the proportion of renewable energy usage, such as solar energy, through research and development.
2. **Raw Materials:** Reduce the usage of raw materials, raise the proportion of recycled raw material use, and maximize waste reintroduction approach for processing through research and development.
3. **Water:** Reduce water usage, utilize water more efficiently, and raise the proportion of recycle wastewater usage.



Development of Products, Services, and Solutions

4. **Technology-driven Innovation:** Research and development efforts are made to create innovations and incorporate technology into the development of products, services, and solutions, encompassing end-to-end eco-friendly processes from design to sourcing, manufacturing, sales, transportation, usage, and recycling where energy and resource consumption are maximized, and waste is kept to a minimum.
5. **Collaboration with Customers:** Identify real customer needs and develop products that meet the required and desired standards while also adding value to customers, reducing energy and resource consumption, lowering greenhouse gas emissions, reducing waste to be disposed of, and extending the product's lifespan.

Efficient Production Processes Management to Reduce Pollution and Waste

6. **Production Efficiency Enhancement:** Optimize equipment and processes to minimize pollution and waste from the manufacturing process, including greenhouse gas emissions, air pollution, and waste.
7. **Waste Recycling from the Production Process:** Study properties of wastes and develop technology for waste recycling, reprocess into raw materials for use in plants, or transfer to other plants as raw materials.
8. **Quality Control Before Released into the Environment:** Use technology to continuously control, monitor, and inspect the waste quality to meet or exceed legal standards.

Product Usage and Recycling

9. **Product Durability:** Develop products that are more durable and consume fewer resources while retaining the properties that enable lower energy consumption and recycling.
10. **Waste Collection for Reintroduction into Manufacturing Processes:** Develop technology to manage waste collection from expired products for efficient reintroduction into manufacturing processes.
11. **Collaboration with All Sectors to Drive the Circular Economy:** Coordinate with the government, private sector, academic institutions, and civil society to form a comprehensive waste management collaboration network, create economic value through waste recycling by generating income for the community, or provide public benefits including decrease of waste amount to be disposed and greenhouse gas emissions.

The Value We Create

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

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

Ensure sustainable consumption and production patterns.

Take urgent action to combat climate change and its impacts.

Stakeholder Engagement

SCG Chemicals or SCGC places high importance on all stakeholders, recognizing that stakeholder feedback is crucial to the development of more efficient and sustainable operations. SCGC revised its activities and channels of stakeholder engagement on a yearly basis to ensure that the Company provides opportunities for all stakeholders to engage and provide transparent feedback on concerns.

Stakeholder Group	Objective of Engagement	Engagement Approach	Needs and Expectations	Detail	Pages
Shareholder/ Investor	• Disclose material and necessary information about SCGC's performance • Listen to opinions/ suggestions and use them for further developments and executions.	• Hold activities for SCG's executives to communicate its business strategies and directions. • Communicate the Company's performance through the Annual Report, the Sustainability Report, and SCG's website.	• Disclosure of performance to give investors an overview of development directions continuously. • Plans and strategies towards short-term and long-term goals.	• Sustainability Report 2021	
Employee	• Understand employee needs. • Recognize employee needs and provide facilities to ensure employees can work happily and effectively. • Disclose and communicate business activities of SCGC with employees. • Promote a culture of collaboration to work with other stakeholders.	• Quarterly meetings with CEO (TA Talk). • Quarterly meetings with Executives. • Employee engagement survey conducted by an external consultant every two years. • Develop an annual engagement plan in each unit to foster employee engagement. • Activities that foster employee engagement (Most activities were conducted vi online platforms). • Communicate updates to employees through internal communication channels, such as email (WeLink), LINE group, Employee Connect Application.	• Reskilling and upskilling to accommodate business changes. • Corporate directions and adjustments. • Employee caring.	• Collaborating to Overcome the COVID-19 Pandemic Disruptions 16 • Health and Safety 34 • Business Code of Conduct 39 • Human Rights 44 • Employee Caring and Development 45 • Talent Attraction 45 • Community and Social Involvement 46	
Supplier and Contractor	• Promote and support workplace safety in suppliers' businesses with regard to production and transportation. • Support and advance the operation of suppliers and enrich knowledge to maximize operational efficiency. • Develop collaborative projects for business growth and expansion. • Promote and support suppliers and contractors to comply with regulations and laws relevant to environment and safety.	• Regularly visit suppliers and contractors to exchange ideas and listen to suggestions for improvement. • Foster safety awareness and promote behavioral change to create a culture of workplace safety. • Share knowledge and new trends that may affect the operation of suppliers and contractors. • Elevate transportation contractors by carrying out annual assessment and development initiatives under the Sustainability Program every year. • Develop operational standards for suppliers and contractors and implement digital technology to improve safety amid the COVID-19 pandemic.	• Provide knowledge and serve as a mentor for contractors to enhance their transportation safety for mutual growth alongside SCGC. • Provide knowledge on the environmental, social, and governance (ESG) management to enhance the operation of suppliers and contractors and reduce operational and reputational risks.	• Health and Safety 34 • Business Code of Conduct 39 • Sustainable Value Towards Supplier 40	
Customer	• Understand customer needs to deliver products and services that meet their needs. • Co-develop products with business customers and foster collaboration among them to develop products and services that contribute to sustainability. • Create channels for customers to offer suggestions on products, seek advice and troubleshooting, and submit complaints.	• Receive complaints, suggestions, and other feedback through various channels around the clock. • Co-develop products with business customers. • Develop collaborations with customers in projects that promote social sustainability. • Develop products, services, and solutions under consideration of environmental, health, and safety impacts.	• Integrate services and solutions to meet a comprehensive range of customer need. • Provide online channels for customers during the COVID-19 pandemic.	• SCGC GREEN POLYMER™ Plastic Innovation for Better Future 20 • i2P Center The Solution for Our Planet 24 • Energy and Climate Change 30 • Circular Economy 32 • Product and Service Stewardship 36 • Customer Experience Creation 41	

Stakeholder Group	Objective of Engagement	Engagement Approach	Needs and Expectations	Detail	Pages
Community	• SCGC is the community's top-of-mind organization when it comes to activities in improving the equality of life of the communities, encouraging sustainable self-reliance, and being part of the environmental stewardship in areas where it operates in Thailand and ASEAN. • Listen to the opinion of communities. • Develop collaborative projects to enhance community competence for the benefit of society.	• Management team and employees joining the monthly dialogue with the local community to listen to suggestions, feedback, and their need. • Annual community satisfaction survey. • Serve as partner and consultant and leverage the Company's capability to help develop various aspects of communities. • Integrate the collaboration between communities, experts, the government, and related sectors to create social impacts.	• Prevent impact of business operations on communities and the environment. • Leverage the Company's competency to elevate the quality of life in communities. • Build career and income stability to promote self-reliance. • Take care of communities during the COVID-19 pandemic.	• Collaborating to Overcome the COVID-19 Pandemic Disruptions • Circular Economy • Environmental Management • Social and Community Involvement	16 32 42 46
Government Agency	• Conduct business activities in strict compliance with applicable law and regulations. • Collaborate with government agencies in academic efforts and provide support to activities.	• Listen to opinions and suggestions from the government sector. • Offer opinions and suggestions towards the rules, regulations, and guidelines issued by the government. • Foster engagement and share good practices with the government sector to expand their adoption, e.g., promoting the use of handrails when using stairs, health management. • Serve on a panel or a working group of the government sector to propose rules and regulations.	• Serve as a role model in management transparency and excellence for other organizations. • Cooperate with government agencies and propose good practices for sustainable development. • Participate in collaborative projects that seek to achieve sustainable development goals (SDGs).	• Social and Community Involvement	46
Media	• Communicate corporate news by conducting in-depth interviews and online surveys (media empathy) to prepare information that meets the needs of the media. • Establish online channels for communicating news and updates, such as SCG News Channel, to ensure information is disclosed fully, accurately, and timely. • Foster engagement and good relations with the media.	• Regularly disclose business information in various aspects, such as quarterly operating result announcements and press conferences. • Occasional site visits and CSR activities. • Support press activities beneficial to society and consistent with SCGC's guidelines. • Listen to the media's opinions, suggestions, and room for improvement once or twice every month.	• Serve as a role model of conglomerates that places emphasis on and actively implements sustainable development (economic, social, and environmental) in its business operations and successfully achieves tangible results.	• Sustainability Report 2021	
Civil Society Sector, Academia, and Opinion Leaders, NGO	• Disclose information completely and transparently. • Listen to opinions and suggestions from the civil society sector. • Seek opportunities to create the partnership and drive issues related to sustainability. • Foster public awareness and understanding of key sustainable development issues. • Leverage the expertise of specialists to support collaborative projects.	• Listen to opinions and suggestions from civil societies, scholars, and opinion leaders to improve the Company's operations • Participate in projects that promote social sustainability • Foster engagement and share good practices with the government sector to expand their adoption, e.g., transportation safety, health management.	• Serve as a role model and a mentor on sustainable development for medium and small organizations. • Join forces with large organizations to create significant changes in terms of sustainability. • Cooperate with government agencies and propose good practices for sustainable development.	• Sustainability Report 2021	

2021 Performance Highlights

E Environmental

GHG Emissions Reduction
801,000 tons carbon dioxide (compared with BAU at the base year of 2007)
14 percent

Energy Consumption Reduction
8.31 gigajoules (compared with BAU at the base year of 2007)
10 percent

Alternative Energy
3,428 MWh accumulation of alternative energy
8,527 MWh

Carbon Label Certified
10 products

Recycled Materials
0.6 percent

Environmental Expense and Investment
993 million baht
0.4 percent of revenue from sales

Green Procurement Purchased
1,650 million baht
14 percent of total purchasing

"SCG Green Choice" Products and Services
49 percent of revenue from sales

Suppliers Being Conducted Environment Social and Governance (ESG) Risk Assessments
99 percent of suppliers with procurement spending over million baht

Water Withdrawal Reduction
4.01 million cubic meters (compared with BAU at the base year of 2014)
12 percent

Recycled Water
5.5 percent

Wastewater
0.60 m^3/ton product

Hazardous/ Non-Hazardous Waste to Landfill
0/0

S Social

Lost Time Injury Frequency Rate
0.010 case per 200,000 hours worked

Employee / Contractor
0 case / **2** cases

Occupational Illness Frequency Rate
0.06 case per 200,000 hours worked

Employee / Contractor
0.02 / **0.08**

Fatality
Employee / Contractor
0 cases / **3** cases

OHIFR Employee **0**

Distribution Rate/10,000 Shipment
0.03

Motor Vehicle Accident (MVA rate)/ 1,000,000 Km
0.08

Sharing Opportunities, Drawing the Future Program
19 projects
2.3 million baht
1.76 SROI

Number of Check Dam
6,500 units
1.24 SROI

Social Contribution
61.93 million baht

Community Satisfaction
88 percent

Community Forest Area (2017-2021)
146,600 trees
218 rai

G Economics and Governance

Good Governance

0 Non Compliance Case

0 Corruption Case

Cyber Security

0 Number of Cyber Threat Cases

0 Number of Complaints Regarding Data Insecurity

High Value Added Product and Service
36 percent from sales

Investment in Research and Innovation
1,726 million baht
0.7 percent from sales

Feature Story

Enterprise Materiality

In late 2019, Control Room Operator (Boardman) **Nakorn Piyanuch** and Field Operator **Nattapon Setthisakko** went about their routine duties at a Thai Polyethylene Company Limited plant in Rayong's Map Ta Phut Industrial Estate.

Nakorn, Nuttapon, and other employees boarded a company shuttle bus and ate lunch at the canteen. The two recalled the news of the COVID-19 outbreak. Even still, it looked to them to be implausible.

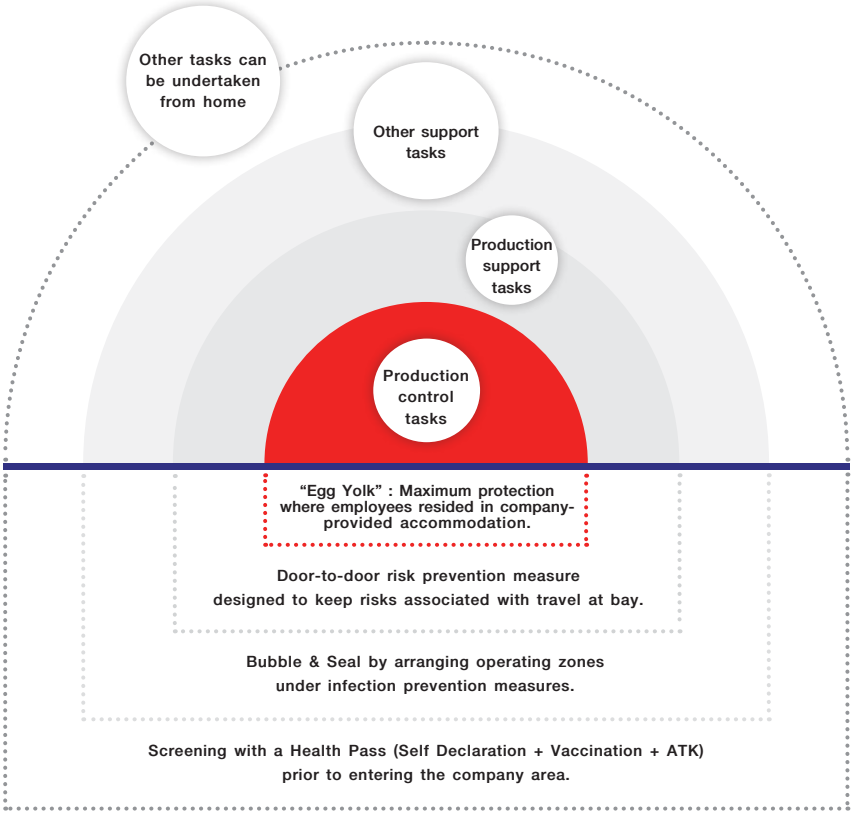
However, **Jirasak Traipin**, Plant Production Manager, was concerned about the situation and had to attend situation-monitoring meetings in Bangkok regularly. At the management level, SCG Chemicals or SCGC established a Business Continuity Management (BCM) plan to avoid production line interruptions. Several measures were taken to ensure that employees were safe, and that the business could continue producing and delivering products and services as usual despite the pandemic.

The plant where Nakorn has worked would receive propylene as a raw material to make polypropylene, or PP, which is essential in various industries, such as the manufacture of car consoles for automobile manufacturers.

If the production line is disrupted due to an COVID-19 infection, the damage cost to the company might reach ten million baht each hour because every ton of plastic resins is part of the production of a high-value product and impact to supply chain. The calculated damage did not include the loss of life and health of employees, which was incalculably valuable. This was an example of various operations at SCGC.

Collaborating to Overcome the COVID-19 Pandemic Disruptions

"Egg White-Egg Yolk" Measure: Employee Care in the Face of the COVID-19 Pandemic



Business Partners
Screening for entry into the operating area using the Health Pass system and the Bubble & Seal measure.

In the Event of Infection
The waiting center was established to care for high-risk or infected employees promptly, a strategy that contributes to transmission prevention and alleviates the burden on Rayong's public health system.

"Egg White – Egg Yolk" Measure: Maintaining Employee Safety and Business Operations

At the plant, employees on the production line work in shifts, whereas office employees have regular working hours. When the COVID-19 pandemic gripped Thailand in early 2020, SCGC established priority measures to keep production lines running while limiting infection risks and protecting employee health.

Risk management measures classified employees into two categories: **"egg white"** employees who can work from home without visiting the site or office, and **"egg yolk"** employees who are critical to manufacturing operations, such as boardman like Nakorn, whose responsibilities included ensuring that machinery and automation systems operate continuously in the central control room.

SCGC's initial response entailed communicating with employees to avoid high-risk areas and advising on infection prevention practices both within and outside the operation sites. Additionally, the web application **"Employee Connect"** was developed to effectively track employee's health status. This application enabled all employees to submit their health status on a regular basis via the Health Pass system and COVID-19.

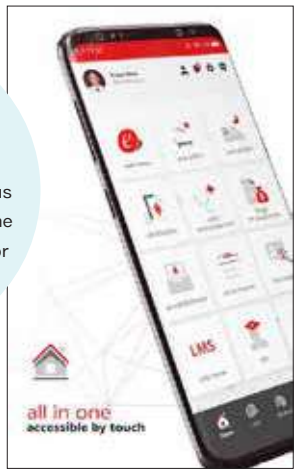
Jirasak recalled brainstorming sessions held at the plant where employees collaborated to establish a range of preventative measures, including **"Bubble & Seal",** which accommodated working areas to maintain social distancing and infectious case management.

"We were attempting to keep infections to a minimum in our plants. There were four shifts, each with seven employees. We planned that if an infection case occurs during that work shift, the entire team must be isolated for 14 days regardless of the test result. We did not take risks, even if the chance was slim."

Prior to implementing measures or policies requiring employees to comply, the plant had to communicate with them until a common understanding was reached. *"Because we wanted it to be collaborative, not coercive, which might result in refusal to cooperate. It was better to reach complete agreement and communication."*

Employees were obliged to submit daily health condition reports using the application no later than 2.00 p.m. Employees would be asked whether they had contacted high-risk individuals or traveled to high-risk areas or provinces. The administrative center's staff would monitor employees who failed to report, particularly employees like Nakorn and his colleagues, who were classified as **"egg yolk"** due to their position as boardman. The plant required that all employees submit 100% complete health reports daily.

The web application "Employee Connect" enable all employees to submit their health status on a regular basis via the Daily Check-in system or Daily Self Declaration.



However, if the situation worsened, egg yolk employees such as Nakorn would have to be relocated to the hotel to avoid contact with others. The shuttle bus service would be specially arranged to assist transportation between the plant and the hotel.

"I had to spend a month in a hotel at the time. There were no tourists; only employees like me were there. I used a video call to stay connected with my family. However, if an emergency occurs, such as my family being ill, I am required to notify the company."

This also had brought Jirasak some distress as a supervisor.

"These employees made significant sacrifices. Some of them had to leave their wives and children at home. I assured them that if they had an issue, even late at night, they should contact us to assist them. We regarded their commitment to comply with the company's policy, although it impacted their family, to be an added bonus in operational performance. I underlined to everyone that their safety and that of their families was critical for the operation to continue."

By 2020, all SCGC plants had safely navigated the pandemic and implemented pandemic management guidelines and preventative and control procedures at all stages of operation, including pre-entry screening and operational area separation. This approach was broadened to include other projects engaging employees and partners. Particularly for the MOC Debottleneck (MOCD) project, which involved tens of thousands of workers, a report had to be prepared to describe SCGC' guidelines and measures to obtain approval from Rayong's Disease Control authorities. Officials applauded the approach, and it was chosen as a model for COVID-19 preventive management for comparable projects. Meanwhile, the MOCD project continued to run normally throughout the COVID-19 crisis.

Responding to the Worsening Pandemic in 2020

In 2021, a series of new COVID-19 pandemic waves resulted in a significant rise in infection cases and deaths compared to 2020. Rayong was regarded to be one of the provinces with a growing number of infected individuals, necessitating the implementation of increasingly stringent measures, such as proactive screening with a daily antigen test kit (ATK) testing to screen employees and business partners prior to their entry into the operation site; self-quarantine for employees and business partners who traveled from provinces within the controlled areas and were required to be tested for infection once the quarantine period ended. They could then return to work on the site if the result was negative.

Nattapon recalled an experience in which he unknowingly visited a high-risk area that was later reported to have had infected cases. As a result, he **"had to implicitly conduct 14-day self-isolation."** Until the result was negative, he was cleared to return to work.

Since the beginning of 2021, SCGC has prepared a vaccination plan to ensure that all employees, their families, and the Company's vendors were vaccinated. This is because if one person is infected, it could spread to others. Until mid-2021, when the government accelerated the vaccination effort, SCG's Head Office in Bang Sue partnered with the government to establish

Measures in Response to the COVID-19 Pandemic

December 2019

- An outbreak observed overseas.

2020

- Cases of infection detected in Thailand.
- Cases of infection detected in Rayong.

2021

- **New waves of infections that last several months.**
- **A severe pandemic in Rayong.**

December 2019

- Closely monitored the situation and devised plans to care for employees both based in Thailand and aboard, and assisted with return trips.

2020

- Defined measures for employee grouping, social distancing, mask use, and area disinfection.
- Bubble & Seal measures.
- Developed a risk assessment screening mechanism for employees prior to entering the area.

2021

- Implemented existing measures in a consistent manner.
- Conducted ATK test once every 14 days.
- Developed the Health Pass screening system.
- Encouraged employees to get vaccinated.
- Established vaccination centers and waiting centers to alleviate societal burdens.

a vaccination center to facilitate immunization for the general public. In Rayong province, SCGC partnered with governmental organization-Social Security Office to set up a vaccination center for insured persons at the RIL Industrial Estate Office.

When the number of infection cases in Rayong began to rise, the public health system's capacity became overwhelmed with insufficient beds to accommodate, field hospitals and community isolation facilities were established. SCGC assisted by providing equipment for setting up field hospitals, paper field hospital beds, and patient supply bags, in addition to previous assistance to the province and communities in the form of PPEs, alcohol, N95 masks, rubber gloves, disinfectants, and supply bags.

Furthermore, to alleviate the burden on government-supported field hospitals, SCGC offered hotel stay as company isolation facility with 32 beds for infected employees, where they were treated until healed and free from infection.

By the end of 2021, all employees at SCGC had received two doses of vaccines. Additionally, the Company established a Health Pass system that employees could utilize to gain access to operational areas. Employees were required to disclose their health condition in the Daily Self Declaration system to demonstrate proof of two doses of vaccines and antigen test kit (ATK) results before entering the area. Employees were also required to remain within their bubble zone, avoiding contact with other bubble zones, a basic control mechanism in the operational area after the peak of the pandemic crisis in 2021.

Lessons Learned from the COVID-19 Pandemic:

Since the start of the COVID-19 pandemic, SCGC distributed **"Guard-up Boxes"** to all employees, which contain protective equipment, including face masks, alcohol gel, vitamin C, and ATK kits.

If one becomes infected, while waiting for treatment or being isolated at home, they would receive a **"Care Box"** containing essential supplies such as paracetamol, Fah Talai Jone (*Andrographis paniculata*), pulse oximeter, fever thermometer, and so on. Additionally, in partnership with Ramathibodi Hospital's Virology Laboratory, the Company provided COVID-19 screening using RT-PCR test for employees and business partners.

Jirasak and his coworkers learned and engaged in how to deal with the pandemic.

"It's all about learning. We had no idea what Egg Yolk, Egg White was before this, but it has become our primary management system. The main issue we had was being apart from our family, and we were trying to treat everyone as though we were members of a large family and that we needed to work together as much as possible."

As a result of its commitment to all lives, SCGC weathered the crisis and was able to deliver products and services to customers and consumers comprehensively and safely, besides providing a number of innovations and products to benefit society as a whole.

COVID-19 Preventive Innovations

SCGC collaborated with all sectors to overcome the crisis. It accelerated creativity within the organization to develop COVID-19 preventive innovations in a timely manner to fulfill the needs of medical agencies. The examples are as follows:

- Negative/Positive Pressure Isolation Chamber
- Patient Isolation Capsule
- Small Patient Isolation Capsule for CT scan
- Small Patient Isolation Capsule for Air Transport
- Negative Pressure Isolation Room
- Aerosol Box
- Dent Guard
- Sharp Disposal Bin for Vaccination Center and Hospital
- VAROGARD, a high-performance antiviral mask for general use. Coated with COVID-19 anti-infection substance, the quality of which was tested by the Faculty of Medicine Siriraj Hospital, Mahidol University.

Global warming, natural disasters, and trash overload are all negative consequences caused by human activities that are currently reversing the threats toward human quality of life. It is projected that the severity of disasters will increase if we do not cease squandering resources and energy and generate vast amounts of waste that pollute the environment. One of the waste materials being targeted is plastics.

Plastics have become an integral part of people's lives due to their excellent durability, elasticity, stiffness, and ease of forming. As a result, they are incorporated into various products and packaging. On the other hand, plastic is a difficult material to biodegrade. If not properly disposed of, post-consumer plastic becomes waste, polluting the environment for hundreds of years.

Globally, there is a growing effort to address climate change and waste management. The government, businesses, and civil society all acknowledge the significance of environmentally friendly production and consumption.

SCGC GREEN POLYMER™ Plastic Innovation for Better Future

SCG Chemicals or SCGC consistently conducts business in accordance with sustainable development and is a leader in the development of plastic resin powered by technology and innovation. It has embraced circular economy principles, which emphasize resource circulation as a means of reducing resource use, energy consumption, and waste generation, by developing innovative plastic resins for the planet's better future under the brand "SCGC GREEN POLYMER™."

Plastic 4Rs Principles

Before it becomes a plastic cup, a plastic bottle, a plastic bucket, or any other plastic goods in customers' hands, plastic has to undergo a multi-step process.

It begins with extracting crude oil or natural gas from the earth, which is then transported to refineries and converted into naphtha for use as feedstock for petrochemical plants, divided into three segments: upstream, intermediate, and downstream. The final product is synthesized in the form of resin or plastic resin.

The plastic processing plant then employs plastic resin as a raw material in the injection blow molding process to produce plastic products and packaging, which are eventually distributed to consumers as finished products.

Throughout the product's life cycle, SCGC has raised questions exploring sustainable approaches to plastic management based on circular economy principles and the 4Rs principles.

Reduce – how can we reduce our reliance on natural resources?

Recyclable – how can we make difficult-to-recycle plastic products and packaging more recyclable?

Recycle – how can plastics be recycled? and

Renewable – how can we use renewable plastic as raw material and make it biodegradable?

These questions will lead to a comprehensive decrease in the amount of plastic in the ecosystem, which is a means to solve plastic waste issues while also helping to reduce the impact of intensifying global warming.

Reduce: Boost Product Performance with SMX™ Technology

Is it possible to decrease the amount of plastic used by making the plastic product thinner while maintaining the same robustness or thickness with increased performance?

With a commitment to seeking a solution, SCGC developed SMX™ technology to produce HDPE that retains a balance of high strength and stiffness, allowing for a reduction in plastic usage throughout the molding process while maintaining the product's desired strength properties. As a result, the product is lighter, resulting in energy savings during transportation and lower shipment costs.

Plastic products created with SMX™ technology can lower greenhouse gas emissions by 10-20% compared to those made with standard plastic resins.

The plastic products that benefit from this technology are divided into those that require lightweight and stiffness properties, such as bottle caps that require ultra-lightweight properties; ultra-thin bottle caps for carbonated beverages that are sturdy and retain gas better, lowering the amount of plastic used by up to 20%.

Products with a high degree of durability, such as industrial-grade plastic packaging bags that can help reduce plastic consumption by 30%.

Products requiring a high degree of robustness, such as Intermediate Bulk Containers (IBCs), which can lower the weight and plastic content by up to 6%.

The plastic resins produced by SMX™ technology are of high grade. When recycled, it can also help to reduce the amount of virgin plastic used in each recycling mixture and increase the number of recycling times. Meanwhile, once recycled, conventional plastic's quality degrades faster.

Recyclable: Mono-Material Plastic Packaging

Is it possible to make food packaging bags, snack bags, or cleaning liquid bags that are hard to recycle, recyclable?

The reason for this is that this difficult-to-recycle packaging is multi-material in nature with different properties, such as an outer layer that must be aesthetic for printing brands and product names, a mid-layer that must function as a barrier to preserve food quality, such as moisture protection, and an inner layer that must serve to support food safety.

These packaging materials are in high demand by consumers and ultimately wind up in a landfill, polluting the environment. This is the industry's primary issue that must be addressed.

SCGC GREEN POLYMER™'s solution is to transition away from multi-layer material packaging and toward mono-material packaging by developing PP or PE for packaging with the right qualities for each layer of usage. PE/PE for the outer layer can be used for aesthetic printing, while PP/PE for the mid-layer can be used to control the diffusion of molecules in accordance with industry standards, resulting in a final product that can be recycled efficiently because this is a machine-processable type of plastic.

Recycle: Transform Household Waste into High-Quality PCR

Is it possible to recycle household waste into PCR that contains standard properties? Significantly, this can help reduce plastic waste while also supporting the manufacturer in reducing resource usage.

The process starts by sorting household plastics and thoroughly cleaning them, excluding multi-material packaging. The sorted plastic will then undergo the mechanical recycling process, where it will be compacted into small pieces and then melted and converted into high-quality post-consumer recycled resin (PCR). The product owner can manufacture PCR from recycled materials or other sources to create a new product, taking full responsibility for the product's life cycle. In addition, they can be accredited by the Global Recycled Standard (GPS) for feedstock sourcing in the manufacture of PCR.

SCGC developed PCR as another critical strategy for SCGC GREEN POLYMER™ in collaboration with Teamplas, Thailand's largest plastic recycler for over 30 years, Suez, Europe's largest recycler, and Sirplaste, Portugal's largest plastic recycler.

SCGC has developed advanced recycling/chemical recycling for difficult-to-recycle plastics like multi-material packaging, which can turn used plastic into recycled feedstock through a petrochemical plant process into plastic resin with the same properties as virgin ones. This recycled plastic resin's manufacturing process and properties are certified by ISCC PLUS, the International Sustainability and Carbon Certification (ISCC), making it the first in Thailand to fulfill these criteria.

Renewable: Plastics Derived from an Infinite Resource

Is it possible to manufacture plastic from other natural resources rather than crude oil and make it biodegradable to the point that it won't be a waste in hundreds of years?

Crude oil or petroleum is refined and processed into various forms of polymers, resulting in greenhouse gas emissions, inevitably causing global warming and climate change, and eventually depleting resources. If the future is to be sustainable, the search for other natural resources to replace petroleum is unavoidable. And the answer closest to us is plants, where innovation in converting plants into plastics can give numerous benefits. One advantage is that plants can be replanted, making them an infinite resource. Two, it can help reduce petroleum consumption, hence lowering greenhouse gas emissions; and three, it can help absorb or store greenhouse gases. Overall, bio-based plastic will result in negative greenhouse gas emissions, meaning that it will retain more greenhouse gases than it emits.

Bioplastics under SCGC GREEN POLYMER™ are divided into two categories.

The first type is Bio Compostable, in which SCGC develops a proprietary formula that combines plant and petrochemical raw materials and molds them into films used in household and industrial products. The product has been recognized as biodegradable by the world's leading certification organization, DIN CERTCO, in Germany.

Bio-based PE is another type of bioplastic that SCGC is researching and developing in collaboration with Barskem, a global leader in bioplastics from Brazil.

A Better Future

Plastics may be viewed as a “villain” in the public eye, yet we can't deny that they have numerous advantages. And it's challenging to find a substitute for plastic in terms of qualities.

SCGC believes that innovation and a commitment to a better future will contribute to developing a new approach to plastic that is more environmentally friendly than hazardous. Is it possible that one day, all plastics will contribute to reducing rather than increasing greenhouse gas emissions where plastic waste is no longer present?

SCGC GREEN POLYMER™ is now one of the future plastics solutions available.

Examples: Innovative Plastics from SCGC GREEN POLYMER™

SMX™ Technology

SX002JA, SX002J
Lightweight Cap and Closure for Carbonated Soft Drinks

S111F
High Impact Film

SMX551BU
High Impact Strength IBC

PCR

PCRH01BN, PCRH02BW
Lube Oil and Dish Soap Containers

Bio Compostable

BIOC01FN
Bio Compostable Trash Bags

i2P Center The Solution for Our Planet

Plastics, regardless of their type, are all the same in the eyes of consumers. Manufacturers of plastic resins capable of molding plastic, and makers of plastic goods, on the other hand, understand that plastics are more than just plastics. There are numerous types of plastics with varying qualities designed to satisfy a range of applications.

Today's plastic industry is confronted with growing challenges in an ever-changing world: plastic waste from single-use disposable plastics and climate change issues caused by greenhouse gas emissions from increased resource and energy use. Selecting appropriate plastic resins, developing environmentally friendly plastic products, reducing resource and energy use, and recycling have become key challenges for products and industries.

SCG Chemicals or SCGC, as a manufacturer of high-quality plastic resins, can assist customers in overcoming these challenges through **the i2P Center (Ideas to Product Center)** located in Rayong's RIL Industrial Estate.

It's a plastic resin innovation creation platform that focuses on the circular economy principles and works closely with customers to achieve the same goals: sustainable business operations and environmental and social stewardship.

Inspiring "Plastic" Ideas

There are numerous questions that product owners in every industry want answered.

How to use less plastic, how to reduce resource consumption while maintaining product strength, how to make the product lighter while maintaining chemical resistance, and how to recycle used plastic into a new product with aesthetic appeal.

The Innovation Center is the first section of the i2P Center, exhibiting customers' success stories with ideas inspired by SCGC. There are three distinct categories of innovations.

Climate Emergency. Innovations developed to address climate change based on the circular economy principles with a focus on plastic resin development with 4R Principles: **Reduce, Recyclable, Recycle,** and **Renewable**. All of this was made possible by a diverse variety of SCGC innovations, including SMX Technology™, high quality post-consumer recycled resin (PCR), and success story products such as Shinkolite™ Roof Acrylic Sheet, floating solar panels, lightweight plastic parts for electric vehicles, etc.

Urbanization & Digitization. Innovations that assist growth and the transition to urbanization and digitization. They are innovations that contribute to the stability of infrastructure expansion and the sustainable use of public utilities, such as fiberglass cable covers, high-impact resistant pipes, etc.

Health & Wellness. Innovations aimed at raising the quality of life, health and safety, such as Freeze-to-Heat food packaging boxes, lead-free PVC pipes, Patient Isolation Capsule for COVID-19 pandemic, COVID-19 prevention equipment for dental work, etc. The success stories displayed at the Innovation Center may inspire customers who lack ideas before their visit to enhance the eco-friendliness of their products. However, the following section will provide direction on how to proceed.

Co-Creation Area

Next to the Innovation Center is Co-Creation Area, which serves as a platform for idea generation, questioning, examining product pain points, and seeking ways to improve products through workshop activities guided by the i2P teams.

"Previously, when we developed a new plastic resin compound, we would exclaim, 'Eureka!' Then we handed it over to the sales team in charge of selling the plastic resin on the market. This might not, however, meet all the customer's requirements. We then change our way of working. We now have the i2P Center, where customers may come in and share their challenges and requirements. We can then work together to find the best solution."

Pornchai Saengrungsri, Technology Strategy and Portfolio Leader with over 24 years of experience in product and innovation development, shared his customer experience. While some customers have a clear sense of what they want, others are still trying to figure it out. Some may be at a loss about where to begin. As a result, the team helps collaborate to provide support at their best.

The i2P Center employs a "Design Thinking" workflow process that integrates three core teams:
Material: The team in charge of producing and developing polymers.
Processing: The team in charge of prototyping.
Design: The team in charge of product design and development for industrial-scale production and practical applications.

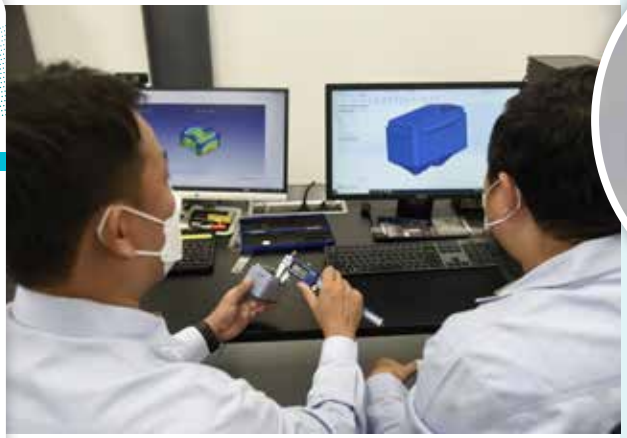
If the i2P Center were a kitchen, the material team would be a supplier of high-quality and useful ingredients, the processing team would be a chef specializing in seasoning, and the design team would be a food designer responsible for flavorful delectable food presentation.

The three teams collaborate to offer the best dish possible using a market-driven strategy, exploring in-depth customer needs and truly catering to the market. All of which are conducted without sacrificing customer safety or environmental impact in compliance with the product and service stewardship guidelines.

This is the most time-consuming step since it necessitates the development of relationships with consumers to gain their trust that the i2P Center is on the same team as them, striving to find a solution together. A good design necessitates a broad range of considerations that address production, application quality, and recyclability. Thus, serving the needs of **"customers"** entails not only satisfying the needs of product owners but also meeting the needs of end customers.

One of the i2P team's tasks was converting the tractor's steel components to plastic. Prior to designing, the team had to conduct a field study to ascertain the farmers' and tractor users' needs. There was also the question of preconceptions, such as steel being more sturdy than plastic. The i2P team was required to create a demonstration video of the plastics being pounded to illustrate the strength. It was consistent with the Design Thinking concept of **"Show, Don't Tell."**

However, the most critical aspect of establishing a partnership with customers is **“trust”** and **“confidence,”** which is demonstrated throughout the process of their first visit to the center, brainstorming sessions to identify problems, exploring ideas, designing products, to prototype development. The next section of the i2P Center is equally vital as the others because it is the kitchen that prepares the food from designed recipes prior to becoming the proven and tangible product that can confidently be manufactured.



Increasing Chances of Success Through Rapid Development and Testing

The Application Development Center is the heart of the i2P Center since it is where plastic resins are formed and tested into “product prototypes” with functional characteristics that match the design. Thanks to 3D printing technology and world-class standard machines, the product development process is doubled in speed.

“SCGC has invested in the technology and machinery essential to undertake product tests in the manufacturing setting similar to that of customers. If the test here passes 99% of the time, the real test on the customer's system will also do.”

Boonmee Jirapanakorn, Head of Application Development Center with over 30 years of experience, noted that developing new products used to take between one and a half to three years. But now, it is merely six months to one year. In the past, we used to have to wait months for the customer's machine to become available before we could execute the forming test. And the team had to make numerous modifications and retests until we found the optimal formula for the product. Then, it would be too late or would have been a waste of marketing opportunities.

However, thanks to the i2P Center's high-quality machinery, we can swiftly build prototype products, alter them, and improve

Partners' Thoughts on the i2P Center

Jirapot Tanapatchaiyapong

Executive Vice President,
Research and Development Center, Betagro Group

“Betagro Is a leading corporation in the food business with a strong emphasis on quality and sustainability. We utilize a significant amount of plastic resins in the manufacture of packaging, which is a single-use disposable material with a high manufacturing cost. As a result, we partnered with SCGC, our main supplier, to cut down on material usage and seek ways to make the most of plastic. The i2P Center assisted in developing a new type of polymer that reduces the thickness of plastic packaging while increasing toughness and durability. It also helps find a packaging molding factory that can meet our needs, which we considered truly delivering a total solution service.

In addition to cost reduction, the crucial point is that business operations these days, particularly those that export to the global market, are becoming more concerned with sustainability. Businesses must integrate circular economy and environmental stewardship into the core of their business operations to ensure long-term sustainability and competitiveness.

SCGC's i2P Center is a key partner in generating sustainability, as well as a manufacturer with expertise and innovations in materials that provide a competitive edge on prices, total solutions, and life-cycle care for products. The important thing is we have an understanding partnership and teamwork that shares the same goals. As a result, we have great confidence in SCGC.”

Examples of Collaboration

- **SMX Technology™ Chicken Packaging Bags,** which minimize plastic consumption by over 400 tons per year and greenhouse gas emissions by over 800 tons of carbon dioxide per year.

- **Recyclable Mono Material Packaging Bags,** which contribute to a 40% reduction in greenhouse gas emissions as compared to conventional packaging.

Saravoot Yoovidhya
Chief Executive Officer and Chairman of the Sustainable Development Committee of TCP Group

“TCP has had a policy of conducting business in conjunction with the social contribution for 65 years since the company's establishment. To date, we have made environmental and social responsibility critical components of our sustainable business operations by adhering to the three pillars of sustainable development: integrity or sustainable partnership and corporate governance, product and service quality, employees' quality of life, and harmonious and sustainable coexistence with the environment and society. We are pleased to collaborate with SCGC, a plastics industry leader with extensive technological expertise and wide networks in developing environmentally friendly packaging.

“Collaborating with the i2P Center provided us with a wealth of ideas and a fun collaborative experience. The team is strong and open-minded, utilizing their knowledge of precursor materials and product understanding to meet the needs and create realistic outcomes that are both beneficial to society and have business value.”

The TCP's imminent goal is to achieve carbon neutrality to reach zero carbon reduction in the future, and all packaging must be 100% recyclable. As a result, we must work to improve consumer awareness of sustainability and encourage them to support environmentally friendly products. We would like to partner with the i2P Center on several projects to ensure the sustainability of our business, including packaging solutions, waste upcycling, social support, and water management.”

Examples of Collaboration

Innovative 100% recyclable packaging and the recycling of post-use plastic as part of CSR activities.

them to produce high-quality plastic resin formulas that suit customer needs. Additionally, it speeds up the product development process, resulting in a faster product launch.

The i2P Center exhibits SCGC' capability as not only a specialist in plastic resin formulation development but also a true in-depth expert in plastic injection molding, another science that applies complexity and significance to attributes on every inch of the product, including strength, durability, stiffness, and flexibility.

Furthermore, the i2P team provides advice on applying the plastic resins suited for the customer machines. This ensures that the product meets the highest qualifying product standards, even though the product's primary strength is in the machines that significantly reduce process duration. The i2P team members collectively agree that

“understanding consumers' real problems” is key to the i2P Center's growth.

Sustainable Value Chain

Currently, the i2P Center collaborates with customers and networks, including government agencies, research institutes, and more than 50 experts, to develop over 80 innovation projects per year, with an average of ten products launched each year. 40% of products meet the SCG Green Choice criteria, which includes three qualities: 1) energy conservation and reduction of global warming, 2) natural resource conservation and lifespan extension, and 3) promotion of well-being. The approach is consistent with the organization's proactive goal, which is to accelerate the transition to a circular economy business model and to boost the growth of high value added products (HVA).

The i2P Center is a one-stop service destination that combines SCGC' experience with knowledge of plastic resins. It seeks to bring together all stakeholders in the product value chain, comprising manufacturers, product owners, and consumers, to form a partnership with the common goal of developing “valued and environmentally friendly products.” This is to address climate change and the problem of plastic waste, which impacts the environment and society, to promote sustainable industrial development and the preservation of our planet.

Materiality and Sustainability Issues

SCG Chemicals or SCGC Sustainable Development Committee identifies key sustainability issues for the company (Enterprise Materiality) in 2021 by reviewing sustainability issues raised in 2017 as well as looking at key changes of global and regional trends. Opinion from key stakeholders, sustainable development issues in the same industry, risks, and opportunities that may arise throughout the value chain based on the Global Reporting Initiatives (GRI) Framework, GRI Standards edition.

Assessment and Prioritization Process Sustainable Development Issues

1 Collect the issues.

- Collected the issues related to sustainable development from three dimensions: economy, society, and the environment.
- Surveyed opinions from internal and external stakeholders on sustainable development issues.

2 Prioritize the importance to SCG Chemicals.

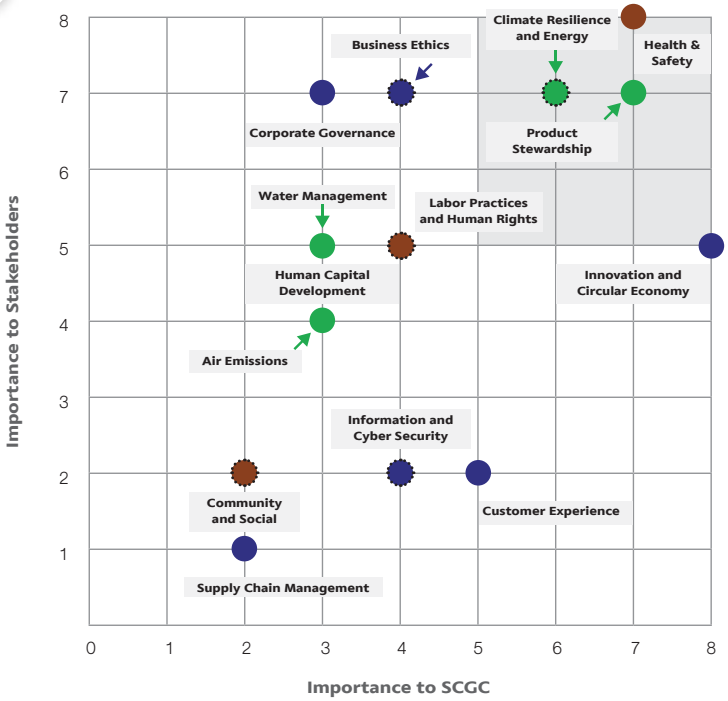
- Conducted workshops to assess key issues and their impacts.
- Prioritized issues by evaluating scores, weights, and frequencies.

3 Prioritize the importance to stakeholders.

- Assessed key issues and impacts to stakeholders.
- Prioritized from the weighting and evaluating by Rating Agency such as DJSI.

4 Develop SCGC's materiality metrics.

- Prioritized sustainability issues with respect to importance to SCGC and stakeholders.
- Reviewed and validated by senior executives.



Environmental
Social
Governance

Enterprise Materiality

- Health & Safety
- Climate Resilience and Energy
- Product Stewardship
- Innovation and Circular Economy

Enterprise Materiality

Energy and Change

Strive to lower greenhouse gas emissions directly and indirectly by raising the proportion of clean energy use and efficiency, developing low-carbon products, and planting trees to absorb greenhouse gas emissions.

Risk

- Disasters, particularly floods and droughts, have a direct impact on businesses.
- Domestic regulations and international tax barriers such as European Green Deal.
- Budgets for technology development have been gradually increased.
- Trust in business is challenged if it fails to implement the promised efforts to minimize greenhouse gas emissions.

Opportunity

- Enter the green market to gain a competitive edge in low-carbon products.
- Enhance the public perception of socially responsible business.
- Elevate the green supply chain and provide customers with more low-carbon product options.

Innovation and Circular Economy

Promote circular economy-driven businesses encompassing the entire product life cycle, developed innovations and solutions; foster collaboration; and explore new technology to create new businesses and achieve sustainable growth.

Risk

- Disruptions in the global plastics industries due to innovations and new technologies.
- Challenging recycling process amid COVID-19 pandemic conditions.
- Shortage of quality plastic waste.
- The mandate for extended producer responsibility holds businesses accountable to consumers by requiring them to provide packaging care throughout the product life cycle.

Opportunity

- Encourage cross-sector collaboration to propel the circular economy and promote the consumption of low-carbon products.
- Encourage waste management in the COVID-19 circumstance, when customers are more inclined to use plastic products for health and safety purposes.

Health and Safety

Ensure the health and safety of employees, suppliers, and stakeholders by setting a target of zero work-related injuries and illnesses for businesses both in Thailand and aboard, as well as projects.

Risk

- Risks of work-related accidents and risk assessment that aren't addressed.
- Accidental risks, resulting in chemical or combustible substance leakage.
- Health risks associated with work, hazardous chemicals, behaviors that violate principles, ergonomic standards, and stress.
- Loss of business credibility in the event of a work accident.

Opportunity

- Develop health and safety operational standards and serve as a model for hygiene and safety.
- Develop products and solutions that address health, safety, and environmental needs.

Product Stewardship

Develop products, services, and solutions that are environmentally friendly throughout their life cycle and differentiate themselves in the market by engaging with customers to suit their needs.

Risk

- Increased market competition in which customers have a more comprehensive range of safer and more environmentally friendly product options.
- Product liability concerns that result in unintended consequences and environmental impact.
- Loss of business credibility in the event of product, service, or solution-related defects.

Opportunity

- Improve employee and technological capabilities to drive innovation that meets customer needs and ensures product and service stewardship.
- Promote products that meet certified environmental standards and differentiate them to gain a competitive edge in the global market.

Sustainability Issues	Climate Resilience and Energy	Innovation and Circular Economy	Health & Safety	Product Stewardship
Corporate Governance	•	•	•	•
Business Ethics	•	•	•	•
Sustainable Value Towards Supplier	•	•	•	•
Customer Experience	•	•	•	•
Information and Cyber Security				•
Water Management	•	•		
Air Emissions	•			
Human Rights	•	•	•	•
Employee Caring and Development			•	
Talent Attraction			•	
Community and Social Development	•	•	•	

Climate Resilience

Increase the Proportion of Clean Energy and Energy Usage Efficiency

Climate change is a global issue affecting people throughout the world. SCG Chemicals or SCGC is dedicated to reducing greenhouse gas emissions both directly and indirectly by increasing the proportion of clean energy consumption and energy usage efficiency, as well as developing low-carbon-footprint products to establish a low-carbon economy from manufacturer to customer to consumer. Furthermore, it intends to build partnerships to keep a global temperature rise under 1.5 degrees Celsius in accordance with the Paris Agreement, as well as to support the target of Carbon neutrality by 2050.

2030 Target
Greenhouse gas emissions reduction by
20%
from the base year of 2021 (domestic and international operations.)

To achieve "Carbon Neutrality" **by 2050**

- Process and equipment improvement or modification to boost energy efficiency.
- Utilization of clean energy in place of fossil fuels.
- Establishment of research and development of technologies to achieve carbon neutrality.

Action Strategies

1. **Direct and indirect greenhouse gas emission reductions in operational control (Scope 1+2).**
2. **Other indirect greenhouse gas emission reduction preparation (Scope 3).**
   - Establishment of a data collection system to assess other associated indirect greenhouse gas emissions to develop greenhouse gas management throughout the value chain.
   - Development of products that minimize greenhouse gas emissions across the value chain, from raw material sourcing to waste management, and applied circular economy principles to ensure resource efficiency, lower energy consumption, waste reduction, and increased recycling.
3. **Development of greenhouse gas storage.**
   - Reforestation and environmental restoration.
   - Development of innovation for greenhouse gas storage.

Increase Energy Efficiency by Using Cutting-edge Technology

Improve the process by choosing high-efficiency equipment at the early designing stages and continuous improvement process and equipment to increase energy efficiency, such as installing a system to extract excess gas that must be incinerated to be used as another plant's feedstock (flare gas recovery) reduces emissions by 3,800 tons of CO_2 equivalent. Moreover, the excess gas has been utilized to improve thermal efficiency by the Turbine Generator, reducing emissions of 12,000 tons of CO_2 equivalent.

Enhance Energy Usage Efficiency with Artificial Intelligence (AI) and Automation

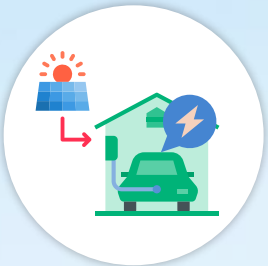
SCGC has always sought to enhance process and equipment efficiency to reduce energy consumption. It has recently introduced new technologies such as AI, Machine Learning, and Data Analytics automation to streamline operations. The approach resulted in a significant reduction in energy consumption.

- **Rayong Olefins Company Limited** digitized its highly complex measurement and steam control system, transitioning from manual to digital automation. It also improved the operations of the heat reactive furnace, the plant's most energy-consuming device, with an automation system and machine learning. The approach minimizes annual energy usage and greenhouse gas emissions by a total of 8,030 tons of CO_2 equivalent.
- **Map Ta Phut Olefins Company Limited** has been using AI technology to manage energy in its manufacturing units. The result shows energy saving by over 19,430 gigajoules per year and reduction of greenhouse gas emissions by 806 tons of CO_2 equivalent per year, and at the same time making production control easier and more efficient.

Solar Energy System Solutions

SCGC has developed and deployed solar energy systems to enhance the usage proportion of clean energy and minimize greenhouse gas emissions. In addition, SCGC has operated solar energy solutions within the SCG group, with external partners and customers to continuously ensure the sustainability of solar energy as follows:

- **Floating Solar Solutions** Thailand's first floating solar farm offers end-to-end solutions, from design to produce the specific floating pontoon for solar system platform. From 2018 to 2021, it had executed 43 projects for SCG business units and external partners. The combined generation capacity exceeded 50 megawatts, lowering greenhouse gas emissions by over 35,000 tons of CO_2 equivalent per year.
- **Solar Rooftop and Solar Farm** In 2019, SCGC had installed the solar power generation project on the roof of the SCG Chemicals' office buildings and along the product pipeline in Map Ta Phut Industrial Estate. The maximum power generation capacity of 4.8 megawatts helped cut greenhouse gas emissions by 3,300 tons of CO_2 equivalent per year.



- **The Integration Project of Electric Vehicle and Solar Energy Solutions** RIL 1996 Company Limited's diesel vehicles have been replaced by electric vehicles, with integration to solar power. The project contributed to reducing greenhouse gas emissions of more than 7 tons of CO_2 equivalent per vehicle per year.

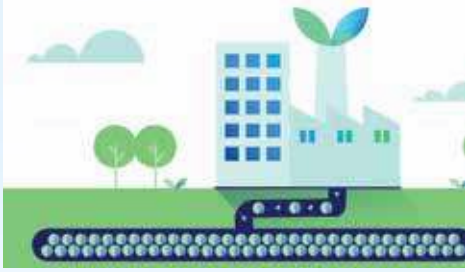
Carbon Footprint for Organization (CFO)

In 2021, four companies under SCGC received certifications of Carbon Footprint for Organization from the Thailand Greenhouse Gas Management Organization (Public Organization). The achievement reflected SCG Chemicals' dedication to greenhouse gas management to effectively minimize greenhouse gas emissions.

Low Carbon Innovation

By looking into new technologies that support low-carbon production

- Using advanced clean fuels with no carbon emissions.
- Carbon capture and storage to reduce atmospheric carbon deposits. Reuse of Carbon.



Circular Economy

Pass on Values, Develop Products and Build Networks for Sustainability

SCG Chemicals or SCGC applies circular economy principles to business throughout the product lifecycle. Its method encompasses an end-to-end process that includes the design of reducing plastic resin consumption while maintaining plastic strength, making the most of the value of plastics (service life extension), waste sorting at source upon expiry of use, and recycling for value addition. Additionally, this involved developing plastic recycling technology that utilized an Advanced Recycling Technology to transform Post-Consumer Plastics into Renewable Feedstock for Petrochemical Plants. SCGC is also eager to collaborate with the circular economy network from all sectors to address concerns such as plastic waste, resource shortages, and global climate change.

In 2021,
SCGC achieved
The Prime Minister's Industry Award
in the category of Circular Economy.

Strategy

1. **Raise awareness of the value of natural resources** to shift their mindset and behaviors toward preserving and maintaining the value of plastics.
2. **Create and develop solutions to promote the circular economy business** by maximizing the value and efficiency of products through innovation.
3. **Collaborate with the circular economy network** to strengthen the network and explore technologies to establish new businesses and sustainable growth across the value chain.

Examples of Activities Following Strategies

- Promoted Zero-Waste Community project and developed the application **"KoomKah"** to manage community waste banks, with the goal of encouraging the collection and sorting of community waste, which will then be processed and repurposed.
- Promoted the implementation and expansion of circular economy models, such as the circular economy model in schools, marketplaces, and tourism. The implementation has been adopted in 42 provinces across Thailand

- Developed SCGC GREEN POLYMER™ products encompassing four major areas:
  - Reduce
  - Recyclable
  - Recycle
  - Renewable
- Developed the **"Ready Plastic"** trading platform for a wide range of plastic resins, including recycled plastic resins.

- Become a founding member and supporter of the Alliance to End Plastic Waste (AEPW), a non-profit organization comprised of more than 45 global plastic industry businesses.
- Become a member of the Ellen MacArthur Foundation, a non-profit organization founded in the United Kingdom to promote the circular economy on a global scale. SCGC is Thailand's first and only member.

Target

By 2025,

the sales of volume of SCGC GREEN POLYMER™ :
200,000 tons per year

In 2021:
20,100 tons

By 2025,

The amount of recirculated and recycled plastic:
50,000 tons per year

In 2021:
517 tons

In 2021,

a total of **18** circular economy-based products received SCG Green Choice, reducing greenhouse gas emissions by

78,000
tons of carbon dioxide equivalent.

Key Actions in 2021

- **Expansion and Growth of Waste-free Community**

Zero-Waste Community project in Map Ta Phut Municipality in Rayong encompassing the philosophy of home, temple, and school for proper waste management at source. The concept connects with the **"community waste bank"** powered by the **"KoomKah"** application to help provide integrated waste management, enhancing direct waste sales opportunities to recyclers and promoting resource circularity to new raw materials. By 2021, the collaboration will have expanded to 64 communities, two fisherman groups, nine temples, one hotel, and 11 schools. As a result, 13 community waste banks were established with over 3,513 KoomKah account members. Since the project's inception, 166 tons of recycled waste have been collected, with a total estimated value of 431,921 baht. The total amount of recycled waste was comparable to reducing 125 tons of CO_2 emissions.

- **"World-saving Milk Pouches": Changing the Mindset of New Generation**

A milk bag's 10-minute lifespan can be extended to a chair that can last for ten years. The **"Upcycling Milk Pouches"** project encouraged students to bring discarded milk bags to the recycling process to create recycled plastic goods such as chairs and plant pots, where they assisted in the collection, cutting, washing, and drying of milk bags. The Primary Educational Service Area Office served as a collection point for discarded milk bags from schools, as well as a data recording and management using the KoomKah application. SCGC would then connect the network and develop a management system for converting milk bags into plastic resin as recycled plastic goods. Each school would receive 5 points for every kilogram of milk bags collected for future recycled goods redemption. For example, one chair is worth 2,000 points, while a table set is worth 3,800 points. The project enrolled 1,300 schools in the central and eastern areas in 2021. By 2022, the project's larger implementation will be underway in other regions.

- **"Plastic Sorting for the Better" (Yak Dee Mee Tae Dai): Turn Post-Consumer Plastic into Products**

A collaborative project between SCGC and Unilever Group promotes the establishment of a waste bank in Mueang Mai's Bang Bua Thong Municipality. The project's goal was to collect and sort post-consumer HDPE plastic packaging, including translucent and opaque HDPE packaging bottles and white HDPE packaging bottles such as milk bottles or washing liquid bottles, to manufacture high-quality post-consumer recycled resin (PCR). These recyclable plastics will be utilized to make HDPE packaging bottles for Unilever, such as gallon bottles, fabric detergent bottles, and shampoo and conditioner bottles. Meanwhile, multilayer packaging, such as fabric softener bags or snack bags, will be recovered and used as feedstock in petrochemical plants. Members of the waste bank can redeem one Unilever product for every kilogram of post-consumer plastic materials. In 2021, a total of 3,534 kilograms of used plastic were collected, and broader implementation in other communities is underway.

- **Recycled Melamine Innovation**

Created new businesses by developing innovative recycled melamine. SCGC partnered with Srithai Superware Public Company Limited to develop the "Basinity" product line for melamine wash-basin production. SCGC collaborated with Topthai Products Company Limited to develop the **"Plant Me"** product line, which produces melamine plant pots with 10-40% PCR and PIR (depending on the texture). All collaborations were intended to meet the demands of the expanding home decoration market.

Health and Safety

Moving Towards Injury and Illness Free Operation

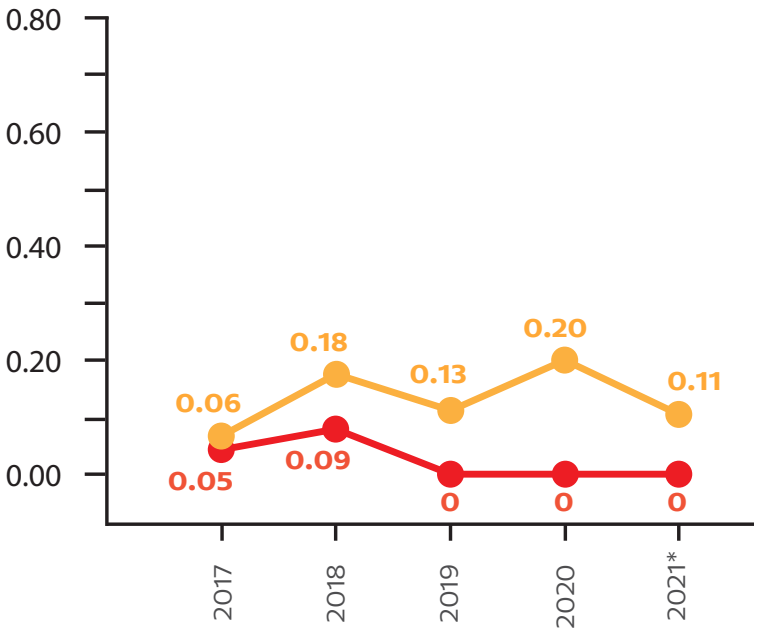
SCG Chemicals or SCGC regards employees and contractors as the most valuable assets. Thus, it implemented Process Safety Management (PSM) in accordance with the guidelines established by DuPont, a leading company in safety excellence, with the goal of achieving injury and illness free operations for businesses both at domestic and abroad. SCGC also set operational control safety standards, workplace healthcare, and oversight of the safety of raw materials and product transportation through fostering a work safety culture through various activities. As a result, SCGC has passed the audit by certified external party from IEAT against Process Safety Management Standard (IEAT PSM) and achieved no lost time injury with zero fatality of the employees as well as zero process safety accidents.

Process Safety Management Timeline

2009	2013	2018	2019	2021
Start project "Dupont Safety Culture Program"	Introduce Process Safety Management Program (PSM)	Fully implement of PSM system	Expand coverage of PSM system to Vietnam Plants	Start using of Autonomous Risk Management

Total Recordable Work-Related Injury

Cases/1,000,000 Hours Worked



TRIR
Total Recordable Work-Related Injury Rate

LTIFR
Lost Time Injury Frequency Rate

* Year 2021 start incorporate performance from abroad operation.

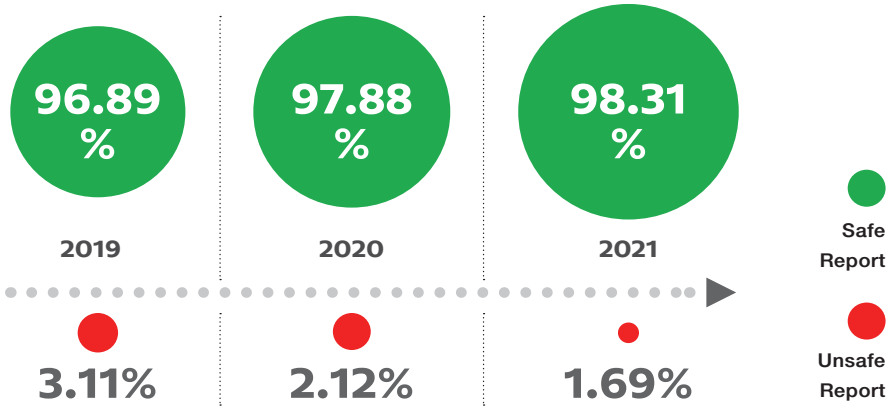
Key Actions in 2021

- **Assessing Risks and Determining Measures to Mitigate Impacts of Serious Accidents in the Plant**

  Conducted an explosion simulation modeling (Facility Siting/Quantitative Risk Assessment) to evaluate the impact on employees, equipment, and accommodated buildings. The results from the assessment were used to develop mitigation measures at one operation site, consisting of three plants. Key measures included worker relocation to safe places, installation of anti-shatter glass film in the building to lessen the risk of glass fragmentation and strengthening of the building structure. The risk and impact assessments are being conducted for all the SCGC's subsidiaries.

- **Establishing a Safety Culture Through Safety Observation Tour**

  Encouraged employee and contractors participation in workplace safety through the Safety Observation Tour (SOT), a program that focused on preventing risk activities and hazardous circumstances through dialogues and guidance, resulting in a commitment to work safely at all times. As a result, safe activities and conditions have steadily increased, while unsafe reports have declined.



- **Monitoring the Driver's Behaviors to Ensure Transportation Safety**

SCGC has established the Distribution Safety Standard and Road Safety Standard, which strictly monitor vehicle inspections, drivers' readiness, routes, and driving behaviors. Increased surveillance and control measures were implemented for parking on the shoulder, insufficient rest before driving, and violations of the Life Saving Rules and driving policy. As a result, accident statistics in 2021 were on the decline, reports of risky behavior by transport drivers decreased by 99.91%, and by company car drivers decreased by 95% compared to 2019.

Results of transport driver's risky behaviors decreased **99.91%**

Results of company car drivers risky behavior decreased **95%**

Health Management

SCGC committed to proactively caring for and protecting workers from work-related Illnesses and diseases. Thereby, SCGC has established health management standards, focusing on industrial hygiene monitoring and occupational health Management, and covering health risk assessment and control, health Surveillance, and health promotion programs. Besides that, SCGC also conducted health checkup result investigation to determine effectively preventive actions based on health risk hazards.

If the hazard exposure level reaching to 50% of the legally required standard or the international standards specified by American Conference of Governmental Industrial Hygienists (ACGIH) or National Institute for Occupational Safety and Health (NIOSH), the Health Committee will implement a proactive incident finding program in conjunction with the occupational medicine physicians to develop preventative actions, monitors, and improvement measures, as well as solutions, to entirely eliminate problematic conditions. As a result, SCGC has insisted and verified as observed zero work-related illnesses and diseases.

Product Stewardship

Promoting Eco-labels and Standards and Global Competition

Strategy	Management
1. Establish a product stewardship system to ensure that products meet international safety and environmental standards.	• Established a committee for product stewardship to ensure product safety and environmental friendliness to formulate policies and practice guidelines for all SCGC's subsidiaries. • Established a working group for product stewardship to ensure safety and environmental friendliness at Thai Polyethylene Company Limited in 2021 with plans to expand such implementation to other subsidiaries the following year. • Established a product stewardship system to ensure product safety and environmental stewardship and incorporated the system into the process of developing new products and innovations.
2. Evaluate the environmental impact and safety of products and services throughout their life cycles.	• Developed the competency to assess the risks associated with products' safety and environmental impacts throughout their life cycles. • Managed risks in products throughout their life cycles, encompassing product hazard analysis, risk assessment, and the establishment of measures to prevent, correct, and control.
3. Develop environmentally friendly products and services and maintain a competitive edge in business.	• Promoted the process for requesting eco-labels for environmentally friendly products and services, SCG Green Choice (developed from SCG eco Value), to provide environmentally friendly alternatives of products and services. • Developed SCGC GREEN POLYMER™ products, a line of environmentally friendly plastic resin products based on circular economy principles.
4. Promote labeling and certification of products and services to minimize greenhouse gas emissions.	• Promoted the process of requesting carbon footprint labeling for products and organizations from the Thailand Greenhouse Gas Management Organization (Public Organization). The objective is to increase awareness of the greenhouse gas emission concerns associated with plastic products throughout the supply chain, to assist consumer product decisions, and to increase global market competitiveness. • Developed the capability to calculate the product's greenhouse gas emissions throughout product life cycles.

Environmental, health, and safety issues have increased consumer and manufacturer interest in safer, more environmentally friendly products. SCGC has been committed to plastic resin products' safety and environmental friendliness. SCGC has established measures to care for products throughout their life cycles according to international standards and has incorporated cutting-edge technologies to generate new business opportunities by innovating new plastic resin products that are high in quality, safe, and environmentally friendly. The goal is to increase the quality of life for people in society while also being socially responsible.

Key Actions in 2021

- Established product stewardship guidelines and assessment forms to ensure product safety and environmental friendliness in accordance with the International Council of Chemical Associations (ICCA), encompassing an end-to-end process spanning design, production control, marketing, transportation, movement of goods, product usage, recycling, and end-of-life disposal.
- Reduced and eliminated the use of hazardous chemicals to the health and environment during the product manufacturing process, in compliance with a list of chemicals regulated by the European Chemicals Agency (ECHA).
- Reviewed and updated the guidelines for usage instruction, transportation, product handling, and products to ensure safety, occupational health, and environmental stewardship in accordance with the Globally Harmonized System (GHS).

- Undertook activities to improve the quality of products to ensure their safety and environmental friendliness, including the following:
  - Provided training on risk assessment in the areas of product safety and environmental impact.
  - Identified the product specification that covers quality, safety, occupational health, and environment.
  - Reviewed and updated product safety data sheet to ensure customer safety and environmental stewardship.

- SCGC's products gained SCG Green Choice labels from 14 to 30 product categories, encompassing upstream, intermediate, and downstream petrochemical products, including products from new businesses such as energy-saving coating materials for industrial furnaces, and pontoons for total solution of the solar floating farm, etc.
- Examples of SCGC GREEN POLYMER™ products that have received SCG Green Choice, such as High-density polyethylene resins, S199F for general packaging films, can reduce the use of plastic pellets by up to 50%, SMX551BU to produce IBC tanks, reducing the use of plastic pellets by at least 6%, S111F provides impact resistance for industrial bag packaging, reducing plastic pellet consumption by at least 20%. All grades can maintain the same strength of the product.
- Low-density polyethylene resin, D477C, has high strength while melting and thereby reduces plastic coatings or laminate use by at least 30%.

SCG GREEN CHOICE

By 2030, generated
67%
revenues from
SCG Green Choice products

2021
49%

2021
30
product categories
received SCG
Green Choice

- Received the carbon footprint for products and organizations certification from Thailand Greenhouse Gas Management Organization (Public Organization) Total 18 product groups such as
  - Olefins and aromatics products.
  - Polyethylene plastic resin products.
  - Polypropylene plastic resin products.
  - Acrylic sheet and methyl methacrylate (MMA) products also received a carbon footprint reduction label from Thailand Greenhouse Gas Management Organization (Public Organization) as well.

2021
18 product categories received carbon footprint labels
4 product categories received carbon reduction labels

Sustainability Issues - Economics, Environmental and Social

Corporate Governance

SCG Chemicals or SCGC conducts business with responsibility, transparency, and fairness for the best interest of all stakeholders. Corporate activities are overseen by the Board of Directors and executives who are outstanding in their adherence to sound corporate governance principles and SCGC Code of Conduct, including a receiving complaints mechanism by a whistleblowing system.

- **Restructuring the Board of Directors to Propel the Organization toward Sustainability.** The Board of Directors was restructured to ensure that it has an appropriate composition and size, with independent directors accounting for more than half of the total number of directors. The Chairman of the Board of Directors is an independent director who is not the Chief Executive Officer, without regard to gender, nationality, ethnicity, etc.
- **Appointing the Sub-Committees** to comprise of the Audit and Risk Management Committee, the Nomination and Remuneration Committee, and the ESG Committee to strengthen operation for sustainability.
- **Establishing the Charter of the Board of Directors and the Charter of the Sub-Committees, Corporate Governance Policies and Practices,** which define the scope of duties and responsibilities in accordance with sound corporate governance principles, such as corporate governance structure and mechanism, policies and guidelines for directors and executives. All of which shall be reviewed annually to ensure compliance with new or updated regulations and conditions.

To learn more about SCGC Chemicals' Corporate Governance Policies and Whistleblower channels, please visit **www.scgchemicals.com**

Business Code of Conduct

SCGC has implemented a long-established and practiced code of conduct known as the **"SCGC Code of Conduct"** in accordance with good corporate governance principles to ensure that employees at all levels perform in an appropriate, transparent, and accountable manner.

- **Raising Awareness Among Employees and Suppliers.** GRC Helpline was developed as a communication channel to provide consultation to employees. SCGC Code of Conduct was included in employee induction training courses. The **"SCGC Code of Conduct"** was established for supplier to follow as a shared standard.
- **Administering Ethics e-Testing and Policy e-Testing.** In 2021, SCGC administered Ethics e-Testing for the seventh consecutive year and Policy e-Testing for the fifth consecutive year to employees at all levels who must pass the tests 100%. In addition, the answers completed by employees have also been analyzed, so that common misunderstandings among employees can be rectified.

100%
Ethic e-Testing/
Policy e-Testing

- **Self-assessment form on the Anti-Corruption Policy.** Conducted a self-assessment annually on corruption risks for executives and operational level employees in the sales, procurement, coordination with government agencies, and community relations departments, as a tool for continual development and improvement.

Sustainable Value Towards Supplier

SCG Chemicals or SCGC has selected suppliers that demonstrate a capability of sustainable business operations in the areas of environment, social, and governance (ESG). SCGC has an effective supplier opt-in system in place that consistently evaluates and reviews suppliers' performance in terms of product and service quality, as well as ESG guidelines. The goal is to develop and improve suppliers towards sustainability together. Since 2019, SCGC has been certified ISO 20400 for sustainable procurement, making it the first company in Thailand's chemical sector to obtain such certification.

- **Developing Automated Business Matching System**
  Developed The Arch system powered by Artificial Intelligence/machine learning technology to match procurement requirements with the most suitable supplier. The approach expands opportunities for potential suppliers to engage in fair tendering while significantly lowering the time required to connect suppliers by more than 20%. The system integrates with the AVL Searching system, which leverages machine learning technology to collect data and search for suppliers based on their qualifications and capabilities.
- **Developing Supplier Capability for Environmental Partnership**
  - Promoted green procurement by selecting manufacturers or service providers with the potential to create processes that reduce environmental impacts.
  - Promoted suppliers with plants registered to adhere to green industry standards for environmental impact reduction policies and processes.
  - Established a partnership project targeted at decreasing greenhouse gas emissions in the suppliers' manufacturing and transportation processes by using SCG's approach of cooperatively developing and improving the processes.

Developing Suppliers for Green Services

The green service was established to promote suppliers who adopt environmentally friendly practices and consider the impacts throughout its life cycle, from manufacturing through use and disposal. In 2021, SCGC added a green service provider which offers scaffolding installation using a reusable locking clamp (2-3 years in service life) in place of the single-use wire, resulting in an annual reduction of 0.8 tons of wire waste.

Target
Develop suppliers through Green Industry Standards by
100%

2021
80%

Target
Develop and promote green procurement to achieve
14%
of the total purchase volume

2021
14%

Customer Experience Creation

SCGC places considerable emphasis on building strong relationships with business customers (B2B) to better understand their needs and respond constructively with products, services, and solutions and foster collaborations in the development of new products and services and solutions. SCGC has conducted customer satisfaction surveys and tracked their repurchasing from strategic customers, in addition to monitoring product and service quality concerns through the analysis of customer complaints and the implementation of preventative and corrective actions.

Contribute Products and Services

- **Digital Commercial Platform**
  Enhance convenience and speed of trading product and service by real-time monitoring sales volume quota and vessel availability, as well as online trading document proof.
- **High Quality Product**
  Ensure product quality with global standards in each business unit with quality checking both in resin form and application testing, in addition to Technical Service support both for production condition and property adjustment.
- **High Standard Service Level**
  Offer service excellent through fast response with high service level standard and digitalized document system to minimize human error.

Collaborate for Innovation

- **i2P Center**
  Encourage collaboration projects with customers both for products and solutions development, with support from i2P that leading project to success.
- **Collaboration Project**
  Create new products and solutions from customer's insights and megatrends plus business matching for sustainable business such as IBC Tank with Dow Chemicals, PCR Soap Gallon with Unilever and high impact film with Betagro.

Connect beyond Relationship

- **Economics/Market Trends Sharing Session**
  Keep customers update on Economics outlook and market trends through **"SCG Chemicals Digest"** to help customers foresee what is coming and plan for better.
- **Seminar/Training for Further Growth of Customers' Business**
  Equip customers with new framework/business model to accelerate growth for future business.
- **Support Customers through Tough Time**
  Assist customers on what is needed to get through pandemic such as COVID Testing kits, and field hospital set up, etc.

Target
Customer Satisfaction
> 85%
2021
87%

Target
Strategic Customer Repurchasing
> 80%
2021
94%

Tracking: Customer Satisfaction, Customer Retention, Claim/Complaint for Continuous Improvement.

Information and Cyber Security

SCGC has implemented policies and guidelines for information technology and cybersecurity management that adhere to ISO 27001 and IEC 62443 standards and the National Institute of Standards and Technology (NIST) framework. Additionally, SCGC has a committee in place that is responsible for governance and monitoring security threats on a regular basis, as well as organizing cyber response drills in cooperation with the Security Operation Center (SOC). In 2021, SCGC developed a cybersecurity awareness development program for its 7,070 employees and tested their cybersecurity capabilities. The Company has been implementing information technology and cybersecurity standards for its international businesses as well.

Target
Zero case of cyber threat
2021
0 case

Target
Zero complaint regarding data insecurity
2021
0 case

Establishment of Architecture and Compliance with Global Standards

- NIST Cybersecurity Framework.
- Data Loss Prevention (DLP).
- Personal Data Protection System.
- Multi-Factor Authentication during the work-from-anywhere period.
- Secured VPN Posture.

Monitoring of Cyber Threats Regularly

- System Penetration Testing.
- ICS Cybersecurity Operation Center (Under Developing).
- Internal Audit and External Audit.

Creating Employee Awareness and Immunization

- Employee e-Policy Testing 100%.
- Employee Phishing Simulation Test/Cyber Hero Program.

Environmental Sustainability Issues

Environmental Management

SCG Chemicals or SCGC is committed to environmental stewardship and resource conservation by maximizing resource efficiency, lowering resource consumption, reducing waste and pollution at the source, and managing waste and pollution in accordance with the 3R principles and circular economy principles. Additionally, it increases efficiency by incorporating innovations and technologies into the management of resources, waste, and pollution.

	Risk	Opportunity
 **Water**	Impacts from climate change results in years of drought and flooding, posing risks of insufficient water resources for production and affecting water users in a wide variety of sectors. Water is a crucial resource for the company's manufacturing process.	 Products were developed to aid in managing water scarcity and water quality, such as PE112 pipes for transporting water to remote areas.
 **Waste**	Inefficient waste management could negatively impact communities and the environment, as well as on the reputation and perception toward businesses. Additionally, it may result in preventable waste disposal costs.	The cost and the use of virgin materials were lowered by recycling and reusing.
 **Air Pollution**	Polluted air emissions, such as NO_X and VOCs, that exceed the area's capacity or health and safety regulations significantly impact health of communities and other stakeholders, resulting in complaints and an unfavorable perception of business operations or expansion.	Undertook a leading role in managing air pollution to build reassurance to communities and stakeholders.

Risk Management	Example of 3R & Circular Economy Activities	Monitoring	Target & Performance
• Participated in the Water War Room with the government to manage risks associated with future crises and took part in effective watershed management with all sectors. • Assessed exposure to water risks using the WRI's AQUEDUCT tool. • Rainwater reserve ponds were included in the plants to ensure an adequate water supply during drought.	• By modifying the chemicals used in the system, the amount of discharge water from the cooling blowdown system was lowered. With this technique, the discharge water from the cooling blowdown system was recycled using a reverse osmosis system and further improved using a sand filtration system. The approach contributed to a 9.6% (2.2 million cubic meters) reduction in external water withdrawal compared to the baseline year of 2014.	• Installation of the continuous wastewater quality monitoring system (Chemical Oxygen Demand, or COD Online), to connect real-time data to the Industrial Estate Authority of Thailand's Data Center.	Reduce water withdrawal by **5%** compared to the base year 2007 within 2025 2021 **12%**
• Waste and chemical management were supervised and promoted in accordance with regulations in an efficient and environmentally friendly manner in accordance with the International Cooperation Framework. • Research and development were conducted to pursue the waste reuse approach.	• The used catalysts were reused not only to minimize the amount of waste that needed to be disposed of by 25 tons per year, but also to reduce the need of new catalysts, 2 million baht annually. • The waste generated by damaged PE and PP plastic pallets was decreased by converting them into Post-Consumer Recycled Resin (PCR). This technique resulted in a 64-ton reduction in waste elimination and the company's cost savings of 1.6 million baht per year. • The amount of sludge to be eliminated was minimized by improving the sedimentary watering system.	• Waste disposal recipients were assessed in accordance with applicable laws and best practices. • Random inspections of waste transports from the plant to waste disposal recipients were conducted.	Zero waste to landfill 2021 **0** Eliminate disposal waste per ton of production by **75%** compared to the base year 2014 2021 **98%**
• Polluted air emissions were controlled at the source with the best-in-class technology. • Since the plant's inception, Ultra Low NO_X Burner was installed to improve combustion efficiency and reduce NO_X emissions. • Install an encloser ground flare to mitigate the impact of noise, light, and smoke during plant startup.	• Dome Roof and VOCs Vapor Recovery Unit were installed at storage tanks and during loading and unloading system. Additionally, VOCs were recovered and recycled in the manufacturing process. • Reduced hydrocarbon combustion in the chamber through the Flare Minimization project by supplying the hydrocarbons required for burning from one plant to another plant that can use them as renewable feedstock. • Implemented the approach of handling VOCs during the full-scale maintenance period without adversely harming the environment.	• Utilized Continuous Emission Monitoring System (CEMs) and reported the real-time results to the Industrial Estate Authority of Thailand's Data Center.	No legal violation cases 2021 **0** case

Human Rights

SCG Chemicals or SCGC recognizes the importance and respect for human rights in all aspects of all individuals. The Company created a committee to establish human rights policies and practices to prevent human rights violations in all of the Company's business activities, including those of its suppliers and business partners. Additionally, it has followed labor protection laws and international labor standards as a core practice in all countries in which it operates and consistently undertake due diligence process. SCGC began enforcing its SCG Privacy Policy on all stakeholders in 2021.

Human Rights Due Diligence Process

1. Identifying human rights risks.
2. Identifying vulnerable groups.
3. Formulating preventive and mitigation plans and remediation actions.
4. Monitoring results.

- **Promoting Employee Diversity:** SCGC seeks talented individuals to join organizations at home and abroad in which everyone is provided equitable opportunities for career growth and advancement. In 2021, SCGC set up a working group to promote female management staff to meet the objective goal.

Target

By 2025, the percentage of women in management is targeted at

27%

2021

24%

- **Establishing Corporate Culture that Respects Human Rights.** SCGC promotes its operations and employees to consistently adhere to human rights principles and respect employee rights. Examples included ensuring the confidentiality of employees' personal health information, encouraging employees to vote, and promoting activities aimed at reducing inequality, such as creating jobs for persons with disabilities to assure their sustained income. Throughout the COVID-19 pandemic, volunteer activities were organized on the online platform to encourage employees to give back to the community and society, such as reading books for the blind, joining tree banks, and arranging online courses for entrepreneurs.

Target

Zero case of human rights violation

2021

0

case

Employee Caring and Development

SCGC fosters continuous learning and development of employees and leadership development and collaboration through a digital learning system that employees can access from anywhere at any time. Additionally, the Company provided courses with current content that reflected business changes to enhance employees' knowledge and skills and equip them to perform in accordance with the organizational objectives.

- **Improving Human Resource Management System.** SCGC enhanced human resource management and development and performed employee engagement surveys on a regular basis. The outcomes were incorporated into ongoing efforts to improve human resource management and development.

  Career Development : SCG Chemicals' career development seeks to encourage rotation and promotion, which provides opportunities and openness within and across professional lines. The objective is to enable employees to grow in ways that align with the business's goals and expansion.

  Performance Management System (PMS) : The assessment method was upgraded to be evidence-based to demonstrate employees' work in a detailed and transparent manner. With PMS, business metrics were linked to work unit tasks and individual tasks, with an emphasis on work behavior and a performance evaluation system.

  Work-Life Balance : The "Free Friday Meeting" policy was introduced, disallowing employees from meeting on Friday afternoons. Additionally, the Friday Get Together activity was designed to help employees strengthen their relationships. The goal was to encourage employees to unwind from work or all-day meetings while working from home.
- **Promoting Hybrid Workplace.** Employees were provided with basic infrastructure and technological systems to enable them to continue working throughout the COVID-19 pandemic, such as MS365 and Zoom meetings. Additionally, the Company facilitated on-site co-working spaces and supported digital learning platforms for employees in the country and abroad. Digital learning content with over 200 courses from internal and external sources was provided through the Company's StarDi Learning Management System.
- **Developing Leadership Program.** Employees were introduced to leadership programs such as the Lead Up Program for supervisors and the Onboarding Program for new leaders. The Company conducted an annual talent assessment to identify future leaders and used the results to create an Individual Development Plan (IDP) and an Organization Succession Plan.
- **Employee and Family Care During COVID-19 Pandemic** (See page 16-19).

Talent Attraction

SCGC promotes and attracts individuals through fair recruiting and selection processes, with a focus on competency-based human resource management as key selection criteria. The process is carried out by knowledge tests, qualifications, and interviews that are handled in the same manner both in the country and aboard regardless of physical differences, gender, race, nationality, culture, etc.

- **Internship Program.** For the fourth consecutive year, SCGC established collaborations with educational institutions to develop student professionals through co-operative education projects that allow students to learn through corporate issues and feel proud of the work they accomplished. Additionally, the Excellent Internship Program was established to provide third-year undergraduates with internship opportunities with the Company and vocational students with internship opportunities in preparation for business demands. As a result, 758 vocational students enrolled in the internship program, with 248 of them subsequently joining the workforce at SCG Chemicals.
- **Expansion of Employment Patterns.** Job-based hiring pattern was implemented in new and digital-based business units in compliance with the business and industry competition.

- **Improvement of Welfare for Flexible Benefit.** The goal was to accommodate a wide range of lifestyle and employee needs, such as point redemption for non-medical expenses. This aimed to increase employee engagement.

Community and Social Involvement

SCG Chemicals or SCGC establishes partnerships with all sectors to improve the quality of life in surrounding communities and enable them to become sustainably self-reliant. This is accomplished through communication and engagement to establish trust in coexistence. The Company adopted the circular economy and innovation as tools to carry out initiatives that promote environmental stewardship, healthcare, and community quality of life and collaboratively address climate change and water management.

2021

All employees participated in the CSR activities at least

one time per year

Budget to support CSR activities

28 million baht

Subsidizing community goods and services

20 million baht

Planning

1. Gather input from community people through community hearings, community visit activities, and so forth.
2. Conduct a community opinion and satisfaction survey through a third-party agency.
3. Analyze data pertaining to government policies, business directions, and society challenges to identify priorities.
4. Prepare a detailed action plan, breaking it into areas on the economy, the environment, and society.

Economy

- **Community Product Development.** Assisted communities to innovate and create identities to add value to products, as well as develop production and product design. Community enterprises include the Tulip housewife group, the Nern Payom community enterprise, the banana processing group, the Mabchalood community enterprise, the rice snack bar enterprise, the Koh Kok community enterprise, the Saenyai Weaving enterprise, and the Batik dying enterprise, etc. The Company assisted the community by expanding sales channels and honing sales abilities through the online marketplace **"Rayong Shop Hi,"** which had over 400 merchants joining. The project generated revenue of approximately 1.7 million baht.

Environment

- **Check Dams and Sustainable Water Management.** Green activities were introduced, including upstream forest restoration, such as tree banks, water retention to alleviate drought through water runoff-slowdown dikes, surface water retention, and flood prevention through groundwater bank projects, and community capacity development in forest care through upstream forest development training projects and local researchers.

Society

- **Community Support During COVID-19 Pandemic.** Provided infection-control equipment worth 2.25 million baht to hospitals, field hospitals, and communities, including aerosol protective tools, personal protective equipment, N95 masks, alcohol, and a paper field hospital bed, etc.

- **Community Enterprise Goods and Service Promotion.** Supported 20 community enterprises with a combined income of more than 20 million baht.
- **Recruited youth from the community to work for the company.**

- About 11% of households in the municipalities of Map Ta Phut and Mab Kha Pattana benefited from the programs.

- **Innovation for Environment.** Innovations were introduced to restore marine resources, such as the **"Fish Home"** made of PE100 pipes, **"KoomKah,"** an innovative waste management application that promotes community waste banks, the SCG-DMCR Litter Trap, and world-saving milk bags that recycle used school milk bags into **"plastic chairs."**

- **Carbon Offsets Through Tree Planting and Mangrove Forestation.** In partnership with government agencies and communities, the Company planted about 4,000 trees in 2021, covering 10 rai of land, and 39,200 mangrove trees, covering 56 rai of mangrove land.

- **Development of Mosquito Trap.** The innovation aims to protect populations from dengue illness. The project was undertaken in collaboration with France's Pasteur Institute and the Ministry of Public Health's Department of Medical Sciences.

- **The Lifesaver Project.** "The Youth Lifesaver" project was held for children in three schools in Map Ta Phut municipality.

- **Scholarships.** Over 2,790 scholarships totaling 13 million baht were annually awarded to those in need in the areas surrounding the plant.

Social Return on Investment (SROI)

Community Enterprise Development Projects

4.73

SCG Fish Home Projects

2.31

Waste Management Projects

1.89

Sharing Opportunities, Drawing the Future Projects

1.76

Yai Da Mountain Check Dam Projects

1.24

About This Report

SCG Chemicals or SCGC has published the sustainability report starting from 2021 by presenting the Sustainability Performance. The selection of Sustainability Performance information included in this report is based on what is determined by SCGC's management to be responsible, relevant and of value for its stakeholders when measuring sustainability performance.

Reporting Scope

The reporting scope, particularly economic data, covers the performance of subsidiaries, joint ventures, associates and other companies both domestic and regional in line with the SCGC Annual Report. Environmental, health and safety data from all business units were included in the report using the combined criteria of equity share of 50% and over and controlled associates, except for overseas operations, the newly established companies (less than 3 years), the merging and acquisition companies (less than 4 years). Exclusivity of the data is as shown on page 63-64. The reporting period for the information in this report is from 1 January 2021 to 31 December 2021.

This Sustainability Report and its data were prepared in accordance with Global Reporting Initiative GRI Standards: Core Option as shown on page 67-72. The information in this report disclosed the Implementing the Recommendations of Response to Sustainability Accounting Standard Board (SASB) as shown in page 73-74, as well as the Task Force on Climate-related Financial Disclosures (TCFD) as shown on page 75.

Sustainability Management System

SCGC applied the management system 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 SCGC has a sustainable management system covering the entire organization, SCGC 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 SCGC have been certified for international standards, including ISO 9001-Quality Management System, ISO 14001- Environmental Management System, OHSAS/TIS 18001/ISO 45001-Occupational Health and Safety Management Certification of safety system standards in the production process from external agencies (Process Safety Management) System, ISO 50001 - Energy Management System and ISO 14064 - Greenhouse Gases Validation and Verification.

In 2021, 100% of subsidiaries have been certified for the Quality Management System, the Environmental Management System and the Occupational Health and Safety Management System.

Reporting Assurance

Financial data was derived from financial management system similar to those presented in SCGC Annual Report and is verified by the certified accounting firm.

The integrity and the transparency of environmental, health and safety data in this report have been assured by an external party to verify and assess the selected data against GRI Standards as shown in detail on page 65-66.

Environment

The environmental data cover those activities that could have a significant impact on the environment together with sites and production process while sites with activities considered not to have a significant impact are not included, for example; sales offices, R&D laboratories, services and holding companies.

The environmental data sources, i.e. accounting evidence, meter reading, data from a production system, and estimation with ground-rule have been presented in absolute value.

For the specific consumption/emission, since 2016 the disclosure of energy, greenhouse gas emission and water withdrawal have been improved with greater visibility by comparing the absolute consumption/emission of the current year with the business as usual (BAU) of the base year prior to the reduction measures. The energy consumption and greenhouse gas emission use the base year of 2007 and water withdrawal use the base year of 2014.

Energy

Total energy consumption includes thermal energy and electricity used in the companies/plants areas. For the details on electric energy, the amount and ratio of alternative energy utilization is also presented, together with the addition of renewable energy and non-renewable energy.

Greenhouse Gas Emissions (GHGs)

GHGs data in this report represent the amount of GHG emissions from the operation based on the calculation according to the WBCSD/WRI Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard as per the following scopes:

1. Reporting Scope

1.1 Direct GHG emissions (Scope 1): GHG emissions occur from the manufacturing process or other activities that are owned, controlled, and managed by SCGC, for example, emissions from combustion of natural gas in boilers, furnaces, vehicles, etc.

1.2 Indirect GHG emissions (Scope 2): GHG emissions occur from the secondary energy, such as electricity, as well as purchased thermal energy, in form of steam.

2. Report of GHG Inventory:

2.1 Direct GHG emission calculation (Scope 1)

- From combustion

- The calculation is based on quantities of fuel consumption (weight or volume) such as: the amount of fuel oil or natural gas x emission factor which was referred to Thailand Greenhouse Gas Management Organization (Public Organization) (TGO). Apart from the TGO emission factor, the Intergovernmental Panel on Climate Change 2006 (IPCC) emission factors can be referred.
- The calculation is based on fuel consumption (based on heating value) such as: amount of coal x heating value x emission factor which was referred to TGO. Apart from TGO emission factor, the 2006 IPCC emission factors can be referred.

2.2 Indirect GHG emissions (Scope 2) will be calculated from purchased electricity or steam consumption x GHG emission factors based on TGO, manufacturers, or suppliers.

3. **The Type of GHG Emissions Report** includes CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3 converted and reported as CO_2 equivalent by Global Warming Potential (GWP). Referred GWP factors are defined by IPCC.

Air Emissions

Air emissions are the quantity of air pollution such as NO_X, SO_X, and Particulate Matter deriving from combustions and being the components during the production process. Types of air pollutants depend upon each production process in which chemical substance is produced. The result and measurement method shall refer to method required by laws such as US EPA or equivalent standard or Thailand law. Reporting of quantity of air emission will be calculated based on concentration measured from random spot checks being conducted by laboratories which are certified and registered to the Department of Industrial Works, multiplied by hot air flow rate and production hours.

SCGC measures air emissions from stack using Continuous Emission Monitoring Systems (CEMs). The volume of Volatile Organic Compounds is obtained from Statutory measurements and calculations using the Emission Factor or Accepted Calculation Program from the Environment Protection Organization of the United States of America (US EPA)

Water

Water management consists of the amount of water withdraw from outside, the amount of recycled water and the amount of effluent.

Beginning from 2020, the amount of water withdrawn from the outside has been reported with categorized by type of water source such as surface water, groundwater, third party water. It also categorized It is freshwater, i.e. water with total dissolved solids not more than 1,000 mg/L and others water with total dissolved solids above 1,000 mg/L. Finally, the water withdrawn of each type taken from water stress area are reported in separated column.

Recycled water is the quantity of treated water returned to the process excluded non-treated reused water such as cooling water.

Beginning from 2020, the effluent has been reported both by discharged destination and by type of effluent.

In addition, the effluent discharge to stress area is categorized by type of effluent. The report of effluent quality in term of BOD, COD and SS are reported along with the amount of effluent.

Industrial Wastes

The industrial wastes are reported into two categories comprising hazardous waste and non-hazardous waste according to the Ministry of Industry's Decree on the Disposal of Waste and Unused Materials, excluding the waste that can be recycled in production process (Work in process, WIP).

Beginning from 2019, the amount of waste has been reported in term of waste generation, waste management and waste in storage in order to indicate the efficiency of production process and efficiency of waste management.

The amount of waste management reported by each waste management method e.g. reused/recycled, incinerated without energy recovery and landfilled.

The amount of waste generation is collected from weighting, calculation or estimation in accordance with academic principles, while the amount of waste management is collected from weighting scale which is more accurate.

In 2021, waste volumes are reported to follow GRI 306 version 2020, categorize into waste that is separated from disposal by reuse or recycle and waste that was sent directly to incinerate both return or non-return energy: Disposal by other incineration and landfill.

Health and Safety

Data on Number of Employees and Contractors

1. **Employee** is 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.
   - Operational level is a front-line worker who uses their skills and technics in their daily operations.
   - Supervisor and technical staff level is a front line manager who is responsible for daily management or having control over subordinates.
   - Managerial level is a manager who is responsible for addressing business strategies or policies, delegating, and controlling supervisor and technical staff level who implement policy and daily jobs.
   - Special contracted employee is a temporary person being employed on a specific period.

2. **Contractor** is a person who has been consented to work or provide service or benefit to the company apart from the company's employee as per the definition specified above, which could be divided into three groups as follows:

   1) Workplace Contractor is a contractor that works for the organization, and whose work and/or workplace is controlled by the organization. (Exclude Transportation contractor.)

2) Direct Transportation Contractor is a transportation contractor with operation under SCGC's brand.
3) Other Transportation Contractor is other transportation contractor without operation under SCGC's brand.

Workplace contractor's data covered in the report will be calculated for number of hours worked. Data on transportation contractors under SCGC Logistics Management Co., Ltd., will be reported in kilometers. Third-party is other people, not the employees and contractors, who are not working for the company and not covered in this report.

Hours Worked Calculation

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

Number of hours worked = [Number of Employees/ Contractors x Number of working days x Number of normal working hours (per day)] + Total number of overtime hours worked (only operational employees and contractors)

Recording of Health and Safety Data

SCGC records data on work-related health and safety as follows:

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

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

High-consequence work-related injury is an injury that results in a fatality or in an injury from which the worker cannot, does not, or is not expected to recover fully to pre-injury health status within six months.

Significant Changes

From year 2019 onwards, information on environment, energy, greenhouse gas, and safety and occupation exclude the results of Siam Mitsui PTA Co., Ltd., Thai Pet Resin Co., Ltd., Thai Plastic and Chemical Co., Ltd. (Samutprakarn Factory) Co., Ltd. and Siam Stabilizer Co., Ltd. due to business cancellation from SCG Chemicals.

In 2021, Map Ta Phut Olefins Co., Ltd. has increased the production capacity by 300,000 tons per year from the original.

Sustainability Performance Data

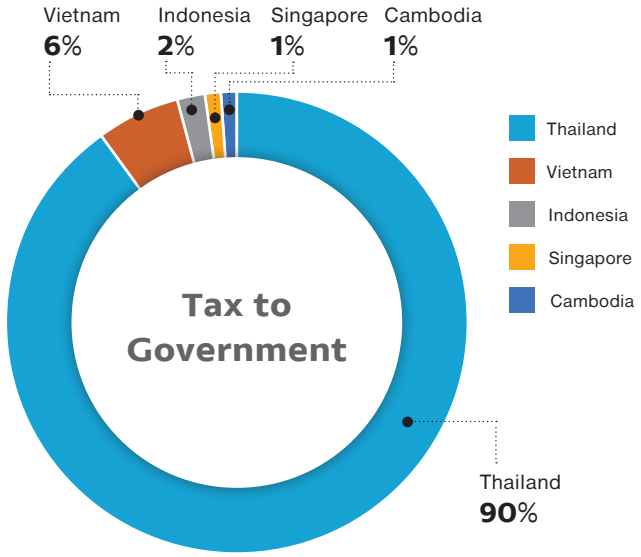
Economic Performance

Performance Data	Unit	2017	2018	2019	2020	2021	GRI Standard	SASB
Revenue from sales	Million Baht	206,280	221,538	177,634	146,870	238,390	GRI 201-1	
Profit for the year	Million Baht	38,145	26,878	14,417	15,341	27,068	GRI 201-1	
EBITDA	Million Baht	63,263	47,100	27,736	31,565	46,681	GRI 201-1	
Employee compensation comprising salary, wage, welfare and regular contributions	Million Baht	9,517	9,407	10,209	10,396	10,425	GRI 201-1	
Dividend to shareholders	Million Baht	16,867	10,327	11,758	11,942	85,841	GRI 201-1	
Interest and financial expenses to lender	Million Baht	898	721	935	908	1,748	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	3,994	3,119	2,085	3,178	3,818	GRI 201-1	
Tax privilege and others from investment promotion, and research and development	Million Baht	3,795	1,097	537	414	949	GRI 201-1	
Contributions to organizations*	Million Baht	NA	NA	NA	NA	NA		
Contributions to political activities**	Million Baht	0	0	0	0	0		
Revenue from Sales of High Value Added Products and Services (Subsidiary)	Million Baht %	62,538 30	67,253 30	59,472 33	53,533 36	85,460 36		
Revenue from Sales of SCG Green Choice Products and Services	Million Baht %	114,995 56	125,271 57	86,733 49	65,739 42	124,149 49		
Revenue from Sales of Products and Services designed for use-phase resource efficiency of Chemicals Business	Million Baht %	NA NA	NA NA	NA NA	490 0.31	5,302 2.1		RT-CH-410a.1
Suppliers that assessed Environmental, Social and Governance (ESG) Risks	% of Procurement Spending	NA	50	80	99	99		
Procurement Spending by Geography • Domestic • Regional	% of Procurement Spending	 80 20	 74 26	 78 22	 78 22	 80 20		
Non-compliance case through SCG Whistleblowing System	Cases	6	2	3	2	8	GRI 205-3	
Average Customer Satisfaction	%	86	86	85	88	87		

* The first seventh organizations contributed by SCG are Alliance to End Plastic Waste (AEPW), World Business Council for Sustainable Development (WBCSD), The Federation of Thai Industries, Global Compact Network Thailand, and The Thai Chamber of Commerce and Board of Trade of Thailand, Thailand Management Association and Thai Institute of Director.

** SCG Chemicals 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).

NA = Not Available



Tax to Government

3,818 Million Baht

Thailand
3,451 Million Baht

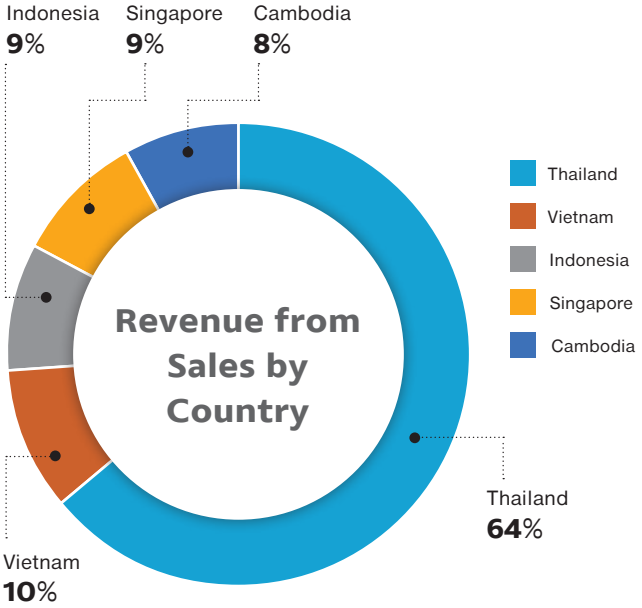
Vietnam
223 Million Baht

Indonesia
82 Million Baht

Singapore
41 Million Baht

Cambodia
20 Million Baht

Others
1 Million Baht



Revenue from Sales by Country

238,390 Million Baht

Thailand
124,297 Million Baht

Vietnam
19,938 Million Baht

South Asia
17,410 Million Baht

China
16,755 Million Baht

Indonesia
14,921 Million Baht

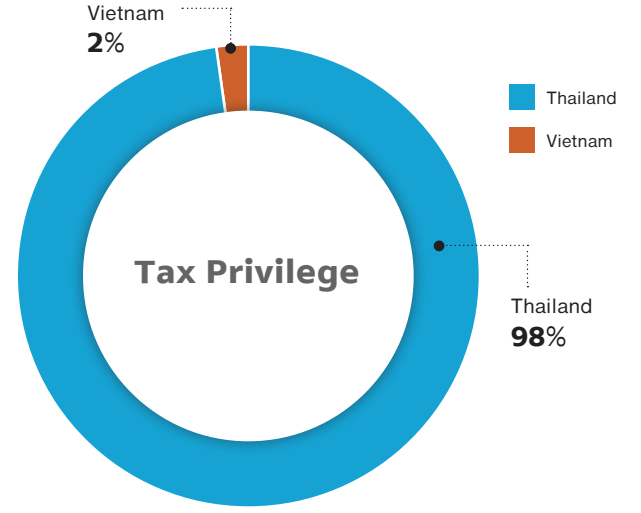
South East Asia (1)
13,836 Million Baht

East Asia (2)
8,483 Million Baht

Others
22,750 Million Baht

(1) Excluding Thailand Vietnam and Indonesia

(2) Excluding China



Tax Privilege

949 Million Baht

Thailand
929 Million Baht

Vietnam
20 Million Baht

Environmental Performance

Production and Raw Material

Performance Data	Unit	2017	2018	2019	2020	2021*	GRI Standard	SASB
Production	Thousand Tons	9,460	8,953	8,350	7,906	9,420		RT-CH-000.A
Raw Materials	Thousand Tons	2,560	2,561	2,562	2,563	2,564	GRI 301-1	
Recycled Materials	Thousand Tons	29	15	37	32	53	GRI 301-2	

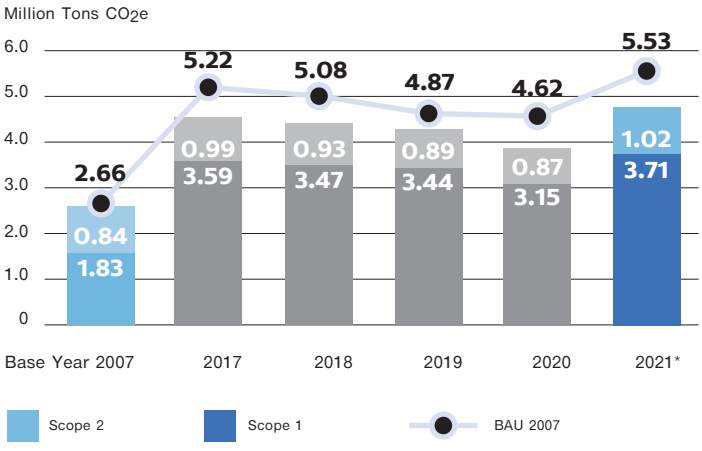
* 1st year to incorporate environmental performance from abroad operation

Greenhouse Gas Emissions

Performance Data	Unit	Base Year 2007	2017	2018	2019	2020	2021*	GRI Standard	SASB
GHGs Scope 1 and 2	Million Tons CO_2e	2.66	4.58	4.39	4.32	4.02	4.73		
GHG Scope 1**	Million Tons CO_2e	1.83	3.59	3.47	3.44	3.15	3.71	GRI 305-1	RT.CH-110a.1
GHG Scope 2**	Million Tons CO_2e	0.84	0.99	0.93	0.89	0.87	1.02	GRI 305-2	
GHG emission reduction compared with the base year of 2007	Million Tons CO_2e	NA	0.64	0.69	0.55	0.61	0.80	GRI 305-5	
	%		12.4	13.6	11.2	13.1	14.5		

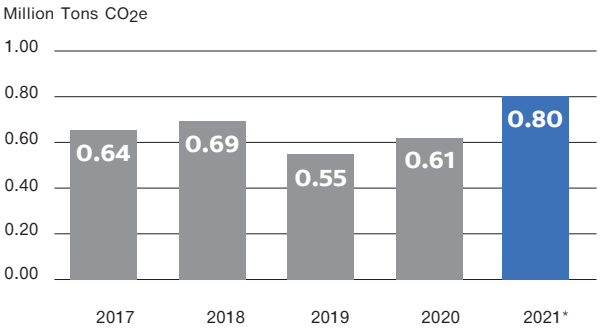
* 1st year to incorporate environmental performance from abroad operation
** Within Deloitte's limited assurance scope (Page 65-66)

Greenhouse Gas Emissions



* 1st year to incorporate environmental performance from abroad operation

Greenhouse Gas Reduction



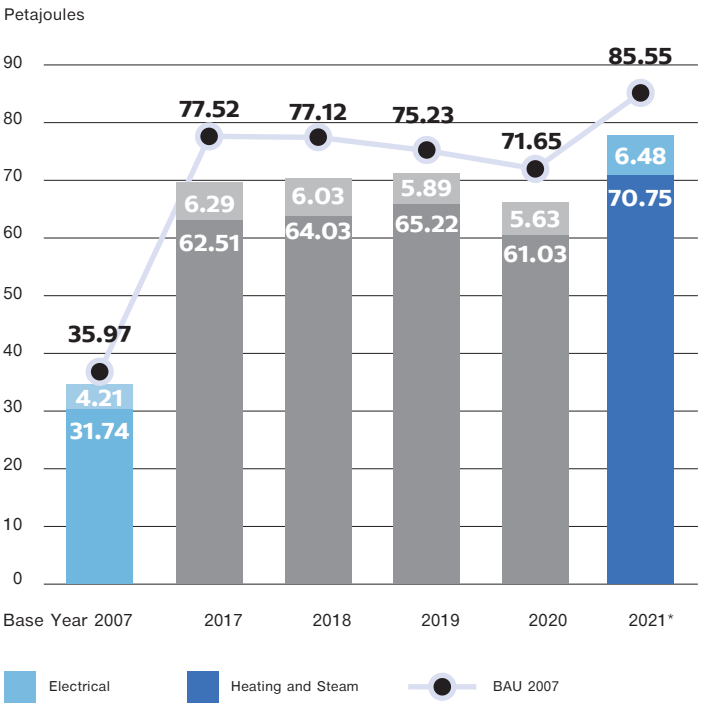
* 1st year to incorporate environmental performance from abroad operation

Energy Consumption

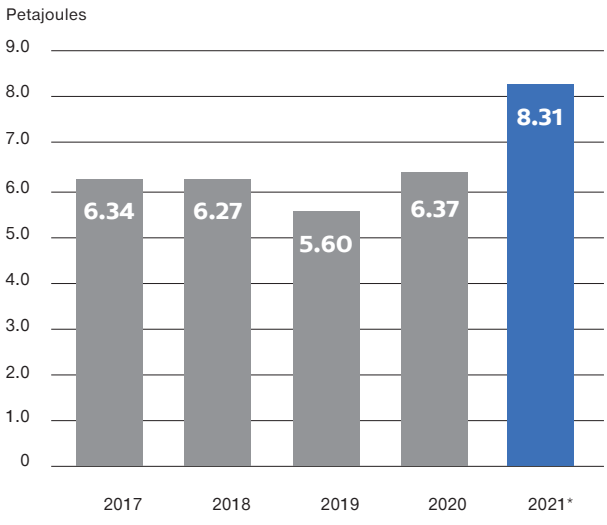
Performance Data	Unit	Base Year 2007	2017	2018	2019	2020	2521*	GRI Standard	SASB
Total Energy Consumption**	Petajoules	35.97	71.18	70.86	69.63	65.28	77.24	GRI 302-1	RT-CH-130a.1
Heating and Steam Consumption**	Petajoules	31.74	62.51	64.03	65.22	61.03	70.75	GRI 302-1	
Alternative Fuel	Petajoules		0.00	0.00	0.00	0.00	0.00	GRI 302-1	
Electricity from Solar Energy	Petajoules		0.00	0.00	0.01	0.01	0.01		
Portion of Alternative Energy	%		0.001	0.003	0.011	0.012	0.016	GRI 302-1	
Electrical Consumption**	Gigawatt Hours		1,749	1,675	1,636	1,564	1,801	GRI 302-1	
Energy Consumption Reduction compared with business as usual (BAU) at the base year of 2007	Petajoules %		6.34 8	6.27 8	5.60 7	6.37 9	8.31 10	GRI 302-4	
Energy Consumption - by Category	Megawatt Hours							GRI 302-1	
a) Non-renewable fuels purchased and consumed			16,584,561	17,204,588	17,075,944	16,008,056	19,015,065		
b) Non-renewable electricity purchased			1,749,133	1,674,606	1,636,422	1,564,410	1,797,336		
c) Steam/heating/cooling and other energy (non-renewable) purchased			1,438,543	803,046	629,724	560,386	638,492		
d) Total renewable energy (wind, solar, biomass, hydroelectric, geothermal, etc.) purchased or generated**			102	642	2,217	2,138	3,428		
e) Total non-renewable energy (electricity and heating & cooling) sold**			0	0	0	0	0		
Total Non-Renewable Energy Consumption (a+b+c-e)**	Megawatt Hours		19,772,237	19,682,240	19,342,089	18,132,852	21,450,893	GRI 302-1	

* 1st year to incorporate environmental performance from abroad operation
** Within Deloitte's limited assurance scope (Page 65-66)

Total Energy Consumption



Energy Reduction



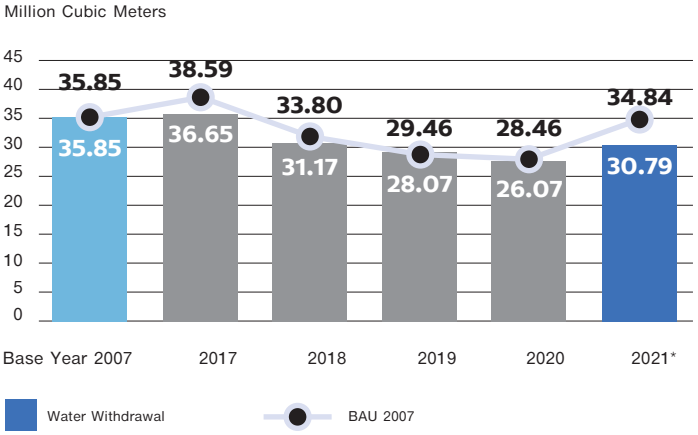
* 1st year to incorporate performance from abroad operation

Water Withdrawal and Effluent Quality

Performance Data	Unit	Base Year 2014	2017	2018	2019	2020	2021*	2021 Area with Water Stress	GRI Standard	SASB
Water Withdrawal										
Water Withdrawal by Source										
Surface Water**	Million Cubic Meters	0.00	0.00	0.00	0.00				GRI 303-3	RT-CH-140a.1
• Freshwater TDS ≤ 1,000 mg/l						0.00	0.00	0.00		
• Other water TDS > 1,000 mg/l						0.00	0.00	0.00		
Groundwater**	Million Cubic Meters	0.00	0.00	0.00	0.00		0.00		GRI 303-3	RT-CH-140a.1
• Freshwater TDS ≤ 1,000 mg/l						0.00	0.48	0.00		
• Other water TDS > 1,000 mg/l						0.00	0.00	0.00		
Third-party Water (total)**	Million Cubic Meters	35.85	36.65	31.17	28.07		0.00		GRI 303-3	RT-CH-140a.1
• Freshwater TDS ≤ 1,000 mg/l						26.07	30.31	0.00		
• Other water TDS > 1,000 mg/l						0.00	0.00	0.00		
Total Water Withdrawal**	Million Cubic Meters	35.85	36.65	31.17	28.07	26.07	30.79	0.00		
Water Withdrawal Reduction compared with business as usual at the base year of 2014	Million Cubic Meters	-	1.94	2.63	1.39	2.39	4.01	0.00		
	%	-	5.0	7.8	4.7	8.2	11.6	0		
Recycled Water**	Million Cubic Meters	NA	1.40	1.46	1.43	1.27	1.69	0.00		
	%	NA	3.8	4.7	5.1	4.9	5.5	0		
Water Discharge										
Water Discharge by Destination**										
• Surface Water	Million Cubic Meters	NA	NA	8.08	3.73	4.62	5.62	0.00	GRI 303-4	
• Groundwater	Million Cubic Meters	NA	NA	0.00	0.00	0.00	0.00	0.00	GRI 303-4	
• Third-party Water (total)	Million Cubic Meters	NA	NA	0.00	0.00	0.03	0.06	0.00		
---Third-party Water sent for use to other organizations	Million Cubic Meters	NA	NA	0.00	0.00	0.00	0.00	0.00	GRI 303-4	
Total Water Discharge**	Million Cubic Meters	NA	NA	8.08	3.73	4.65	5.69	0.00	GRI 303-4	
Water Discharge by Freshwater and Other Water**										
• Freshwater TDS ≤ 1,000 mg/l	Million Cubic Meters	NA	NA	8.08	3.73	1.05	0.57	0.00	GRI 303-4	
• Other water TDS > 1,000 mg/l	Million Cubic Meters	NA	NA	0.00	0.00	3.60	5.12	0.00		
BOD	Tons	NA	NA	25	17	20	19	0	GRI 306-1	
COD	Tons	NA	NA	315	194	241	275	0	GRI 306-1	
TSS	Tons	NA	NA	52	15	41	43	0	GRI 306-1	
Number of violations of legal environmental obligations/regulations	Number of Cases	NA	NA	0	0	0	0	0		RT-CH-140a.2

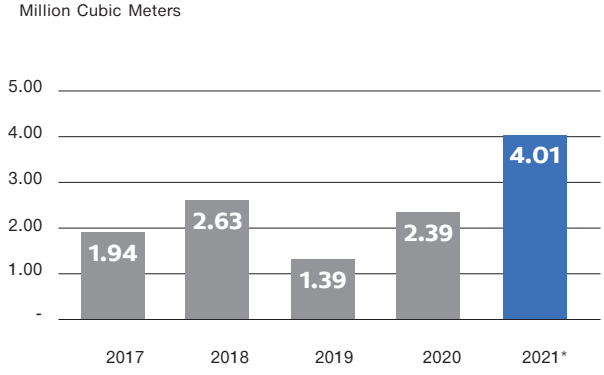
* 1st year to incorporate environmental performance from abroad operation ** Within Deloitte's limited assurance scope (Page 65-66) NA = Not Available

Total Water Withdrawal



* 1st year to incorporate performance from abroad operation

Water Withdrawal Reduction

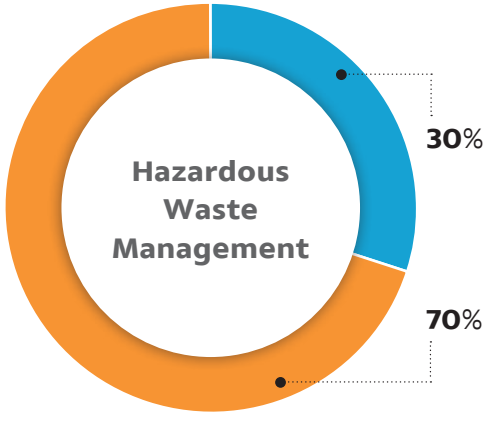


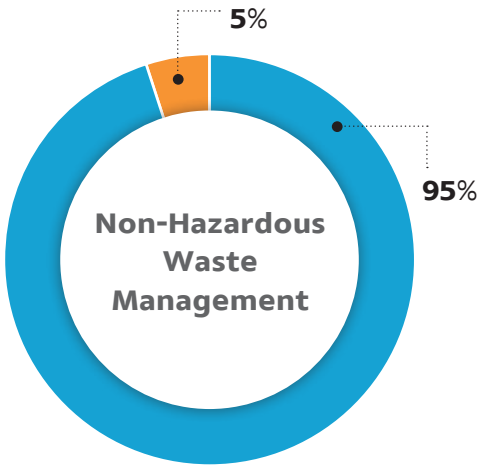
* 1st year to incorporate performance from abroad operation

Waste Management

Performance Data (Only Thailand Operations)	Unit	2017	2018	2019	2020	2021		GRI Standard	SASB
Hazardous Waste Generation*	Tons	6,922	8,399	6,178	11,120		6,559	GRI 306-3 (2020)	RT-CH-150a.1
Hazardous Waste Management						**Within SCGC**	**Outside SCGC**		
Diverted from Disposal*									
• Reuse	Tons		7,636	5,884	10,950	0	0	GRI 306-4 (2020)	RT-CH-150a.1
• Recycled	Tons					5	1,782		
• Other recovery	Tons	6,979				0	113		
Directed to Disposal*									
• Incinerated with energy recovery	Tons		744	289	136	0	4,391	GRI 306-5 (2020)	
• Incinerated without energy recovery	Tons					0	16		
• Other disposal	Tons					0	0		
• Landfilled	Tons	0	0	0	0	0	0		
Hazardous waste in the storage at the end of the year	Tons	228	145	155	180		225		
Non-Hazardous Waste Generation*	Tons	29,156	25,394	23,744	23,783		19,978	GRI 306-3 (2020)	RT-CH-150a.1
Non-Hazardous Waste Management						**Within SCGC**	**Outside SCGC**		
Diverted from Disposal*									
• Reuse	Tons		24,936	23,390	24,702	0	0	GRI 306-4 (2020)	RT-CH-150a.1
• Recycled	Tons					134	18,921		
• Other recovery	Tons	29,377				0	113		
Directed to Disposal*									
• Incinerated with energy recovery	Tons					0	696	GRI 306-5 (2020)	
• Incinerated without energy recovery	Tons		633	846	93	0	296		
• Other disposal	Tons					0	0		
• Landfilled	Tons					0	0		
Non-Hazardous waste in the storage at the end of the year	Tons	815	580	645	699	621			
Total Waste Generated and Being Managed	Tons	36,356	33,949	30,409	35,881				
• Reuse/Recycled/Other recovery/Incinerated with energy recovery	Tons	36,356	32,572	29,274	35,653	139	20,816		
• Incinerated without energy recovery/Other Disposal/Landfilled	Tons		1,377	1,135	229	0	5,398		

* Within Deloitte's limited assurance scope (Page 65-66)





Air Emissions

Performance Data (Only Thailand Operations)	Unit	2017	2018	2019	2020	2021	GRI Standard	SASB
Oxides of Nitrogen*	Thousand Tons	NA	1.59	1.48	1.29	1.52	GRI 305-7	
Oxides of Sulfur*	Thousand Tons	NA	0.01	0.01	0.01	0.01	GRI 305-7	
Dust*	Thousand Tons	NA	0.01	0.02	0.02	0.01	GRI 305-7	
VOCs*	Thousand Tons	NA	0.68	0.63	0.60	0.66	GRI 305-7	

NA = Not Available

* Within Deloitte's limited assurance scope (Page 65-66)

Environmental Expenditures and Benefits/Violations of Legal Obligations and Regulations

Performance Data (Only Thailand Operations)	Unit	2017	2018	2019	2020	2021	GRI Standard	SASB
Operating Expenses – Environmental	Million Baht	NA	NA	747	768	717		
Capital Investment – Environmental	Million Baht	NA	NA	255	110	276		
Total Expenses – Environmental (Capital Investment + Operating Expenses)	Million Baht	NA	NA	1,002	879	993		
Savings, cost avoidance and tax incentives linked to environment investment	Million Baht	NA	NA	158	223	237		
Number of violations of legal environmental obligations/ regulation	No. of Cases	NA	NA	0	0	0	GRI 307-1	

NA = Not Available

Social Performance

Health and Safety

Performance Data	Unit	2017	2018	2019	2020	2021*	GRI Standard	SASB
From Workplace								
Hours Worked**	Million Hours Worked							
• Employee		15.69	16.95	15.03	14.64	17.49	GRI 403-9	
• Contractor		25.69	25.11	24.76	24.09	21.76		
Total Recordable Work-Related Injury and Occupational Illness & Disease Rate	Cases/1,000,000 Hours Worked							
• Employee**		0.064	0.177	0.133	0.205	0.114		RT-CH-320a.1
• Contractor		0.428	0.797	0.121	0.208	0.414		
Fatality Work-Related Injury and Occupational Illness & Disease Rate	Cases/1,000,000 Hours Worked							
• Employee**		0.000	0.000	0.000	0.000	0.000		RT-CH-320a.1
• Contractor		0.000	0.000	0.000	0.000	0.138		
Total Number of Recordable Work-Related Injury**	Cases							
• Employee		1	3	2	3	2	GRI 403-9	
• Contractor		11	20	3	5	9		
Total Recordable Work-Related Injury Rate**	Cases/1,000,000 Hours Worked							
• Employee		0.064	0.177	0.133	0.205	0.114		
• Contractor		0.428	0.797	0.121	0.208	0.414	GRI 403-9	
Number of Fatality Work-Related Injury**	Cases							
• Employee (Male : Female)		0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	GRI 403-9	
• Contractor (Male : Female)		0 : 0	0 : 0	0 : 0	0 : 0	3 : 0		
Fatality Work-Related Injury Rate**	Cases/1,000,000 Hours Worked							
• Employee		0.000	0.000	0.000	0.000	0.000	GRI 403-9	RT-CH-320a.1
• Contractor		0.000	0.000	0.000	0.000	0.138		
Number of High-Consequence Work-Related Injury**	Cases							
• Employee		NA	NA	NA	0	0	GRI 403-9	
• Contractor		NA	NA	NA	0	0		
High-Consequence Work-Related Injury Rate**	Cases/1,000,000 Hours Worked							
• Employee		NA	NA	NA	0.000	0.000		
• Contractor		NA	NA	NA	0.000	0.000	GRI 403-9	
Lost Time Injury Frequency Rate**	Cases/1,000,000 Hours Worked							
• Employee		0.000	0.059	0.000	0.000	0.000		
• Contractor		0.078	0.199	0.000	0.000	0.092		
Severity Work-Related Injury Rate	Days/1,000,000 Hours Worked							
• Employee		0.000	0.472	0.000	0.000	0.000		
• Contractor		1.946	15.333	0.000	0.000	2.390		
Total Number of Recordable Occupational Illness & Disease** (Only Thailand Operations)	Cases							
• Employee		0	0	0	0	0	GRI 403-10	
• Contractor		0	0	0	0	0		
Occupational Illness Frequency Rate (Only Thailand Operations)	Cases/1,000,000 Hours Worked							
• Employee**		0.000	0.000	0.000	0.000	0.000		
• Contractor		0.000	0.000	0.000	0.000	0.000		
Number of Fatality Occupational Illness & Disease (Only Thailand Operations)	Cases							
• Employee**		0	0	0	0	0	GRI 403-10	
• Contractor		0	0	0	0	0		
Process Safety Incidents Count (PSIC)	Cases	NA	NA	NA	0	0		RT-CH-540a.1

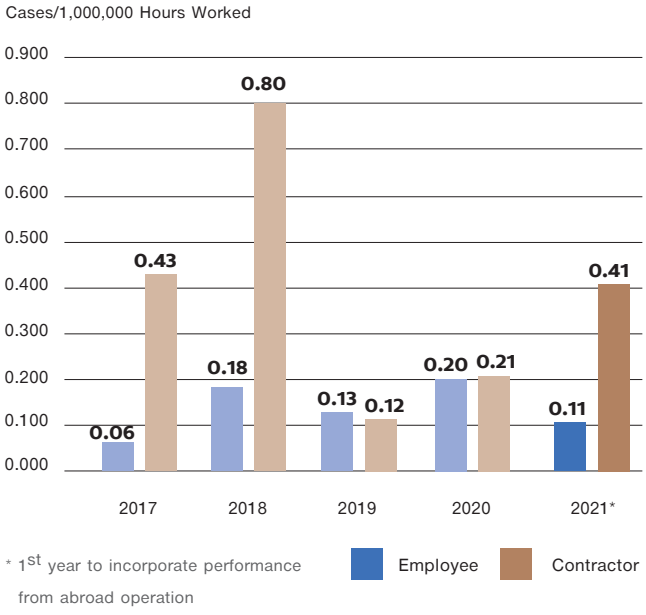
Performance Data	Unit	2017	2018	2019	2020	2021*	GRI Standard	SASB
From Workplace								
Process Safety Total Incident Rate (PSTIR)	Cases/200,000 Hours Worked	NA	NA	NA	0	0		RT-CH-540a.1
Process Safety Incident Severity Rate (PSISR)	Cases/200,000 Hours Worked	NA	NA	NA	0	0		RT-CH-540a.1
Number of Chemicals Spillage	Cases							
Level 1 : High Severity		0	1	0	1	0	GRI 306-3	
Level 2 : Moderate Severity		0	1	0	0	0		
Level 3 : Low Severity		4	4	4	3	3		
From Travelling and Transportation								
Number of Fatality Work-Related Injury**	Cases						GRI 403-9	
• Employee (Male : Female)		0 : 0	0 : 0	0 : 0	0 : 0	0 : 0		
• Direct Transportation Contractor (Male : Female)		0 : 0	0 : 0	0 : 0	0 : 0	0 : 0		
• Other Transportation Contractor (Male : Female)		0 : 0	0 : 0	0 : 0	0 : 0	0 : 0		
Number of Transport Incidents	Cases	0	1	1	2	1		RT-CH-540a.2
From Workplace, Travelling and Transportation								
Number of Fatality Work-Related Injury**	Cases							
• Employee (Male : Female)		0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	GRI 403-9	
• Contractor (Male : Female)		0 : 0	0 : 0	0 : 0	0 : 0	3 : 0		
Others								
Product that have undergone a Hazard Assessment	%	NA	NA	NA	100	100		RT-CH-410b.1
Revenue from Products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS)	%	NA	NA	NA	100	100		RT-CH-410b.1

* 1st year to incorporate environmental performance from abroad operation

** Within Deloitte's limited assurance scope (Page 65-66)

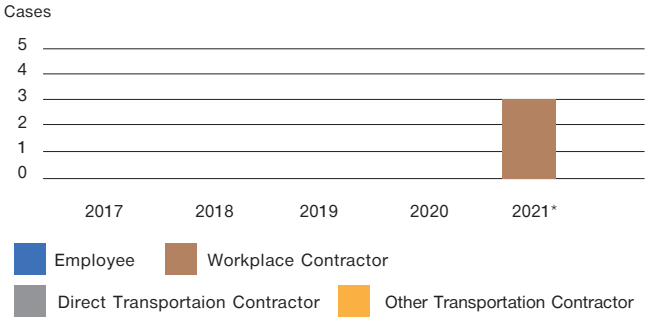
NA = Not Available

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

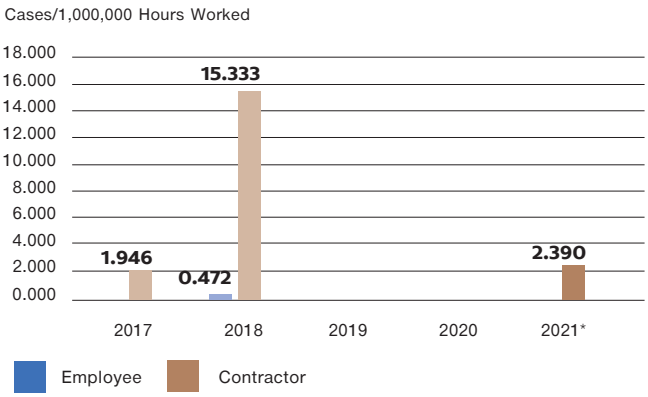


* 1st year to incorporate performance from abroad operation

Number of Fatality Work-Related Injury



Severity Work-Related Injury Rate



Labor and Social Development

Performance Data	Unit	2017	2018	2019	2020	2021	GRI Standard	SASB
Number of employees	Persons	5,784	5,841	5,784	5,856	6,168	GRI 102-8	
Female share of total workforce	%	20.0	20.8	21.2	20.3	20.5	GRI 405-1	
Female in all management positions	%	19.9	21.0	21.3	21.2	23.0	GRI 102-8	
Female in junior management positions	%	21.2	22.6	22.7	22.7	24.4		
Female in top management positions	%	10.6	12.1	11.7	13.3	16.7		
Female in management positions in revenue-generating functions*	%	11.1	9.2	10.0	9.8	11.9		
Proportion of local senior management**	%	2.5	2.5	2.4	1.9	1.7	GRI 202-2	
Number of employees with disability***	Persons	0	1	1	2	2		
Employees represented by an independent trade union or covered by collective bargaining agreements****	%	NA	99.8	99.6	100	100		
Proportion of Absence by Type								
• Sick Leave	%	0.90	2.00	0.70	0.68	0.53	GRI 403-2	
• Work-related leave	%	0	0	0	0	0		
• Others	%	99.1	98	99.3	99.32	99.47		
Number of new employees hire	Persons	221	259	185	36	152		
• Percentage of total employees	%	28.05	30.87	21.36	3.34	11.06		
• by Gender (Female : Male)	%	24 : 76	24 : 76	20 : 80	8 : 92	20 : 80	GRI 401-1a	
• by Employee level (Management level : Other level)	%	1.35 : 83 : 17 : 0	0.8 : 99.2	0 : 100	0 : 100	0 : 100		
• by Age group (under 30 yr : 30 - 50 yr : over 50 yr)	%	98.65	81 : 19 : 0	84 : 16 : 0	94 : 6 : 0	90 : 10 : 0		
Number of positions filled by internal candidates (Rotation/Promotion)	Persons	415	510	467	194	432		
• Percentage of total employees	%	8.3	10.2	9.5	4.1	9		
• by Gender (Female : Male)	%	25 : 75	28 : 72	25 : 75	20 : 80	26 : 74		
• by Employee level (Management level : Other level)	%	14.5 : 85.5	9.4 : 90.6	9 : 91	12 : 88	16 : 84		
• by Age group (under 30 yr : 30 - 50 yr : over 50 yr)	%	30 : 69 : 1	30 : 67 : 3	28 : 68 : 4	23 : 73 : 4	28 : 69 : 3		
Average hiring cost per employee	Baht/Person	24,400	15,800	80,600	191,200	72,000		
Voluntary employee turnover	Persons	103	113	173	151	128		
• Percentage of total employees	%	2.1	2.3	3.5	3.6	3.6		
• by Gender (Female : Male)	%	21 : 79	24 : 76	27 : 73	25 : 75	23 : 77	GRI 401-1b	
• by Employee level (Management level : Other level)	%	2 : 98	5 : 95	2 : 98	6 : 94	3 : 97		
• by Age group (under 30 yr : 30 - 50 yr : over 50 yr)	%	51 : 47 : 2	49 : 48 : 3	45 : 54 : 1	25 : 55 : 20	39 : 57 : 4		
Total employee turnover	Persons	131	189	285	174	156		
• Percentage of total employees	%	2.6	3.8	5.8	3.6	3.3		
• by Gender (Female : Male)	%	18 : 82	16 : 84	23 : 77	23 : 77	23 : 77	GRI 401-1	
• by Employee level (Management level : Other level)	%	3 : 97	6 : 94	7 : 93	6 : 94	8 : 92		
• by Age group (under 30 yr : 30 - 50 yr : over 50 yr)	%	48 : 39 : 13	32 : 53 : 15	28 : 51 : 21	22 : 48 : 30	33 : 47 : 20		
Return to work after parental leave*****								
• Number of employees taken parental leave	Persons	17	18	18	13	16	GRI 401-3	
• Number of employees returned to work after parental leave	Persons	17	18	18	13	16		
Employee engagement level	%	NA	67	NA	69	58		
• by Gender (Female : Male)	%	NA	NA	NA	62 : 71	52 : 60		
• by Employee level (Management level : Other level)	%	NA	75 : 65	NA	78 : 67	69 : 57		
• by Service year (0-5 yr : over 5-20 yr : over 20 yr)	%	NA	63 : 66 : 75	NA	66 : 67 : 76	52 : 55 : 69		

Performance Data	Unit	2017	2018	2019	2020	2021	GRI Standard	SASB
Employee engagement level by ethnic group of employees (Thai : Others)	%	NA	67 : 71	NA	69 : 66	NA		
Remuneration of Female to Male (Only Thailand Operations)								
Average salary of Executive Level (base salary only)******								
• Female	Thousand Baht	6,024	6,737	7,332	7,644	7,908	GRI 405-2	
• Male	Thousand Baht	6,122	6,920	6,488	5,948	6,889		
Ratio of average salary of female to male (Executive Level) (base salary only)******	Ratio	0.984	0.974	1.130	1.285	1.148	GRI 405-2	
Average salary of Executive Level (base salary + other cash incentives)******								
• Female	Thousand Baht	9,486	12,959	12,384	11,651	13,230	GRI 405-2	
• Male	Thousand Baht	11,525	12,800	11,087	9,581	11,206		
Ratio of average salary of female to male (Executive Level) (base salary + other cash incentives)******	Ratio	0.823	1.012	1.117	1.216	1.181	GRI 405-2	
Average salary of Management Level (base salary only)******								
• Female	Thousand Baht	2,141	2,522	2,339	2,272	2,345	GRI 405-2	
• Male	Thousand Baht	2,299	2,803	2,475	2,341	2,244		
Ratio of average salary of female to male (Management Level) (base salary only)******	Ratio	0.931	0.900	0.945	0.971	1.045	GRI 405-2	
Average salary of Management Level (base salary + other cash incentives)******								
• Female	Thousand Baht	3,021	3,790	3,678	3,557	3,540	GRI 405-2	
• Male	Thousand Baht	3,361	4,057	3,945	3,594	3,501		
Ratio of average salary of female to male (Management Level) (base salary + other cash incentives)******	Ratio	0.899	0.934	0.932	0.990	1.011	GRI 405-2	
Average salary of female to male (Non-management Level) (base salary only)******							GRI 405-2	
• Female	Thousand Baht	660	696	746	754	791		
• Male	Thousand Baht	542	566	594	616	608		
Ratio of average salary of female to male (Non-management Level) (base salary only)******	Ratio	1.218	1.230	1.256	1.224	1.301	GRI 405-2	
Average salary of Non-management Level (base salary + other cash incentives)******								
• Female	Thousand Baht	1,137	1,005	1,050	1,153	1,223	GRI 405-2	
• Male	Thousand Baht	1,121	1,043	1,050	1,119	1,166		
Ratio of average salary of female to male (Non-managementLevel) (base salary + other cash incentives)******	Ratio	1.014	0.964	1.000	1.030	1.049	GRI 405-2	
Human Development								
Average hours of training and development	Hours/Person	72	101	76	85	51	GRI 404-1	
• Mandatory	Hours/Person	NA	NA	NA	NA	NA		
• Non-mandatory	Hours/Person	NA	NA	NA	NA	NA		
Average amount spent on training and development	Baht/Person	36,080	105,820	88,680	62,200	10,880		
Number of sites where human rights risks have been identified with mitigation plans	No. of Sites	NA	NA	NA	NA	NA		

Performance Data	Unit	2017	2018	2019	2020	2021	GRI Standard	SASB
Social Contribution								
Contribution for social and community development	Million Baht	NA	NA	NA	NA	14.79	GRI 201-1	
Employee volunteering during paid working hours	Million Baht	NA	NA	NA	NA	3.84		
In-kindgiving: products or servicesdonations, projects/partnerships or similar	Million Baht	NA	NA	NA	NA	NA		
Management overheads related to CSR activity	Million Baht	NA	NA	NA	NA	38.93		

* Revenue-generating functions e.g. marketing, sales, production

** Calculate from percentage of local Management Level over total staff in abroad

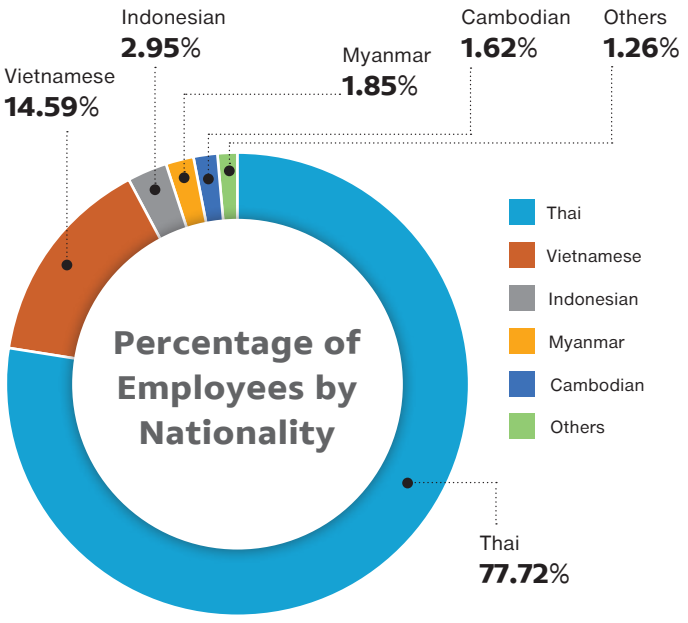
*** Visual and physical impairment and movement disability or other, e.g. hearing impairment, mental disability, communication disability

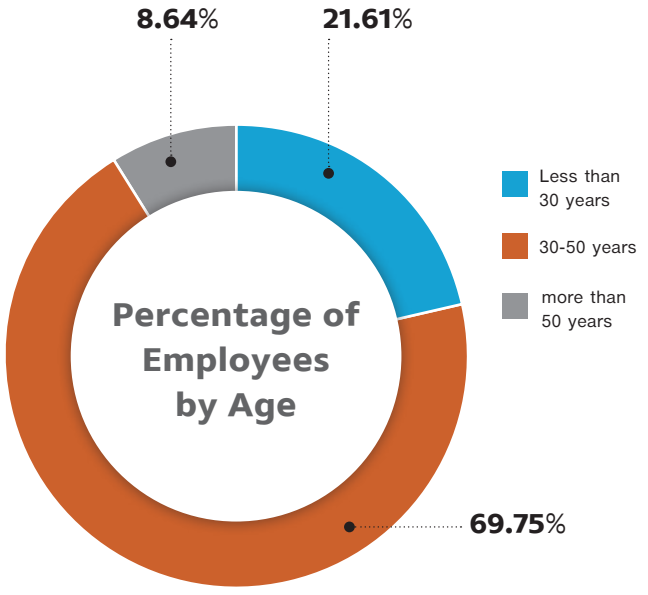
**** Employees joining trade union or working with companies covered by Welfare Committee

***** Under Thai laws, only female employees can take parental leave

****** Within Deloitte's limited assurance scope (Page 65-66)

NA = Not Available





Subsidiaries Included in Sustainability Report 2021* (Thailand)

	Business / Company	Production	Raw Material		Environment													Safety	Occupational Illness and Disease
			All Raw Material	Recycled/ Renewable	Energy		Air					Water					Waste		
					Thermal	Electricity	Dust	SO_x	NO_x	GHG	VOCs	Water Withdrawal	Recycled Water	BOD	COD	TSS			
	Subsidiaries																		
1	SCG Chemicals Co., Ltd.																	✓	✓
2	Thai Polyethylene Co., Ltd.	✓	✓	✓	✓	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	SCG Plastics Co., Ltd.																	✓	✓
4	SCG Performance Chemicals Co., Ltd.																	✓	✓
5	Rayong Engineering & Plant Service Co., Ltd.																	✓	✓
6	Protech Outsourcing Co., Ltd.																	✓	✓
7	RIL 1996 Co., Ltd.	NR	NR	NR	NR	✓	NR	NR	NR	✓	NR	NR	NR	✓	✓	✓	✓	✓	✓
8	Texplore Co., Ltd.																	✓	✓
9	Vina SCG Chemicals Co., Ltd.																		
10	Rayong Pipeline Co., Ltd.																	✓	✓
11	Thai Plastic and Chemicals Public Company Limited	✓	✓	✓	✓	✓	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
12	TPC Paste Resin Co., Ltd.	✓	✓	✓	✓	✓	NR	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13	Nawa Plastic Industries Co., Ltd. (Rayong/Saraburi)	✓	✓	✓	✓	✓	NR	NR	NR	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓
14	Nawa Intertech Co., Ltd.	✓	✓	✓	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	✓	✓	✓
15	Total Plant Service Co., Ltd.																		
16	SCG Ico Polymers Company Limited	✓	✓	✓	✓	✓	NR	NR	NR	✓	NR	✓	✓	NR	NR	NR	✓	✓	✓
17	Map Ta Phut Tank Terminal Co., Ltd.	NR	NR	NR	✓	✓	NR	NR	NR	✓	✓	✓	✓	NR	NR	NR	✓	✓	✓
18	Map Ta Phut Olefins Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓
19	Rayong Olefins Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20	Flowlab & Service Co., Ltd.																	✓	✓
21	SMH Co., Ltd.																		
22	Repco Maintenance Co., Ltd.																	✓	✓
23	WTE Company Limited																		
24	Circular Plas Company Limited																		
25	Kation Power Co., Ltd.																		
	Associates and Other Companies																		
1	Rayong Terminal Co., Ltd.	NR	NR	NR	✓	✓	NR	NR	NR	✓	✓	✓	✓	NR	NR	NR	✓	✓	✓
2	Thai MMA Co., Ltd.	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	Grand Siam Composites Co., Ltd.	✓	✓	✓	✓	✓	✓	NR	NR	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓
4	Thai MFC Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	✓	✓	✓
5	Siam Tohcello Co., Ltd.	✓	✓	✓	✓	✓	NR	NR	NR	✓	NR	✓	✓	✓	✓	✓	✓	✓	✓
6	RIKEN (THAILAND) CO.,LTD.																		
7	Bangkok Synthetics Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

* Economic performance covers all significant subsidiaries, joint ventures, associates and other companies according to Annual Report 2021

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

NR = Non Relevance

Subsidiaries Included in Sustainability Report 2021* (Abroad)

	Business / Company	Country	Production	Raw Material		Environment														Safety	Occupational Illness and Disease
				All Raw Material	Recycled/ Renewable	Energy		Air					Water					Waste			
						Thermal	Electricity	Dust	SO_x	NO_x	GHG	VOCs	Water Withdrawal	Recycled Water	BOD	COD	TSS				
	Subsidiaries																				
1	SCG Chemicals Trading Singapore Pte. Ltd.	Singapore																			
2	Long Son Petrochemicals Co., Ltd.	Vietnam																			
3	SCG Chemicals (Singapore) Pte. Ltd.	Singapore																			
4	Tuban Petrochemicals Pte. Ltd.	Singapore																			
5	Hexagon International, Inc.	USA																			
6	SENFI Norway AS	Norway																			
7	Norner AS	Norway																			
8	Norner Research AS	Norway																			
9	SCGN AS	Norway																			
10	Norner Verdandi AS	Norway																			
11	CO2 Technologies AS	Norway																			
12	PT TPC Indo Plastic and Chemicals	Indonesia	✓	NR	NR	✓	✓	NR	NR	NR	✓	NR	✓	✓	NR	NR	NR	NR	✓	NR	
13	Chemtech Co., Ltd.	Vietnam	✓	NR	NR	NR	✓	NR	NR	NR	✓	NR	✓	✓	NR	NR	NR	NR	✓	NR	
14	Xplore S.R.L. (ชื่อเดิม HTEXplore S.R.L.)	Italy																			
15	SENFI UK Limited	UK																			
16	SENFI Swiss GmbH	Switzerland																			
17	Grand Nawaplastic Myanmar Co., Ltd.	Myanmar																			
18	Viet-Thai Plastchem Co., Ltd.	Vietnam	✓	NR	NR	✓	✓	NR	NR	NR	✓	NR	✓	✓	NR	NR	NR	NR	✓	NR	
19	TPC Vina Plastic and Chemicals Corporation Ltd.	Vietnam	✓	NR	NR	✓	✓	NR	NR	NR	✓	NR	✓	✓	NR	NR	NR	NR	✓	NR	
20	Nawaplastic (Cambodia) Co., Ltd.	Cambodia	✓	NR	NR	✓	✓	NR	NR	NR	✓	NR	✓	✓	NR	NR	NR	NR	✓	NR	
21	PT Nusantara Polymer Solutions	Indonesia																			
22	Binh Minh Plastics Joint Stock Company	Vietnam	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	✓	NR	
23	North Binh Minh Plastics Limited Company	Vietnam																			
24	PT Berjaya Nawaplastic Indonesia	Indonesia																			
	Associates and Other Companies																				
1	SCG Plastics (China) Co., Limited	Hong Kong																			
2	SCG Plastics (Shanghai) Co., Ltd.	China																			
3	A.J. Plast (Vietnam) Company Limited	Vietnam																			
4	PT Siam Maspion Terminal	Indonesia																			
5	PT Trans-Pacific Polyethylene Indonesia	Indonesia																			
6	PT Trans-Pacific Polyethylindo	Indonesia																			
7	PT Chandra Asri Petrochemical Tbk	Indonesia																			
8	Mitsui Advanced Composites (Zhongshan) Co., Ltd.	China																			
9	Da Nang Plastics Joint Stock Company	Vietnam																			
10	Binh Minh Viet Trading Investment Real Estate	Vietnam																			

* Economic performance covers all significant subsidiaries, joint ventures, associates and other companies according to Annual Report 2021

NR = Non Relevance

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

Deloitte.

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INDEPENDENT LIMITED ASSURANCE REPORT ON SCG CHEMICALS SUSTAINABILITY REPORT 2021

To Sustainable Development Committee of SCG Chemicals Company Limited

Scope of our work

SCG Chemicals Company Limited ("SCG Chemicals") has engaged Deloitte Touche Tohmatsu Jaiyos Audit Co., Ltd. ("we" or "us") to perform limited assurance procedures on selected subject matter ("the Subject Matter") for the year ended December 31, 2021 presented in the SCG Chemicals Sustainability Report 2021 ("the Sustainability Report") in accordance with the reporting criteria ("the Criteria").

Subject Matter

The selected Subject Matter chosen by SCG Chemicals comprises:

a) Environmental dimension performance indicators expressed numerically
   - Energy consumption (petajoules)
   - Greenhouse gas emissions scope 1 & 2 (million tons)
   - Water withdrawal (million cubic meters) and recycled water (million cubic meters)
   - Water discharge (million cubic meters)
   - Total weight of waste by type and disposal method (thousand tons)
   - Oxides of Nitrogen (NO_x), Oxides of Sulfur (SO_x), dust and Volatile organic compounds (VOC) emissions data (thousand tons)

b) Social dimension performance indicators
   - Number and rate of fatalities, high-consequence work-related injuries, recordable work-related injuries and number of hours worked
   - Number of fatalities as a result of work-related ill health, number of cases of recordable work-related ill health
   - Ratio of the basic salary and remuneration of women to men

Criteria

The selected Subject Matter above included in the Sustainability Report has been assessed according to the reporting principle prepared by SCG Chemicals in "About this report" which is in accordance with the Sustainability Reporting Standards – Core issued by the Global Reporting Initiative (GRI Standards), and the WBCSD/WRI Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard), where relevant, and influenced by Sustainability Accounting Standards issued by Sustainability Accounting Standards Board (SASB), where relevant.

Basis of our work and level of assurance

We carried out limited assurance in accordance with International Standard on Assurance Engagements 3000 ("ISAE 3000") "Assurance Engagements other than Audits or Reviews of Historical Financial Information" and International Standard on Assurance Engagements 3410 ("ISAE 3410") "Assurance Engagements on Greenhouse Gas Statements".

To achieve limited assurance ISAE 3000 and ISAE 3410 require that we review the process and systems used to compile the areas on which we provide assurance. It does not include detailed testing of source data or the operating effectiveness of processes and internal controls. This provides less assurance and it substantially less in scope than a reasonable assurance engagement.

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

We have applied International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedure regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Inherent limitation

Inherent limitation exists in all assurance engagements due to the selective testing of the information being examined. Therefore fraud, errors or non-compliance may occur and not be detected. Additionally, non-financial data may be subject to more inherent limitations than financial data, given both its nature and the methods used for determining, calculating and estimating such data. Greenhouse gases quantification is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases.

Key assurance procedures

Considering the risk of material error, we planned and performed the work to obtain all the information and explanations considered necessary to provide sufficient evidence to support our assurance conclusion.

The assurance procedures included the following work:

- interviewing SCG Chemicals' management, included the Sustainable Development team and those with operational responsibility for performance in the areas we are report on
- visiting selected three sites:
  - Rayong Olefins Co., Ltd.
  - Thai Plastic and Chemicals PCL., and
  - TPC Vina Plastic and Chemicals Corporation Ltd.
- completing analytical procedures
- reviewing the appropriateness of management review and reporting processes
- reviewing the process which the management used in materiality assessment
- performing testing of selected data on sampling basis, and
- reviewing the process for consolidating data at a business level and corporate level.

As a limited assurance engagement generally comprises of making enquiries, primarily of management, and applying analytical procedures and the work is substantially less detailed than that undertaken for a reasonable assurance engagement the level of assurance is lower than would be obtained in a reasonable assurance engagement.

Respective responsibilities of the Management and Independent assurance provider

The management of SCG Chemicals is responsible for the preparation of the Sustainability Report which is accordance with the Sustainability Reporting Standards - Core issued by the Global Reporting Initiative (GRI Standards), Sustainability Accounting Standards issued by Sustainability Accounting Standards Board (SASB), and the WBCSD/WRI Greenhouse Gas Protocol: A Corporate Accounting, where relevant and determining the adequacy of the Criteria to meet the reporting needs of SCG Chemicals. Management's responsibility also includes designing, implementing and maintaining of internal control system relevant to the preparation and fair presentation of the selected Subject Matter that is free from material misstatement, whether due to fraud or error.

Our responsibility is to independently express limited assurance opinion in accordance with ISAE 3000 and ISAE 3410 on the selected Subject Matter.

Limitation of Use

This report has been prepared in accordance with our engagement terms, solely for the SCG Chemicals Sustainable Development Committee as a body, for the purpose of reporting on the selected Subject Matter within the Sustainability Report. To the fullest extent permitted by the law, we do not accept or assume responsibility to anyone other than the SCG Chemicals Sustainable Development Committee for our work or for this report, or for any other purpose other than that for which this report was prepared.

Our assurance opinion

Based on the work described above, nothing has come to our attention that causes us to believe that the selected Subject Matter for the year ended December 31, 2021 included in the SCG Chemicals Sustainability Report 2021 has not been prepared, in all material respects, in accordance with the Criteria.

Kasiti Ketsuriyonk
Partner
Deloitte Touche Tohmatsu Jaiyos Audit Co., Ltd.

Bangkok, Thailand
February 23, 2022

GRI Content Index

Standard Disclosure		Location	Disclosure/ Comment	Assurance
GRI102: General Disclosure				
Organization Profile				
102-1	Name of the organization	SR Front cover, SR Back cover		
102-2	Activities, brands, products, and services	SR 8-9		
102-3	Location of headquarters	SR Back cover		
102-4	Location of operations	SR 8		
102-5	Ownership and legal form	SCG AR 211		
102-6	Markets served	SR 7, SR 9		
102-7	Scale of the organization	SR 51-52		
102-8	Information on employees and other workers	SR 60-61		
102-9	Supply chain	SR 10-11, SR 40, SR 50		
102-10	Significant changes to the organization and its supply chain	SR 7, SCG AR 16		
102-11	Precautionary Principle or approach	SCG AR 72-83		
102-12	External initiatives	SR 7, SR 9, SCG AR5-7, SCG AR 90-95		
102-13	Membership of associations	SR 32, SR 75, SCG SR 8-9		
Strategy				
102-14	Statement from senior decision-maker	SR 3, SR 6		
102-15	Key impacts, risks, and opportunities	SR 16-27, SR 42-45, SCG AR 72-83		
Ethics and integrity				
102-16	Values, principles, standards, and norms of behavior	SCG AR 141-164		
102-17	Mechanisms for advice and concerns about ethics	SR 4-5, SCG AR 141-164		
Governance				
102-18	Governance structure	SR 4		
102-19	Delegating authority	SR 4-6		
102-20	Executive-level responsibility for economic, environmental, and social topics	SR 6		
102-21	Consulting stakeholders on economic, environmental, and social topics	SR 12-13, SCG AR 148-156		
102-22	Composition of the highest governance body and its committees	SR 4-6, SCG AR 165		
102-23	Chair of the highest governance body and its committees	SCG AR 165-177		
102-24	Norminating and selecting the highest governance body	SCG AR 143-145		
102-25	Conflicts of interest	SCG AR 155		
102-26	Role of highest governance body in setting purpose, values, and strategy	SR 3, SR 6, SCG AR 165-177		
102-27	Collective knowledge of highest governance body	SCG AR 146-148		
102-28	Evaluating the highest governance body's performance	SCG AR 145-147		

Standard Disclosure		Location	Disclosure/ Comment	Assurance
102-29	Identifying and managing economic, environmental, and social impacts	SCG AR 72-83		
102-30	Effectiveness of risk management process	SCG AR 72-84		
102-31	Review of economic, environmental, and social topics	SR 5		
102-32	Highest governance body's role in sustainability reporting	SR 3, SR 6		
102-33	Communicating critical concerns	SR 12-13, SCG AR 73-74		
102-34	Nature and total number of critical concerns	SR 28-29, SCG AR 72-83		
102-35	Remuneration policies	SCG AR 182-187		
102-36	Process of determining remuneration	SCG AR 181-183		
102-37	Stakeholder's involvement in remuneration	SCG AR 181-183		
102-38	Annual total compensation ratio	SCG AR 185-187		
102-39	Percentage increase in annual total compensation ratio	SCG AR 185-187		
Stakeholder Engagement				
102-40	List of stakeholder groups	SR 12-13		
102-41	Collective bargaining agreements	SR 50		
102-42	Identifying and selecting stakeholders	SR 12-13		
102-43	Approach to stakeholder engagement	SR 12-13		
102-44	Key topics and concerns raised	SR 12-13		
Reporting Practice				
102-45	Entities including in the consolidated financial statements	SR 62-63, SCG AR 124-128		
102-46	Defining report content and topic Boundaries	SR 48-49		
102-47	List of material topics	SR 28-29		
102-48	Restatements of information	SR 48-49		
102-49	Changes in reporting	SR 48-50		
102-50	Reporting period	SR 48-51		
102-51	Date of most recent report	SR 48-52		
102-52	Reporting cycle	SR 48-53		
102-53	Contact point for questions regarding the report	SR 48-54		
102-54	Claims of reportintg in accordance with the GRI Standards	SR 48		
102-55	GRI content index	SR 67-72		
102-56	External assurance	SR 65-66		
GRI 103: Management Approach				
103-1	Explanation of the material topic and its Boundary	SR 28-29		
103-2	The management approach and its components	SR 4-5		
103-3	Evaluation of the management approach	SR 4-5		
GRI 200: Economic				
GRI 201: Economic Performance				
201-1	Direct economic value generated and distributed	SR 51-52		
201-2	Financial implications and other risks and opportunities due to climate changes	SR 30-31		

Standard Disclosure		Location	Disclosure/ Comment	Assurance
201-3	Defined benefit plan obligations and other retirement plans	-	Under company rules and regulation	
201-4	Financial assistance received from government	SR 51-52		
GRI 202: Market Presence				
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	SR 60-61		
202-2	Propotion of senior management hired from the local community	SR 60-61		
GRI 203: Indirect Economic Impacts				
203-1	Infrastructure investments and services supported	SR 60-61		
203-2	Significant indirect economic impacts	SR 60-61		
GRI 204: Procurement Practices				
204-1	Propotion of spending on local suppliers	SR 51-52		
GRI 205: Anti-corruption				
205-1	Operations assessed for risks related to corruption	SR 39		
205-2	Communication and training about anti-corruption policies and procedures	SR 39		
205-3	Comfirmed incidents of corruption and actions taken	SR 51-52		
GRI 206: Anti-competitive Behavior				
206-1	Legal actions for anti-competitive behavior, anit-trust, and monopoly practices	SR 39, SCG AR 201-202		
GRI 300: Environmental				
GRI 301: Materials				
301-1	Material used by weight or volume	SR 53		
301-2	Recycled input materials used	SR 53		
301-3	Reclaimed products and their packging material	-	Information of reclaimed products and packaging materials are collected by business unit for efficient production and quality improvement	
GRI 302: Energy				
302-1	Energy consumption within the organization	SR 14, SR 30-31, SR 54		Yes
302-2	Energy consumption outside of the organization	-	Data was collected by SCG Logistics of it's inbound/outbound but for internal use only	
302-3	Energy intensity	SR 54		
302-4	Reduction of energy consumption	SR 14, SR 30-31, SR 54		
302-5	Reductions in energy requirements of products and services	SR 14, SR 36-37		
GRI 303: Water and Effluents (2018)				
303-1	Interactions with water as a shared resource	SR 14, SR 42-43		
303-2	Management of water discharge-related impacts	SR 14, SR 42-43		
303-3	Water withdrawal	SR 14, SR 55		Yes
303-4	Water discharge	SR 14, SR 55		Yes
303-5	Water consumption	SR 14, SR 55		

Standard Disclosure		Location	Disclosure/ Comment	Assurance
GRI 304: Biodiversity				
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	-	Not Relevent to business	
304-2	Significant impacts of activities, products and services on biodiversity	-	Not Relevent to business	
304-3	Habitats protected or restored	-	Not Relevent to business	
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	-	Not Relevent to business	
GRI 305: Emission				
305-1	Direct (Scope 1) GHG emissions	SR 14, SR 30, SR 53		Yes
305-2	Energy indirect (Scope 2) GHG emissions	SR 14, SR 30, SR 53		Yes
305-3	Other indirect (Scope 3) GHG emissions	-	Data was collected but for internal use only	
305-4	GHG emissions intensity	SR 14, SR 30, SR 53		
305-5	Reduction of GHG emissions	SR 14, SR 30, SR 53		
305-6	Emissions of ozone-depleting substances (ODS)	-	Data not avaliable	
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	SR 42-43, SR 57		Yes
GRI306: Waste (2020)				
306-1	Waste generation and significant waste-related impacts	SR 42-43, SR 56		
306-2	Management of significant waste-related impacts	SR 42-43, SR 56		
306-3	Waste generated	SR 42-43, SR 56		Yes
306-4	Waste diverted from disposal	SR 42-43, SR 56		Yes
306-5	Waste directed to disposal	SR 42-43, SR 56		Yes
GRI307: Environmental Compliance				
307-1	Non-compliance with environmental laws and regulation	SR 42-43, SR 55		
GRI308: Supplier Environmental Assessment				
308-1	New suppliers that were screened using environmental criteria	SR 40, SR 50		
308-2	Negative environmental impacts in the supply chain and actions taken	SR 40, SR 50	Number and coverage of supplier identified as having high Potential Sustainability (including environmental) Risk	
GRI 400: Social				
GRI 401: Employment				
401-1	New employee hires and employee turnover	SR 45, SR 61		
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	-	Employment contract of temporary or part-time employee	
401-3	Parental leave	SR 61		
GRI 402: Labor/Management Relations				
402-1	Minimum notice periods regarding operational changes	-	Under Labor Protection Act	

Standard Disclosure		Location	Disclosure/ Comment	Assurance
GRI 403: Occupational Health and Safety (2018)				
403-1	Occupational health and safety management system	SR 34-35	All companies are implemented regarding to OHSAS 18001/ ISO 45001, Process Safety Management (PSM) and SCG SafetyFramework	
403-2	Hazard identification, risk assessment, and incident investigation	SR 34-35	All companies are implemented regarding to OHSAS 18001/ ISO 45001, Process Safety Management (PSM) and SCG SafetyFramework	
403-3	Occupational health services	SR 34-35		
403-4	Worker participation, consultation, and communication on occupational health and safety	SR 34-35		
403-5	Worker training on occupational health and safety	SR 34-35		
403-6	Promotion of worker health	SR 34-35		
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	SR 34-35		
403-8	Workers covered by an occupational health and safety management system	-	100% of employees and contractors	
403-9	Work-related injuries	SR 58-59		Yes
403-10	Work-related ill health	SR 58-59		Yes
GRI 404: Training and Education				
404-1	Average hours of training per year per employee	SR 60-61		
404-2	Programs for upgrading employee skills and transition assistance programs	SR 45		
404-3	Percentage of employees receiving regular performance and career development reviews	-	100% of employees	
GRI 405: Diversity and Equal Opportunity				
405-1	Diversity of governance bodies and employees	SR 60-61		
405-2	Ratio of basic salary and remuneration of women to men	SR 60-61		Yes
GRI 406: Non-discrimination				
406-1	Incidents of discrimination and corrective actions taken	-	No case found	
GRI 407: Freedom of Associate and Collective Bargaining				
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	-	No case found	
GRI 408: Child Labor				
408-1	Operations and suppliers at significant risk for incidents of child labor	-	No case found	
GRI 409: Forced or Compulsory Labor				
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	-	No case found	

Standard Disclosure		Location	Disclosure/ Comment	Assurance
GRI 410: Security Practices				
410-1	Security personnel trained in human rights policies or procedures	-	100% of security personnel were trained by contracted company in accordance with SCG Supplier Code of Conduct	
GRI 411: Rights of Indigenous Peoples				
411-1	Incidents of violations involving rights of indigenous peoples	-	No case found	
GRI412: Human Rights Assessment				
412-1	Operations that have been subject to human rights reviews or impact assessments	SR 44		
412-2	Employee training on human rights policies or procedure	SR 44		
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	SR 44		
GRI413: Local Communities				
413-1	Operations with local community engagement, impact assessments, and development programs	SR 46-47		
413-2	Operations with significant actual and potential negative impacts on local communities	-	No case found	
GRI414: Supplier Social Assessment				
414-1	New suppliers that were screened using social criteria	SR 40		
414-2	Negative social impacts in the supply chain and actions taken	-	No case found	
GRI 415: Public Policy				
415-1	Political contributions	SR 51-52	Performance Economic	
GRI 416: Customer Health and Safety				
416-1	Assessment of the health and safety impacts of product and service categories	SR 36-37	All products and services are assessed regarding health and safety impact by using the Product Hazard Analysis under ISO 9001	
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	-	No case found	
GRI 417: Marketing and Labeling				
417-1	Requirements for product and service information and labeling	SR 36-37		
417-2	Incidents of non-compliance concerning product and service information and labeling	-	No case found	
417-3	Incidents of non-compliance concerning marketing communications	-	No case found	
GRI 418: Customer Privacy				
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	-	No case found	
GRI 419: Socioeconomic Compliance				
419-1	Non-compliance with law and regulations in the social and economic area	-	No case found	

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)	RT-CH-000.A	SR 52
Green House Gas Emissions	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations	Quantitative	Metric tons (t) CO_2-e, Percentage (%)	RT-CH-110a.1	SR 53
	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	RT-CH-110a.2	SR 30-31
Air Quality	Air emissions of the following pollutants: (1) NOx (excluding N_2O), (2) SOx, (3) particulate matter (PM 10), (4) dioxins/furans, (5) volatile organic compounds (VOCs), (6) polycyclic aromatic hydrocarbons (PAHs), and (7) heavy metals	Quantitative	Metric tons (t)	RT-CH-120a.1	(1), (2), (3), (5) SR 57 (4), (6), (7) Data not avaliable
Energy Management	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage alternative, (4) percentage renewable	Quantitative	Gigajoules (GJ), Percentage (%)	RT-CH-130a.1	SR 54
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^3), Percentage (%)	RT-CH-140a.1	SR 55
	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	Quantitative	Number	RT-CH-140a.2	SR 55
	Description of water management risks and discussion of strategies and practices to mitigate those risks	Discussion and Analysis	n/a	RT-CH-140a.3	SR 42-43
Waste Management	Amount of waste generated, percentage hazardous, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	RT-CH-150a.1	SR 56
Community Relations	Discussion of engagement processes to manage risks and opportunities associated with community interests	Discussion and Analysis	n/a	RT-CH-210a.1	SR 12-13
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	TRIR: Case/200,000 manhours Employee 0.023 Contractor 0.083 Fatality: Case/200,000 manhours Employee 0.000 Contractor 0.028
	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	SR 35
Product Design for Use-phase Efficiency	Revenue from products designed for use-phase resource efficiency	Quantitative	Reporting currency	RT-CH-410a.1	SR 51

Topic	Metric	Category	Unit of Measure	Code	Response/ Reference
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	SR 59
	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	RT-CH-410b.2	SR 36-37
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-540a.1	SR 39
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	SR 59
	Number of transport incidents	Quantitative	Number	RT-CH-540a.1	SR 59

Task Force on Climate-related Financial Disclosures (TCFD)

Recommendations		Disclose	
		SCG 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.	72-73	3-6
	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.	74	11, 20-21, 28-29, 30-31
	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.	72-78	11, 20-21, 28-29, 30-31, 36-37
	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.	-	30-31, 36-37, 42-43
	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	84	30-31, 53
	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	72, 84	30-31, 36-37, 42-43, 53, 54, 55

Awards and Key Collaboration in 2021

Awards

SCG Chemicals was recognized for **the Prime Minister's Industry Award 2021** from the Ministry of Industry.

- Map Ta Phut Olefins Company Limited, awarded with "The Prime Minister's Best Industry Award."
- SCG Chemicals Company Limited, awarded with Prime Minister's Industry Award in the category of Circular Economy.
- Rayong Olefins Company Limited, awarded with Prime Minister's Industry Award in the category of Corporate Social Responsibility.
- Thai MMA Company Limited, awarded with Prime Minister's Industry Award in the category of Environmental Quality Conservation.

RIL Industrial Estate of SCG Chemicals has been certified with the top-tier **Eco-World Class** status by the Industrial Estate Authority of Thailand (IEAT), Department of Industrial Work, Ministry of Industry for three consecutive years.

SCG Chemicals was the first organization in Thailand to receive the International Sustainability and Carbon Certification or **ISCC PLUS,** for sustainable management and development throughout the supply chain.

Key Collaboration

ALLIANCE TO END PLASTIC WASTE

ELLEN MACARTHUR FOUNDATION

wbcsd

สภาอุตสาหกรรมแห่งประเทศไทย
The Federation of Thai Industries

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